

# 2007 Network Cameras



**Panasonic ideas for life**

A photograph of a man and a young girl looking at a laptop screen. The man is on the left, wearing a white t-shirt, and the girl is on the right, wearing a blue headband and a grey top. They are both looking down at the laptop screen, which is displaying some text. The background is slightly blurred.

# Innovative ideas.

*At Panasonic, we're committed to better understanding the way people live, work and play.*

*We never stop trying to increase our knowledge of the ways in which technology can improve people's lives.*

*The insights we gain from these efforts make it possible to continually transform ideas into products that make our customers' lives simpler, more enjoyable, more productive and more secure.*

**See There**

When You Can't Be There™

See There When You Can't Be There.™ With our complete Pro-Line of intelligent IP Network Cameras, build sophisticated solutions to meet the needs of your customers and expand your business. Connect to a powerful recording system with video analytics, or integrate the cameras into the automation system, pulling the video into touch panels, and using the cameras to trigger events. Even add advanced

# Intelligent solutions.

functionality from the business telephone terminals. There are many options for your installations, with routers, recording software, covers, enclosures, and the groundbreaking new HD-PLC Ethernet Adaptors which allow you to add an Ethernet connection virtually anywhere there is an AC outlet.

At Panasonic, we're committed to giving you tools to expand your business and satisfy your customers, no matter what their video communications needs may be. Now that is Panasonic. Ideas for Life.



**Panasonic**

BL-C111



**Panasonic ideas for life**

		Business use							
Recording type >>>		MPEG-4 and JPEG				JPEG only			
Model No. >>>		BB-HCM581A HCM580A	BB-HCM515A	BB-HCM531A	BB-HCM511A	BB-HCE481A	BB-HCM381A	BB-HCM403A	BB-HCM371A
<b>Network Camera Line-up and Feature comparison</b>									
Easy Set-up	UPnP support	●	●	●	●	●	●	●	●
	DDNS service supported	●	●	●	●	●	●	●	●
Capture	Color night view mode	0.09	3.0	0.2	0.2	0.09	0.09	0.2	0.2
	Adaptive contrast enhancement	—	●	—	—	—	—	—	—
	Human detection sensor	—	—	—	—	—	—	—	—
	Motion detection function	●	●	●	●	●	●	●	●
	Mega-pixel resolution	—	●	—	—	—	—	—	—
	SD Memory Card recording	●	●	●	●	●	●	●	●
Store	Recording audio simultaneously with SD Memory Card	●*2	●	●	●	—	—	—	—
	Buffered images	●	●	●	●	●	●	●	●
	Recording program	●	●	●	●	●	●	●	●
	Image transfer function	●	●	●	●	●	●	●	●
Connect	IPv6 compatibility	●	●	●	●	●	●	●	●
	IPSec compatibility	—	—	—	—	●	●	●	●
	Simultaneous MPEG-4 and JPEG	●	●	●	●	—	—	—	—
View	Multi-camera capability	●	●	●	●	●	●	●	●
	Full screen display	●	●	●	●	—	—	—	—
	Cell phone monitoring	●	●	●	●	●	●	●	●
	30 fps at VGA size*1	●	●	●	●	—	—	—	—
	Time stamp function	●	●	●	●	●	●	●	●
	Analog video output	●	●	●	●	●	●	—	—
	SD viewer	●	●	●	●	●	●	●	●
	Buffered image viewer	●	●	●	●	●	●	●	●
Control	Audio 2-way communication	●*2	●	●	●	●	●	●	●
	Built-in microphone (1-way communication)	—	—	—	—	—	—	—	—
	Remote pan and tilt control	●	●	●	●	●	●	—	●
	42x zoom	●	—	—	—	●	●	●	—
	10x zoom	●*3	●	●	●	●*3	●*3	●*3	●
	Privacy mode	—	—	—	—	—	—	—	—
Others	Easy PoE power supply	●*2	●	●	●	—	●	—	—
	Splash-resistant body	—	—	●	—	—	—	—	●
	Wireless communication	—	—	—	—	—	—	—	●

\*1 MPEG-4 playback only. \*2 Not supported by the BB-HCM580A. \*3 Multi-camera mode only.



# Panasonic

## Network Camera Solutions for any Application

Panasonic offers a complete line of Network Cameras...

from **easy-to-use home models** for remote monitoring,  
to **sophisticated surveillance applications**.



Cameras for Life



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# See There

When You Can't Be There™



## Wouldn't You Like to Know...™

**What's going on at the store?**

**What happened to the missing equipment?**

**What's going on at your store?**

**Did the employees open on time?**

**How to add new long-term revenue streams?**

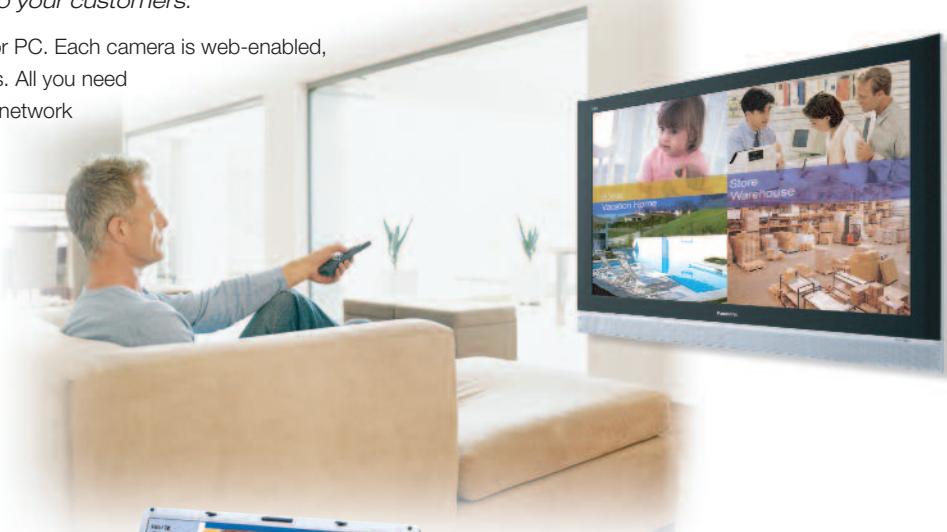
Place these powerful cameras in businesses, homes, city streets, or almost anywhere else so your customer can keep an eye on things, with no PC required on location!<sup>1</sup> Panasonic Network Cameras can be viewed and controlled from a standard web browser.<sup>2</sup> They're easy to integrate into complete solutions, easy to operate and require no additional software for viewing on a PC or cell phone.<sup>2</sup>

### New Camera Solutions for Internet Viewing

Panasonic network cameras are an innovative new way to offer Zero Distance Management to your customers.

View images from a compatible cell phone or PC. Each camera is web-enabled, so no PC is required at the camera locations. All you need is a broadband connection. And Panasonic network cameras can be placed virtually anywhere, indoors or outdoors, with wired or wireless operation (select models). View multiple local or remote cameras on a TV (with optional TV adapter) with zoom, pan and tilt control.\* Look into the innovative network cameras from Panasonic today.

\*Not available on all models.



**View/Control  
from your Computer.**



**View/Control from your  
Cell Phone or PDA.<sup>2</sup>**

To allow easy viewing from a computer or cell phone, you can choose a personal web address,<sup>3</sup> which can allow access to the password protected web page built into each camera.

And the cameras connect directly to your router, so you don't even need a computer on location.



## Business Use



### Store management

The multi-camera function lets you monitor multiple stores or cameras at a glance, reducing the need for routine visits. Since the voice communication function allows you to talk with your staff while viewing the camera, you can exchange information about store activity.



### Factory management

Each camera can be monitored periodically from the office. You can view machinery and processes in real time from remote locations. Office staff can also be alerted by an alarm when motion is detected, so there is less need to physically look around the factory, reducing labor expenses and increasing efficiency.

[View with up to 8 cameras.](#)



### Parking lot surveillance

Installing a camera can deter crime and reduce the number of car break-ins. The IPsec protocol helps ensure that images will not be picked up by electronic eavesdropping, thus providing both convenience and safety.



### Posting nightclub images

Thanks to the CCD sensor, you can post a sharp, clear image of a dance floor on your Web site to show the inside of the club. This will be well received by customers. Showing club images on a Web site also keeps the employees on their toes, which helps to improve the quality of their service.



## Home Use



### Home pets

You can watch your pets from the office, so you always feel close to your loved ones. Because images can be temporarily recorded during specified times in the camera's built-in memory, you can view them at your leisure after returning home.



### Home monitoring

The system detects any changes in your empty house and can send an image to your office PC or cell phone, so you only need to check the camera image when something happens. Using the wireless camera monitoring system, you can also check the entire house on a remote TV screen.

# Improve

## Your Restaurant Business with the Panasonic Internet Remote Monitoring System



### Recommended features

Recording integration pages 38-42

Integrate into powerful recording systems with video analytics

Multi-camera capability page 20

For viewing and controlling multiple cameras

Motion detection page 19

Camera captures images only when motion is detected

Cell phone monitoring page 20

Keep an eye on your restaurant even when on the go

### Zero Distance Management Can Help Improve Your Bottom Line

- **Increase Customer Service.** View and evaluate how your customers are being treated while you are away.
- **Improve Staff Performance.** Recordings can be used to educate staff and improve customer service.
- **Keep Staff Honest and Reduce Loss.** Access remote viewing of cash registers to verify transactions are being handled properly and accurately.
- **Deter Crime and Vandalism.** The presence of cameras tends to reduce illegal activity.

### Manage Your Business From Just About Anywhere

View your restaurant from your PC, Cell Phone, PDA, or Television, and receive email alerts if there's unusual activity.

Now you can manage your business more efficiently by having the tools that Zero Distance Management offers.

### Enjoy These Benefits:

- Asset loss prevention
- Time and money-saving solution
- Increased productivity and staff confidence
- Improved customer safety and satisfaction
- Enhanced store management procedures

### Gain Revenue Streams

- Learn more by browsing our online, interactive catalog. Visit [www.netcamdealer.com](http://www.netcamdealer.com)

### Solutions

	Basic	Standard	Premium
Cash Register	BL-C1A	BB-HCM403A	BB-HCM515A
Entrance	BL-C1A	BB-HCM403A	BB-HCM515A
Back Door	BL-C1A	BB-HCM403A	BB-HCM515A
Dining Room	BL-C1A	BB-HCM511A	BB-HCM581A
Kitchen	BL-C1A	BB-HCM531A	BB-HCM581A
Stock Room	BL-C1A	BB-HCM511A	BB-HCM581A
Parking Lot	BL-C1A	BB-HCM531A	BB-HCM581A <sup>†</sup>
Recording	BB-HNP15A	Integration Options	Integration Options
PoE		PD-3012/AC	802.3af compliant
Router	BB-HGW700A	BB-HGW700A	BB-HGW700A

<sup>†</sup> Use with outdoor enclosure. See page 35 for more information.



# Secure

Your Store with the Panasonic Internet Remote Monitoring System

## Zero Distance Management Can Help Secure Your Business

- Capture Suspicious Activity and Deter Crime.** View and record events and receive Email notifications from virtually anywhere.
- Keep Staff Honest and Reduce Loss.** Access remote viewing of cash registers to verify transactions are being handled properly and accurately.
- Increase Customer Service.** View and evaluate how your customers are being treated while you are away.
- Improve Staff Performance.** Video monitoring allows you to be there when you can't physically be there. Recorded views can be used to educate staff and improve your level of customer service.



## Manage Your Business From Just About Anywhere

View your store from your PC, Cell Phone, PDA, or Television, and receive email alerts if there's unusual activity.

Now you can manage your business more efficiently by having the tools that Zero Distance Management offers..

### Enjoy These Benefits:

- Asset loss prevention
- Increased productivity and staff confidence
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- Improved customer safety and satisfaction

### Gain Revenue Streams

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Visit [www.netcamdealer.com](http://www.netcamdealer.com)

## Solutions

	Basic	Standard	Premium
Cash Register	BL-C1A	BB-HCM403A	BB-HCM515A
Stock Room	BL-C1A	BB-HCM511A	BB-HCM581A
Outside Fitting Room	BL-C1A	BB-HCM403A	BB-HCM581A
Entrance/Back Door	BL-C1A	BB-HCM403A	BB-HCM515A
Parking Lot	BL-C1A (window)	BB-HCM371A	BB-HCM581A†
Warehouse	BB-HCM531A	BB-HCM531A	BB-HCM581A
Recording	BB-HNP15A	Integration Options	Integration Options
PoE	FS108P (Netgear)	802.3af compliant	802.3af compliant
Router	BB-HGW700A	BB-HGW700A	BB-HGW700A

† Use with outdoor enclosure. See page 35 for more information.

### Recommended features

Audio 2-way communication*	page 21
For smooth communication *select models	
Multi-camera capability	page 20
For integrated control of multiple shops	
SD Memory Card recording	page 30
For recorded confirmation	
42x zoom and pan/tilt	page 21
For wide-ranging control with a single camera	

For more information please visit  
[www.netcamdealer.com/convenience](http://www.netcamdealer.com/convenience)



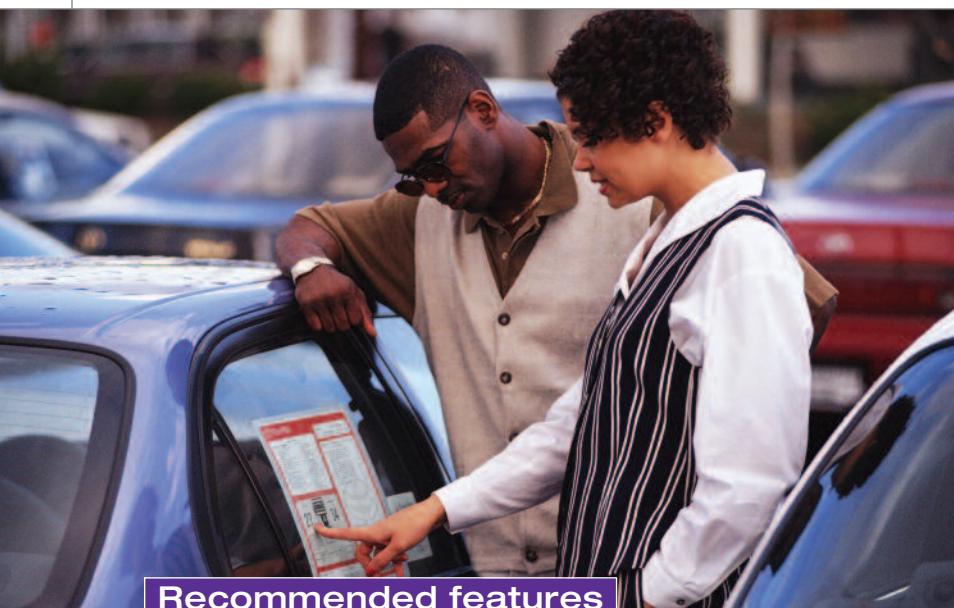
## business applications > CAR DEALERSHIPS

# Build

## Your Car Dealership with the Panasonic Internet Remote Monitoring System

### Remote Monitoring Can Help Improve Your Bottom Line

- **Increase Customer Service.** View and evaluate how your customers are being treated while you are away. Identify interested customers quickly and improve customer service.
- **Improve Staff Performance.** View and record the activity of your sales staff allowing you to better improve on their sales performance.
- **Deter Crime and Vandalism.** The presence of cameras tends to reduce illegal activity. Receive an Email notification if there is activity in your showroom(s) and parking lot(s) after hours.
- **Record service** in the repair shop to offer video proof of your repair completion.



#### Recommended features

High-power zoom	page 19
For verifying customer activity on the lot	
Color Night View mode	page 19
For thorough monitoring, even in darker areas	
SD Memory Card recording	page 30
For saving a large amount of images	

For more information please visit  
[www.netcamdealer.com/cardealer](http://www.netcamdealer.com/cardealer)

#### Manage Your Business From Just About Anywhere

View your lot and showroom from your PC, Cell Phone, PDA, or Television, and receive email alerts if there's unusual activity.

Now you can manage your business more efficiently by having the tools that Zero Distance Management offers.

#### Enjoy These Benefits:

- Asset loss prevention
- Time and money-saving solution
- Increased productivity and staff confidence
- Improved customer service and satisfaction
- Enhanced business management procedures

#### Gain Revenue Streams

- Learn more by browsing our online, interactive catalog. Visit [www.netcamdealer.com](http://www.netcamdealer.com)

#### Solutions

	Basic	Standard	Premium
Lot View	BB-HCM371A	BB-HCM371A	BB-HCM581†
Entrance / Exit	BL-C1A	BB-HCM403A	BB-HCM515A
Maintenance Bays	BL-C1A	BB-HCM403A	BB-HCM581A
Parts Dpt. Counter	BL-C1A	BB-HCM403A	BB-HCM515A
Showroom	BB-HCM581A	BB-HCM581A	BB-HCM581A
Recording	BB-HNP15A	BB-HNP15A	Integration Options
PoE	802.3af compliant	802.3af compliant	802.3af compliant
Router	BB-HGW700A	BB-HGW700A	BB-HGW700A

† Use with outdoor enclosure. See page 35 for more information.



## business applications > CONSTRUCTION SITES

# Maintain

Your Construction Site with the Panasonic Internet Remote Monitoring System

### Improve Your Jobsite Management and Increase Your Bottom Line

- **Manage Multiple Jobsites.** View and manage your construction sites from virtually anywhere at any time.
- **Improve Productivity.** Stay on schedule by being better able to monitor the progress of your sub-contractors.
- **Increase Customer ROI.** Sell an upgraded structured wiring package. Just demo the system "live" to the buyer and allow them to see the benefits themselves.
- **Deter Crime, Theft and Vandalism.** The presence of cameras tends to reduce illegal activity and help reduce loss of building materials. Plus, receive an Email notification if there is suspicious activity on the jobsite(s) after hours.

### Manage Your Business From Just About Anywhere

View your jobsite from your PC, Cell Phone, PDA, or Television, and receive email alerts if there's unusual activity.

Now you can manage your work more efficiently by having the tools that Zero Distance Management offers.

#### Enjoy These Benefits:

- Asset loss prevention
- Time and money-saving solution
- Increased productivity and confidence
- Leverage for additional revenue
- Enhanced business management procedures

#### Gain Revenue Streams

- Learn more by browsing our online, interactive catalog. Visit [www.netcamdealer.com](http://www.netcamdealer.com)

## Solutions

	Basic	Standard	Premium
Main View	BB-HCM371A	BB-HCM580A	BB-HCM581A <sup>†</sup>
Inside Structure	BL-C20A	BB-HCM531A	BB-HCM371A
Recording	BB-HNP15A	BB-HNP15A	Integration Options
Router	Wireless G Router	BB-HGW700A	BB-HGW700A

<sup>†</sup> Use with outdoor enclosure. See page 35 for more information.



For more information please visit  
[www.netcamdealer.com/construction](http://www.netcamdealer.com/construction)

#### Recommended features

High-power zoom	page 21
Get a close look at what's going on at the job site	
Remote pan and tilt control	page 21
Monitor a large area of the job site with a single camera	
Easy PoE power supply*	page 21
Perfect for when there's no nearby electrical power supply	
*select models	

# Safeguard

## Your Daycare Center with the Panasonic Internet Remote Monitoring System



### Recommended features

Guest accounts page 18

Up to 50 accounts to enhance revenue

Remote pan and tilt control page 21

Allows parents to look around and locate their child

Audio 2-way communication\* page 21

Use the built-in mic\* and your speaker to enjoy walkie-talkie-like communication

\*select models

### Zero Distance Management Can Help Your Customers Secure Their Business

- **Give Parents "Peace of Mind".** Increase the quality of your customer service by giving parents the ability to view their children from virtually anywhere. Grant parents "live" access to the cameras with the use of secured log-in and passwords for each person.
- **Improve Staff Performance.** Be there when you can't physically be there. Employee awareness of being monitored tends to lead to a higher quality of service and care.
- **Deter Crime.** The presence of cameras tends to reduce illegal activity.

### Manage Your Business From Just About Anywhere

View your daycare center from your PC, Cell Phone, PDA, or Television, and receive email alerts if there's unusual activity.

Now you can manage your business more efficiently by having the tools that Remote Monitoring offer you.

#### Enjoy These Benefits:

- Increased trust and confidence
- Improved customer service and satisfaction
- Enhanced business management procedures

#### Gain Revenue Streams

- Learn more by browsing our online, interactive catalog.  
Visit [www.netcamdealer.com](http://www.netcamdealer.com)

### Solutions

	Basic	Standard	Premium
Classrooms	BL-C111A	BB-HCM511A	BB-HCM581A
Indoor Play Area	BB-HCM511A	BB-HCM515A	BB-HCM581A
Playground	BB-HCM531A	BB-HCM580A <sup>†</sup>	BB-HCM580A <sup>†</sup>
Recording	BB-HNP15A	BB-HNP15A	Integration Options
PoE	FS108P (Netgear)	802.3af compliant	802.3af compliant
Router	BB-HGW700A	BB-HGW700A	BB-HGW700A

<sup>†</sup> Use with outdoor enclosure. See page 35 for more information.



# Empower Your Students

## Remote Applications Enable Absent Students to Join the Lesson

- **Empower absent students** with the ability to join the lesson from virtually anywhere. Using presets, the teacher can easily pan from themselves to the blackboard or to an overhead slide. Students who log in with a password can participate in the live lesson or view the recorded lesson at a later time.
- **Bring Your Visual Aids To Life.** Aim the camera at your visual aid and zoom in with incredible clarity using the camera software's Full-Screen Mode. Panasonic network cameras feature progressive scan as opposed to a traditional interlaced signal, so overheads are clearer and text is more legible.

### Your Client Will Enjoy These Benefits:

- Absent students can join a lesson while in progress or view later
- Increased clarity and flexibility with visual aids
- Record lessons for teacher training



## Solutions

	Basic	Standard	Premium
Blackboard	BB-HCM580A	BB-HCM580A	BB-HCM581A
Hallway	BB-HCM511A	BB-HCM531A	BB-HCM581A
Stairwell/Entrance	BB-HCM511A	BB-HCM515A	BB-HCM581A
Athletic Fields	BB-HCM531A	BB-HCM580A†	BB-HCM581A†
Schoolyard	BB-HCM531A	BB-HCM580A†	BB-HCM581A†
Recording	BB-HNP15A	Integration Options	Integration Options
PoE	FS108P (Netgear)	802.3af compliant	802.3af compliant
Router	Basic Router	BB-HGW700A	BB-HGW700A

† Use with outdoor enclosure. See page 35 for more information.



### Recommended features

Full screen mode	page 19
Use the camera in full screen mode to show documents or objects live during class on the projector	
High-power zoom	page 21
Students can get a close look at the teachers handouts and slides	
Audio 2-way communication*	page 21
Students can hear the lesson and ask questions from home	*select models

For more information please visit  
[www.netcamdealer.com/classroom](http://www.netcamdealer.com/classroom)



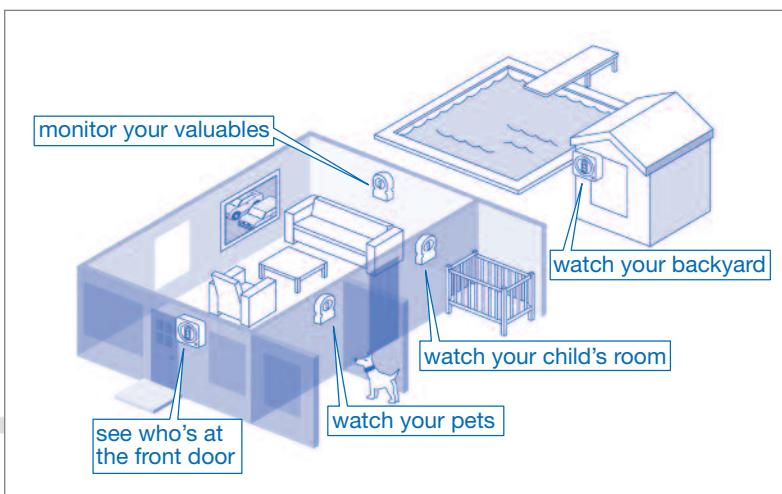
# Monitor

## Things in your Home you Need to Keep an Eye On with a Panasonic Internet Remote Monitoring System



### Keep an Eye on your Loved Ones

- **Know when your kids are home from school.** Still at work and wondering if the kids are home from school? Program the camera to email you a picture of the kids entering the front door.
- **Keep an eye on the babysitter.** Make sure the new sitter's working out okay by keeping an eye on things. Know if the baby's awake or not.
- **Make sure your elderly loved ones are okay.** Have a person with special needs at home during the day? Check in from your laptop or cell phone to make sure the ones you care about are managing.
- **Find out if the cleaning lady showed up on time.** Keep an eye on workers in your home to make sure you're getting what you paid for.



### Recommended features

Image transfer function	page 20
For alerting yourself when motion occurs	
Remote pan and tilt control	page 21
For checking a large area	
Privacy mode	page 31
For covering the lens when it is not needed	
Wireless camera monitoring system	page 28
For checking on a TV screen	

# Watch

**Your Home and Pets While You're Away**

**Remote Monitoring lets you...**

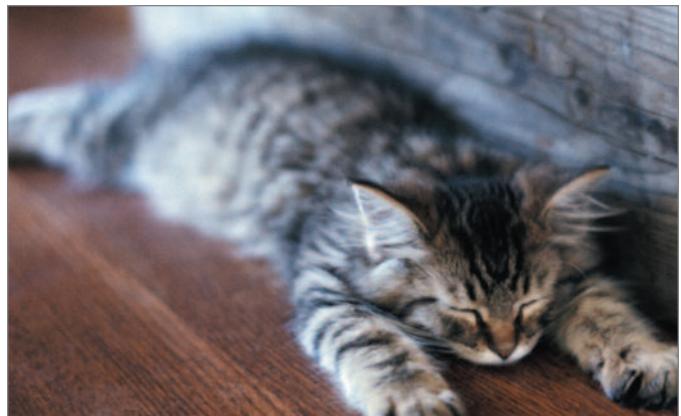
## See There

When You Can't Be There™

- **Program your cameras to detect movement in your house or by the pool** and have a picture sent to your office PC or cell phone.
- **See who's at the front door** before getting up to open it. Watch your backyard and back entrance to make sure everything's secure.
- **Watch your vacation home** to make sure the electrician showed up or to see if the recent storm did any damage.
- **Aim the cameras where you want** to see and control them from your laptop, cell phone or TV.

## Watch your Pets

- **Now you can watch your pets** while at work or on vacation so you'll always feel close to your animals. Did the walker show up as promised? Is the dog sleeping on the sofa? Is the cat scratching your new leather chair? Instantly communicate with your animals via the two-way audio feature available on select cameras.



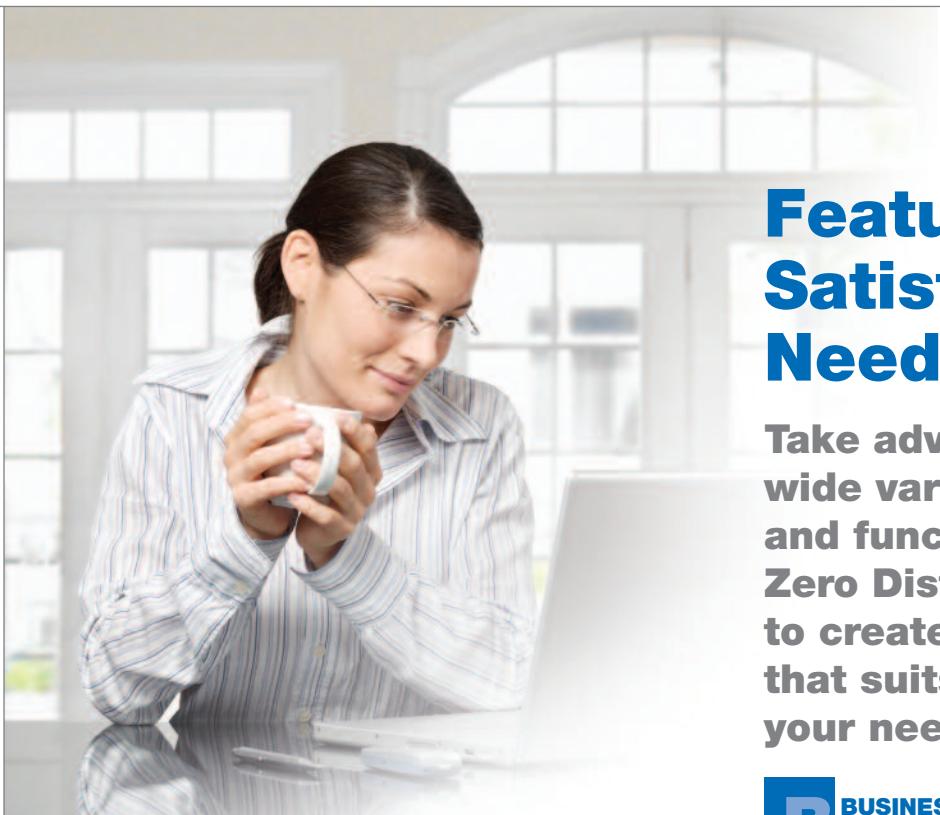
## Solutions

	Basic	Standard	Premium
Front Door	BL-C1A	BL-C20A	BB-HCM531A
Back Door	BL-C1A	BL-C20A	BB-HCM531A
Living Room	BL-C111A	BB-HCM511A	BB-HCM515A
Pool / Backyard	BL-C1A (window)	BL-C131A (window)	BB-HCM581A†
Recording		BB-HNP15A	Integration Options
PoE Midspan		802.3af compliant	802.3af compliant
Router	Basic Router	Wireless G Router	BB-HGW700A

† Use with outdoor enclosure. See page 35 for more information.

**For more information please visit  
[www.netcamdealer.com/home](http://www.netcamdealer.com/home)**





## Features that Satisfy your Needs.

**Take advantage of the wide variety of features and functions available with Zero Distance Management to create a monitoring system that suits your style and meets your needs.**

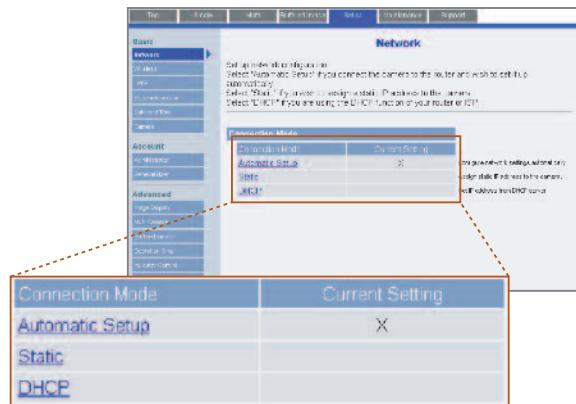


### Easy Setup

Panasonic network cameras are easy to use, even for people who have no special computer knowledge. Panasonic also offers a free service that lets you choose an easy-to-remember URL<sup>3</sup> for accessing the camera over the Internet.

#### **B R Simple UPnP setting**

The cameras support UPnP (Universal Plug and Play)<sup>4</sup> for easy network setting when combined with a UPnP-compatible router. With the included software, the setup wizard guides you through the procedure and completes the network setup automatically.<sup>3</sup> It eliminates complicated procedures and prevents possible errors.



**Applicable models > All Home-use and Business models**

#### **B R Viewnetcam.com service supported**

The Viewnetcam.com service<sup>3</sup> eliminates the need to obtain a static IP address<sup>5</sup> for the camera. Just choose an easy-to-remember camera name<sup>6</sup>, and access it directly by inputting [http://\(CameraName\).viewnetcam.com](http://(CameraName).viewnetcam.com)

**Viewnetcam.com**

Access [www.viewnetcam.com](http://www.viewnetcam.com) for registration information.

**Applicable models >  
All Home-use and  
Business models**



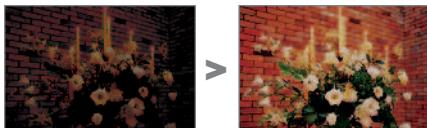
## Recording Options and Features

### **B R** Color Night View mode<sup>7</sup>

#### Seeing even in the dark



When viewing dark subjects, the camera automatically adjusts the brightness to show you the image. A CCD image sensor and smooth motion capture at 30 frames/sec<sup>8</sup> combine to let you see down to a minimum of 0.09 lux.<sup>9</sup> You can see clear, easy-to-view images even in the dark.



Model no.	Sensor type	Minimum brightness
BB-HCM581A, HCM580A, HCE481A, HCM381A	CCD	0.09 lux
BB-HCM531A, HCM511A, HCM403A, HCM371A, HCM331A, HCM311A	CCD	0.2 lux
KX-HCM280A		
BB-HCM515A	CMOS	3.0 lux
KX-HCM110A	CMOS	1.0 lux
BL-C131A, C111A	CMOS	3.0 lux
BL-C30A, C10A	CMOS	1.0 lux
BL-C20A, C1A	CMOS	4.0 lux

### **B** Adaptive contrast enhancement Also compensates for backlighting

The camera automatically corrects the image when one part of it becomes extremely dark. It also compensates only for the dark part, so the entire image is adjusted to the proper brightness for easy viewing from corner to corner.

#### Disable



#### Enable



#### Applicable models > BB-HCM515A

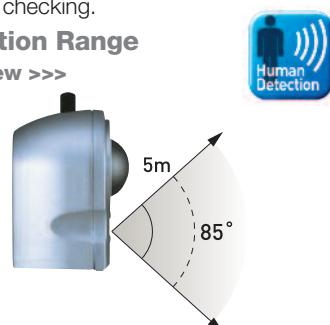
### **B R** Built-in human detection sensor

#### Alerting yourself when changes occur

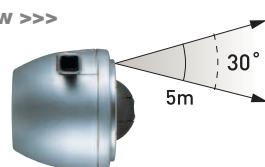
The sensor<sup>10</sup> detects people, animals, etc., due to temperature changes. When detected, the image or a series of images can be sent to you by e-mail<sup>11</sup> for easy checking.

#### Detection Range

##### Side view >>>



##### Top view >>>



#### Applicable models > BL-C111A, C131A, C10A, C30A

### **B R** Motion detection function

In this mode, the camera captures an image only when motion is detected based on the preset threshold or sensitivity of the camera. These images can be stored temporarily in the camera<sup>12</sup>, or sent to you by e-mail or FTP data transfer.<sup>13</sup>



#### Applicable models >

BB-HCM581A, HCM580A, HCE481A, HCM381A, HCM511A, HCM403A, HCM371A, HCM331A, HCM311A, HCS301A  
KX-HCM280A, HCM110A  
BL-C131A, C111A, C30A, C20A, C1A



### **B** Mega-pixel resolution Print out the images you need

Shooting at the high resolution of 1280 x 1024\* pixels allows a clear image even when enlarged. You can check any area you want by taking a closer look. \*For JPEG only. Not applicable to MPEG-4.

#### At 640 x 480 resolution



#### Applicable models > BB-HCM515A

#### At 1280 x 1024 resolution



Clear, sharp image!

## IPv6 Compatibility

### **B** IPv6<sup>14</sup> compatibility Connecting to next-generation networks



These are the world's first<sup>15</sup> network cameras with standard IPv6 support. Thanks to the dual-stack IPv4/IPv6 structure, they can be installed both on an IPv4 network today, and on an IPv6 network in the future.

#### Applicable models >

BB-HCM581A, HCM580A, HCE481A, HCM381A, HCM531A, HCM515A, HCM511A, HCM403A, HCM371A, HCM331A, HCM311A, HCS301A  
KX-HCM280A, HCM110A  
BL-C131A, C111A

### **B** IPsec<sup>16</sup> compatibility Powerful data security

During data communications, packets of data are encrypted. Even if someone were to intercept the data by electronic eavesdropping, it would be extremely difficult to decipher. This function is added to the conventional user name and password authentication to further boost security.

#### Applicable models >

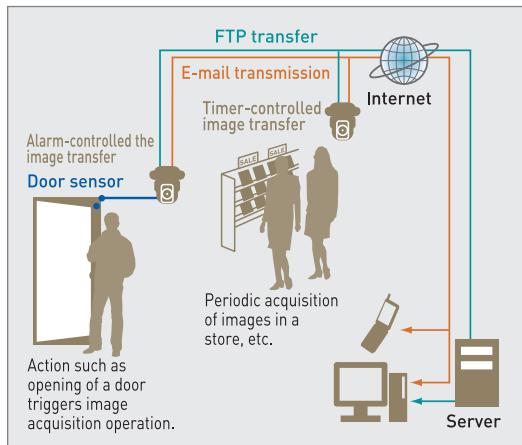
BB-HCE481A, HCM381A, HCM403A, HCM371A, HCM331A, HCM311A, HCS301A  
KX-HCM280A, HCM110A

## Image Transfer Function

### **B R** Image transfer function Alerting yourself when motion occurs

With settings for the sensor alert, motion detection, human detection sensor, timer, and other functions, the camera can transfer images and a data log by e-mail<sup>17</sup> to an e-mail address or by FTP to a server. This allows you to check images only when necessary, and also can prevent you from forgetting to check them.

#### System



**Applicable models > All Home-use and Business models**

## So Many Ways to View

### **B R** Cell phone monitoring<sup>22</sup> Checking at any time

Still images from the camera can be checked on a cell phone that is capable of normal web access. The pan, tilt, and zoom functions can also be operated from the cell phone.

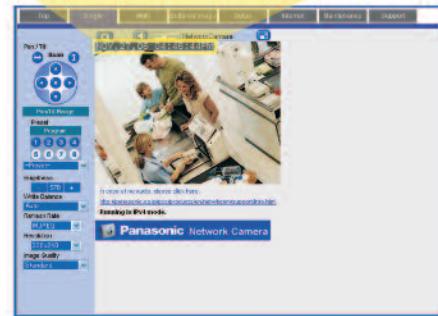


**Applicable models >**  
**All Home-use and Business models**

### **B R** Time and Text Stamp Function Improved accuracy through a time stamp function

The date and time are displayed on all monitored still or moving images. This ensures that even when video is recorded for later viewing, the exact time of the recording will always be in view. This feature is also very useful for marketing research and security checks.

NOV.27.06 04:46:44PM



**Applicable models > All Business models**  
**BL-C131A, C111A**

### **B R** Buffered image viewer Easy viewing of camera-saved images

The viewer makes it easy to check images (from 125 up to 350 depending on model<sup>23</sup>) saved in the camera's buffer memory. You can skip through the images in units of 10 or 100, display their recording time, and download them to a PC if desired.<sup>24</sup>

#### Buffered image viewer



**Applicable models > All Home-use and Business models**

### **B R** Recording program<sup>21</sup> (included) Recording moving images

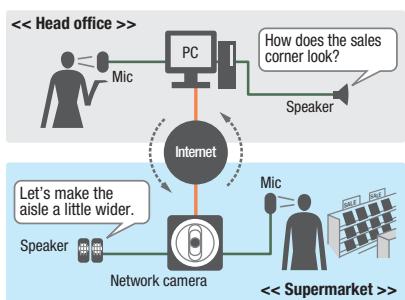
**Applicable models > All Home-use and Business models**

## Camera Control Options

### B Audio 2-way communication<sup>25</sup>

#### Smooth communication

Use the built-in mic<sup>26</sup> and a commercially available speaker with amp to speak back and forth. This lets you exchange information with walkie-talkie type communication.



#### Applicable models >

**BB-HCM311A, HCM311A, HCM381A, HCM331A, HCS301A, HCE481A, HCM403A, HCM581A, HCM531A, HCM515A, HCM511A**  
**KX-HCM110A**

### B R High-power zoom

#### Checking conditions faraway

You can use the zoom function to get a close, detailed look at certain parts of the image while you are monitoring. The 42x zoom is especially convenient for monitoring areas that have considerable depth.

#### 42x zoom (21x optical, 2x digital)



**Applicable models > BB-HCM381A, HCE481A, HCM581A, HCM580A KX-HCM280A**

#### 10x digital zoom



**Applicable models > BB-HCM311A, HCM331A, HCS301A, HCM371A, HCM403A, HCM531A, HCM515A, HCM511A**  
**BL-C1A, C30A, C10A, C131A, C111A, C20A KX-HCM110A**

### B R Remote pan and tilt control

#### Moving the camera as desired

You can use a PC or cell phone directly to change the direction that the camera is facing while monitoring the image. This lets you monitor a large area with a single camera.

#### Applicable models >

**BB-HCM311A, HCM331A, HCM371A, HCM381A, HCE481A, HCM581A, HCM580A, HCM531A, HCM515A, HCM511A**  
**BL-C10A, C30A, C131A, C111A**  
**KX-HCM110A, HCM280A**

#### Operating range



#### KX-HCM110A

Pan (display range: 163°max)  
Tilt (display range: 97°max)

**BB-HCM311A, HCM331A, HCM371A, HCM531A, HCM515A, HCM511A**

Pan (display range: 173°max)  
Tilt (display range: 105°max)

**BL-C10A, C30A, C131A, C111A**

Pan (display range: 143°max)  
Tilt (display range: 82°max)

## Install Just About Anywhere

### B Easy PoE power supply

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.

#### Applicable models >

**BB-HCM581A, HCE481A, HCM531A, HCM515A, HCM511A, HCM403A**



## Other Convenient Features

### B Analog video output<sup>27</sup>

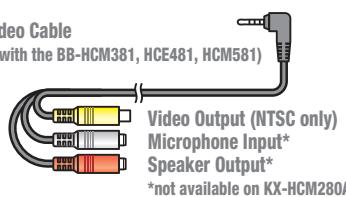
#### Using directly — without the Internet



The analog output terminal lets you combine the network camera with existing equipment. For example, you can check images on a TV screen, and record them with a video recorder.

#### Audio/Video Cable

(Included with the BB-HCM381, HCE481, HCM581)



#### Applicable models >

**BB-HCE481A, HCM381A, HCM581A, HCM531A, HCM515A, HCM511A**  
**KX-HCM280A**

### R Privacy mode

#### Blocking monitoring when not needed

##### Privacy mode ON

When you return home, just press a button to cover the lens and protect your privacy.



##### Privacy mode OFF

The camera administrator can also control this over the network.



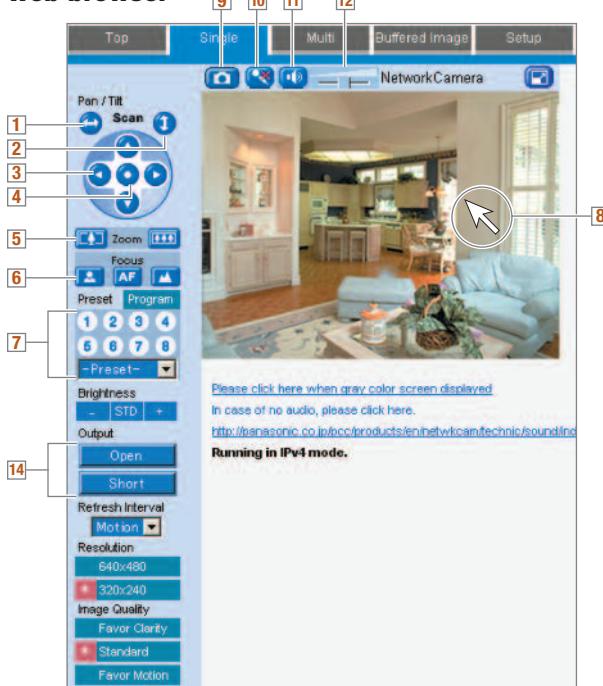
#### Applicable models >

**BL-C10A, C30A, C131A, C111A**

# Control Cameras Over the Internet

**BB-HCM381A, HCE481A, HCM581A, HCM580A  
KX-HCM280A**

## Web browser



**BB-HCM403A**

**BL-C1A, C20A**

**Web control bar**

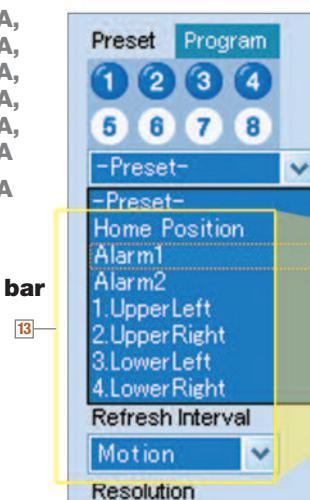


**BB-HCM311A,  
HCM331A,  
HCM371A,  
HCM531A,  
HCM515A,  
HCM511A**

**KX-HCM110A**

**BL-C131A,  
C111A**

## Web control bar



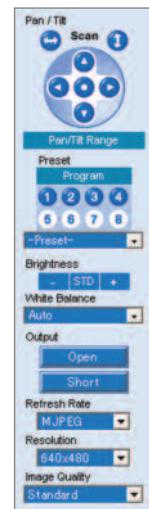
**BL-C10A, C30A**

**Web control bar**



**BB-HCM515A,  
HCM531A  
HCM511A**

**Web control bar**



### 1 Pan scan (Horizontal movement)

The pan scan function sweeps the camera right and left.

### 2 Tilt scan (Vertical movement)

The tilt scan function sweeps the camera up and down.

### 3 Remote pan and tilt

This function lets you change the direction of the camera by remote control, using a Web browser.

### 4 Home position

This function returns the camera shooting position to a pre-registered home position.

### 5 Zoom function

Using the Web browser, you can operate the camera lens to increase or decrease the magnification.

Applicable models > BB-HCM381A, HCE481A, HCM581A, HCM580A; KX-HCM280A

### 6 Focus control

Using the Web browser, you can automatically or manually adjust the camera's focus.

Applicable models > BB-HCM381A, HCE481A, HCM581A, HCM580A; KX-HCM280A

### 7 Preset positions

You can register up to 20\* shooting positions in advance, to aim the camera exactly where you want it.

\*You can register up to eight positions with the KX-HCM280A; BL-C10A, C30A, C111A, C131A.

### 8 Click centering / Zoom

Using a Web browser, you can simply click on the part of the image you want to see, and automatically bring that part to the center of the screen. You can also zoom in and out by right clicking on the image. (Where available)

### 9 Snapshot button

Captures a still image.

### 10 Talk button

By using the microphone of the PC, sound can be transmitted to the speaker connected to the network camera. Clicking on this button pauses voice transmission.

Voice transmission is paused. Clicking on this button resumes voice transmission.

### 11 Listen button

Produces the sound captured by the microphone connected to the network camera. Clicking on this button mutes the sound.

Sound is muted.

### 12 Sound level adjustment bar

Put the cursor on the slider and move it to adjust the sound level. The sound level increases when it is moved to the right, and decreases when it is moved to the left.

### 13 Alarm positions

Used to register up to two directions to which the camera moves when an alarm (separately purchased) is detected.

KX-HCM280A can register one alarm position.

### 14 External output

Used to control the I/O connector output signal.

### 15 Full-Screen mode

Enjoy incredible clarity by enlarging the image to fill the entire screen.

Applicable models > BB-HCM581A, HCM580A, HCM515A, HCM531A, HCM511A; BL-C131A, C111A

Functions 1, 2, 3, 7, and 13 are not included on BL-C1A, C20A and BB-HCM403A.

Function 10 is not included on BL-C1A, C20A, C30A, C111A, C131A.

Functions 11 and 12 are not included on BL-C1A, C10A, C20A and C30A.

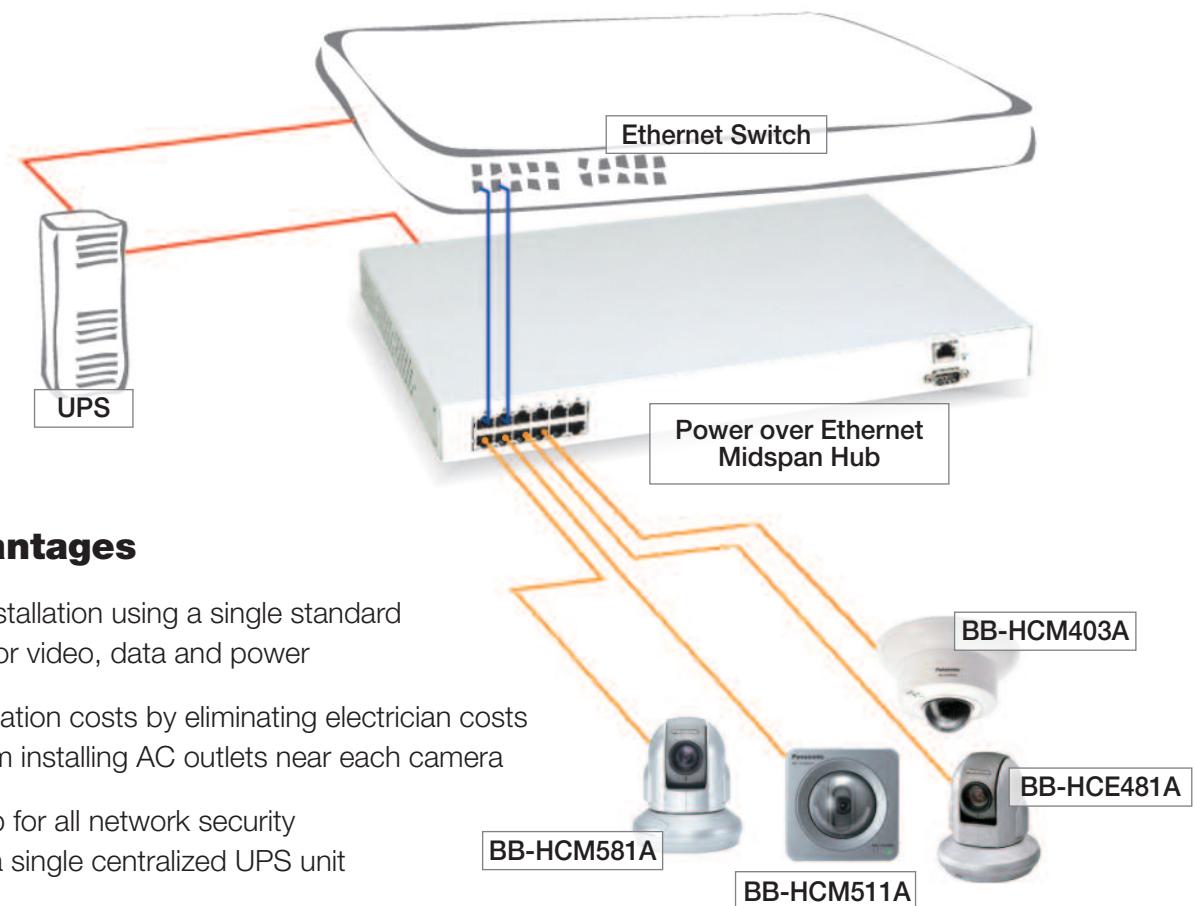


# Power over Ethernet

No Power source nearby? No problem with the Panasonic 500 series IP Network Cameras featuring Power over Ethernet.

**Use a single standard data cable for video, data and power.**

Power over Ethernet (PoE) is the ideal power solution for network camera applications without a power source nearby. It works by combining data and power and delivering over an existing CAT5 ethernet cable. Now select Panasonic network cameras are PoE ready, making them even easier to install. Imagine the freedom of being able to install the cameras anywhere you can run ethernet cable. No need to expend time and money on an electrician. Easily move the cameras as your needs change.



## PoE Advantages

- Simplifies installation using a single standard data cable for video, data and power
- Saves installation costs by eliminating electrician costs incurred from installing AC outlets near each camera
- UPS backup for all network security devices by a single centralized UPS unit
- Web-based remote management application for on-line supervision, remote monitoring and resetting of network cameras and IP terminals
- Easy plug and play installation
- PoE splitter may be installed where network cameras are not 802.3af standard compliant

# 2007 Network Camera Line-Up

**B** BUSINESS APPLICATIONS

**R** RESIDENTIAL APPLICATIONS

## **B** BB-HCM581A

### PoE Zoom MPEG-4 Network Camera

- > 42x Zoom (21x Optical)
- > High-Speed 350° Pan / 210° Tilt with Presets
- > PoE (802.3af compliant)
- > Progressive Scan > Analog Video Output
- > Simultaneous MPEG-4 and JPEG
- > SD Card Recording with Audio
- > 0.09 Lux Color Night View Mode
- > Up to 30 Frames per Second CCD
- > Full Screen Monitoring
- > Remote Monitoring from Cell phone
- > 4-up, 9-up and 16-up Multi-Camera Pages > Up to 30 Video Users
- > Built in Web Server/IP Address (IPv4/v6)
- > Audio Capability (2 Way) > Sensor Input to Trigger Movement
- > Email Triggered by Motion Detection, Sensor Alert, Timer
- > Password Protection > Plug & Play Installation
- > Free Web Address like <http://bob.viewnetcam.com>
- > Multi-Language Interface > Image Date and Time Stamp > 1 Year Warranty

Optional AC Power Supply: BB-HCA3A



## **B** BB-HCM531A

### Outdoor PoE MPEG-4 Network Camera

- > Outdoor (splash proof, low temperature)
- > Pan/Tilt/Digital Zoom with Presets
- > PoE (802.3af compliant)
- > Progressive Scan
- > Analog Video Output
- > Simultaneous MPEG-4 and JPEG
- > SD Card Recording with Audio
- > 0.09 Lux Color Night View Mode
- > Up to 30 Frames per Second CCD
- > Full Screen Monitoring > Remote Monitoring from Cell phone
- > 4-up, 9-up and 16-up Multi-Camera Pages > Up to 30 Video Users
- > Built in Web Server/IP Address (IPv4/v6) > Audio Capability (2 Way)
- > Built-in Microphone > Dual Sensor Input to Trigger Movement
- > Image transfer by Motion Detection, Sensor Alert, Timer
- > Password Protection > Plug & Play Installation
- > Free Web Address like <http://bob.viewnetcam.com>
- > Multi-Language Interface > Image Date and Time Stamp > 1 Year Warranty

Optional AC Power Supply: BB-HCA3A



## **B** BB-HCM515A

### MegaPixel PoE MPEG-4 Network Camera

The BB-HCM515A can capture images in stunning 1280x1024 resolution for crisp, full screen viewing.

- > Mega-Pixel Image Capture
- > Adaptive Contrast Enhancement
- > Pan/Tilt/Digital Zoom with Presets
- > PoE (802.3af compliant)
- > Progressive Scan > Analog Video Output
- > Simultaneous MPEG-4 and JPEG
- > SD Card Recording with Audio
- > 3 Lux Color Night View Mode > Up to 30 Frames per Second CMOS
- > Full Screen Monitoring > Remote Monitoring from Cell phone
- > 4-up, 9-up and 16-up Multi-Camera Pages > Up to 30 Video Users
- > Built in Web Server/IP Address (IPv4/v6) > Audio Capability (2 Way)
- > Built-in Microphone > Dual Sensor Input to Trigger Movement
- > Image transfer by Motion Detection, Sensor Alert, Timer
- > Password Protection > Plug & Play Installation
- > Free Web Address like <http://bob.viewnetcam.com>
- > Multi-Language Interface > Image Date and Time Stamp > 1 Year Warranty

Optional AC Power Supply: BB-HCA3A



## **B** BB-HCM511A

### PoE MPEG-4 Network Camera

- > Pan/Tilt/Digital Zoom with Presets
- > PoE (802.3af compliant)
- > Progressive Scan
- > Analog Video Output
- > Simultaneous MPEG-4 and JPEG
- > SD Card Recording with Audio
- > 0.2 Lux Color Night View Mode
- > Up to 30 Frames per Second CCD
- > Full Screen Monitoring
- > Remote Monitoring from Cell phone
- > 4-up, 9-up and 16-up Multi-Camera Pages
- > Up to 30 Video Users
- > Built in Web Server/IP Address (IPv4/v6)
- > Audio Capability (2 Way)
- > Built-in Microphone
- > Dual Sensor Input to Trigger Movement
- > Image transfer by Motion Detection, Sensor Alert, Timer
- > Password Protection
- > Plug & Play Installation
- > Free Web Address like <http://bob.viewnetcam.com>
- > Multi-Language Interface
- > Image Date and Time Stamp
- > 1 Year Warranty

Optional AC Power Supply: BB-HCA3A



## **B** BB-HCM580A

### MPEG-4 Network Camera

- > 42x Zoom (21x Optical)
- > High-Speed 350° Pan / 210° Tilt with Presets
- > Progressive Scan
- > Analog Video Output
- > Simultaneous MPEG-4 and JPEG
- > SD Card Recording
- > 0.09 Lux Color Night View Mode
- > Up to 30 Frames per Second CCD
- > Full Screen Monitoring
- > Remote Monitoring from Cell phone
- > 4-up, 9-up and 16-up Multi-Camera Pages
- > Up to 30 Video Users
- > Built in Web Server/IP Address (IPv4/v6)
- > Email Triggered by Motion Detection, Sensor Alert, Timer
- > Password Protection > Plug & Play Installation
- > Free Web Address like <http://bob.viewnetcam.com>
- > Multi-Language Interface > Image Date and Time Stamp > 1 Year Warranty

Optional AC Power Supply: BB-HCA3A



## **B** KX-HCM110A

### Pan/Tilt Network Camera

- > 120° Pan/65° Tilt with Presets
- > 1 Lux Color Night View Mode
- > Up to 30 Frames per Second CMOS
- > Remote Monitoring from Cell phone
- > 4-up and 12-up Multi-Camera Pages
- > Up to 30 Video Users
- > Built in Web Server/IP Address (IPv4/v6)
- > Audio Capability (2 Way)
- > Built-in Microphone
- > Image transfer by Motion Detection, Sensor Alert, Timer
- > Password Protection
- > Plug & Play Installation
- > Free Web Address like <http://bob.viewnetcam.com>
- > Multi-Language Interface
- > Image Date and Time Stamp
- > 1 Year Warranty



## 2007 Network Camera Line-Up

### **R BL-C1A**

#### Network Camera

- > 10x Digital Zoom
- > 4 Lux Night View Mode
- > Up to 15 Frames per Second CMOS
- > Remote Monitoring from Cell phone
- > 4-up and 12-up Multi-Camera Pages
- > Built in Web Server/IP Address
- > Motion Sensor with Email Alert
- > Password Protection
- > Plug & Play Installation
- > Free Web Address like <http://bob.viewnetcam.com>
- > Multi-Language Interface
- > 1 Year Warranty



### **R BL-C111A**

#### MPEG-4 Pan/Tilt Network Camera

- > Pan/Tilt/Digital Zoom with Presets
- > Simultaneous MPEG-4 and JPEG
- > 3 Lux Color Night View Mode
- > Up to 30 Frames per Second CMOS
- > Full Screen monitoring
- > Remote Monitoring from Cell phone
- > 4-up, 9-up and 16-up Multi-Camera Pages
- > Built in Web Server/IP Address (IPv4/v6)
- > Built-in Microphone
- > Thermal Sensor
- > Image transfer by Motion Detection, Sensor Alert, Timer
- > Privacy mode
- > Plug & Play Installation
- > Free Web Address like <http://bob.viewnetcam.com>
- > Multi-Language Interface
- > 1 Year Warranty



### **R BL-C20A**

#### Wireless Network Camera

- > 802.11g/b Wireless
- > 10x Digital Zoom
- > 4 Lux Night View Mode
- > Up to 15 Frames per Second CMOS
- > Remote Monitoring from Cell phone
- > 4-up and 12-up Multi-Camera Pages
- > Built in Web Server/IP Address
- > Motion Sensor with Email Alert
- > Password Protection
- > Plug & Play Installation
- > Free Web Address like <http://bob.viewnetcam.com>
- > Multi-Language Interface
- > 1 Year Warranty



### **R BL-C131A**

#### Wireless Pan/Tilt MPEG-4 Network Camera

- > 802.11g/b Wireless
- > Pan/Tilt/Digital Zoom with Presets
- > Simultaneous MPEG-4 and JPEG
- > 3 Lux Color Night View Mode
- > Up to 30 Frames per Second CMOS
- > Full Screen Monitoring
- > Remote Monitoring from Cell phone
- > 4-up, 9-up and 16-up Multi-Camera Pages
- > Built in Web Server/IP Address (IPv4/v6)
- > Built-in Microphone
- > Thermal Sensor
- > Image transfer by Motion Detection, Sensor Alert, Timer
- > Privacy mode
- > Plug & Play Installation
- > Free Web Address like <http://bob.viewnetcam.com>
- > Multi-Language Interface
- > 1 Year Warranty



### Panasonic IP Network Camera Easy Selection Guide

	Wireless	Outdoor	PoE	SD Slot	Digital Zoom Capability	Optical Zoom Capability	Maximum Resolution	MPEG4	MJPEG	Lux Rating Night View	Max ips/fps	2-Way Audio	Spkr/mic Jack	Motion Sensor	Thermal Sensor	Privacy Button	Num. Of Presets	Simul. Viewers
BB-HCM581A			•	•	2	21	640X480	•	•	0.09	30	•	•	•		23	30	
BB-HCM580A				•	2	21	640X480	•	•	0.09	30	•	•	•		23	30	
BB-HCM531A	•	•	•	•	10		640X480	•	•	0.2	30	•	•	•		23	30	
BB-HCM515A	•	•	•	•	10		1280/1024	•	•	0.2	30	•	•	•		23	30	
BB-HCM511A	•	•	•	•	10		640X480	•	•	0.2	30	•	•	•		23	30	
BB-HCE481A	•	•	•	2	21		640X480	•	•	0.09	30	•	•	•		23	30	
BB-HCS301A				•	10		640X480	•	**	30	•	•	•	•		30		
BB-HCM381A				•	2	21	640X480	•	0.09	30	•	•	•	•		23	30	
BB-HCM371A	•	•		•	10		640X480	•	•	0.2	30	•	•	•		23	30	
BB-HCM331A	•	•		•	10		640X480	•	•	0.2	30	•	•	•		23	30	
BB-HCM403A			•	•	10		640X480	•	•	0.2	30	•	•	•		23	30	
BB-HCM311A			•	•	10		640X480	•	•	0.2	30	•	•	•		23	30	
KX-HCM280A					2	21	640X480	•	•	0.09	30	•	•	•		10	30	
KX-HCM110A						10	640X480	•	•	1	30	•	•	•		23	30	
BL-C131A	•				10		640X480	•	•	1	30	•	•	•	•	10	30	
BL-C111A					10		640X480	•	•	1	30	•	•	•	•	10	30	
BL-C20A	•				10		640X480	•	•	4	15			•		20		
BL-C1A					10		640X480	•	•	4	15			•		20		

\*\* Depends on camera used.

# 2007 Network Camera Line-Up

## B BB-HCE481A

### PoE (Power over Ethernet Compliant) Network Camera

- > 42x Zoom (21x Optical)
- > Full 350° Pan, 210° Tilt with Presets
- > PoE (802.3af compliant)
- > Analog Video Output
- > SD Memory Card Recording
- > 0.09 Lux Color Night View Mode
- > Up to 30 Frames per Second CCD
- > Remote Monitoring from Cell phone
- > 4-up and 12-up Multi-Camera Pages
- > Up to 30 Video Users
- > Built in Web Server/IP Address (IPv4/v6)
- > Audio Capability (2 Way)
- > Sensor Input to Trigger Movement
- > Image transfer by Motion Detection, Sensor Alert, Timer
- > Password Protection
- > Plug & Play Installation
- > Free Web Address like <http://bob.viewnetcam.com>
- > Multi-Language Interface
- > Image Date and Time Stamp
- > 1 Year Warranty



## B BB-HCM381A

### Zoom Network Camera with 2-way Audio

- > 42x Zoom (21x Optical)
- > Full 350° Pan, 210° Tilt with Presets
- > Analog Video Output
- > SD Memory Card Recording
- > 0.09 Lux Color Night View Mode
- > Up to 30 Frames per Second CCD
- > Remote Monitoring from Cell phone
- > 4-up and 12-up Multi-Camera Pages
- > Up to 30 Video Users
- > Built in Web Server/IP Address (IPv4/v6)
- > Audio Capability (2 Way)
- > Sensor Input to Trigger Movement
- > Image transfer by Motion Detection, Sensor Alert, Timer
- > Password Protection
- > Plug & Play Installation
- > Free Web Address like <http://bob.viewnetcam.com>
- > Multi-Language Interface
- > Image Date and Time Stamp
- > 1 Year Warranty



## B BB-HCM403A

### PoE Dome Network Camera

- > Ceiling Mount with Tilt Motion
- > PoE (802.3af compliant)
- > SD Memory Card Recording
- > 0.2 Lux Color Night View Mode
- > Up to 30 Frames per Second CCD
- > Remote Monitoring from Cell phone
- > 4-up and 12-up Multi-Camera Pages
- > Up to 30 Video Users
- > Built in Web Server/IP Address (IPv4/v6)
- > Audio Capability (2 Way) > Built-in Microphone
- > Sensor Input to Trigger Movement
- > Image transfer by Motion Detection, Sensor Alert, Timer
- > Password Protection > Plug & Play Installation
- > Free Web Address like <http://bob.viewnetcam.com>
- > Multi-Language Interface > Image Date and Time Stamp
- > 1 Year Warranty



## B BB-HCM371A

### Wireless, Outdoor, Pan/Tilt Network Camera with 2-Way Audio

- > 802.11g/b Wireless
- > Outdoor (splash proof, low temperature)
- > Pan/Tilt/Digital Zoom with Presets
- > SD Memory Card Recording
- > 0.2 Lux Color Night View Mode
- > Up to 30 Frames per Second CCD
- > Remote Monitoring from Cell phone
- > 4-up and 12-up Multi-Camera Pages
- > Up to 30 Video Users
- > Built in Web Server/IP Address (IPv4/v6)
- > Audio Capability (2 Way)
- > Built-in Microphone
- > Dual Sensor Input to Trigger Movement
- > Image transfer by Motion Detection, Sensor Alert, Timer
- > Password Protection
- > Plug & Play Installation
- > Free Web Address like <http://bob.viewnetcam.com>
- > Multi-Language Interface
- > Image Date and Time Stamp
- > 1 Year Warranty



## B BB-HCM311A

### Pan/Tilt Network Camera with 2-way Audio

- > SD Memory Card Recording
- > 0.2 Lux Color Night View Mode
- > Pan/Tilt/Digital Zoom with Presets
- > Up to 30 Frames per Second CCD
- > Remote Monitoring from Cell phone
- > 4-up and 12-up Multi-Camera Pages
- > Up to 30 Video Users
- > Built in Web Server/IP Address (IPv4/v6)
- > Audio Capability (2 Way)
- > Built-in Microphone
- > Dual Sensor Input to Trigger Movement
- > Image transfer by Motion Detection, Sensor Alert, Timer
- > Password Protection
- > Plug & Play Installation
- > Free Web Address like <http://bob.viewnetcam.com>
- > Multi-Language Interface
- > Image Date and Time Stamp
- > 1 Year Warranty



## B BB-HCM331A

### Outdoor Pan/Tilt Network Camera with 2-way Audio

- > Outdoor (splash proof, low temperature)
- > SD Memory Card Recording
- > Pan/Tilt/Digital Zoom with Presets
- > 0.2 Lux Color Night View Mode
- > Up to 30 Frames per Second CCD
- > Remote Monitoring from Cell phone
- > 4-up and 12-up Multi-Camera Pages
- > Up to 30 Video Users
- > Built in Web Server/IP Address (IPv4/v6)
- > Audio Capability (2 Way) > Built-in Microphone
- > Dual Sensor Input to Trigger Movement
- > Image transfer by Motion Detection, Sensor Alert, Timer
- > Password Protection > Plug & Play Installation
- > Free Web Address like <http://bob.viewnetcam.com>
- > Multi-Language Interface > Image Date and Time Stamp
- > 1 Year Warranty



Optional AC Power Supply Available: BB-HCA3A

## B BB-HCS301A

### Network Camera Server

The BB-HCS301A can convert nearly any video source to an internet video stream for viewing on a PC or cell phone with the same user interface as a regular Panasonic network camera. With motion detection, it can even send an email when the image changes.

- > Analog Video Conversion
- > SD Memory Card Recording
- > Up to 30 Frames per Second
- > Remote Monitoring from Cell phone
- > 4-up and 12-up Multi-Camera Pages
- > Up to 30 Video Users (Stack up to 5 units for 150 Users)
- > Built in Web Server/IP Address (IPv4/v6)
- > Audio Capability (2 Way)
- > Sensor Input
- > Image transfer by Motion Detection, Sensor Alert, Timer

See p. 29 for more information.



- > Password Protection
- > Plug & Play Installation
- > Free Web Address like <http://bob.viewnetcam.com>
- > Multi-Language Interface
- > Image Date and Time Stamp
- > 1 Year Warranty

## Why should I choose a network camera over a USB or analog CCTV camera?

**The simple answer is you can immediately take advantage of many new available features right out of the box.**

### Network Camera vs. USB or Analog CCTV Cameras Comparison Chart

FEATURE	NETWORK CAMERA	ANALOG CAMERA	USB CAMERA
View Remotely	✓ (via Internet)	+ (Need peripheral device)	✓ (need PC power On)
Control Remotely	✓ Pan, Tilt, Zoom	+ (Need peripheral device)	✗
Monitor from	✓ Cell Phone, PDA, TV or PC	+ TV	+ PC
Recording with	✓ Built-in memory, SD card, FTP server Recording software and VCR or DVD*	+ (Expensive DVR)	✗
E-mail Alerts	✓ Motion Detection, Sensor Alert, Timer Alert**	+ (Need peripheral device)	✗
Motion Detection	✓	✓	✗
Wireless Capabilities	✓	✗	+
0 lux Capability	+	✓	✗
2-way Voice	✓	+ (Need peripheral device)	✓

KEY:

✓ Possible or very useful

+ Needs additional hardware

✗ Not possible or not useful

\* Monitoring from the TV is compatible with either the BB-HCM381A, BB-HCE481A, KX-HCM280A and requires the BL-WV10 TV Adaptor.

\*\* Recording by VCR or DVD is compatible with either the BB-HCM381A, BB-HCE481A, KX-HCM280A and requires the BL-WV10 TV Adaptor.

## Easy monitoring with a TV

### BL-MS103A

Wireless Camera Monitoring System Package



\* The BL-MS103A is a set consisting of one BL-WV10A unit and Three BL-C30 units.



#### Sample Application > Medium-scale business monitoring

Locations can be easily monitored over a TV in the office. Remote monitoring is also possible from any place you go over the Internet, using a PC or cell phone. A variety of advanced functions also make monitoring easier by allowing extended-time recording, recording only when there is movement detected, etc.

\* The transmission range when using a wireless LAN varies depending on the surroundings. The BL-WV10A can also be hard wired.

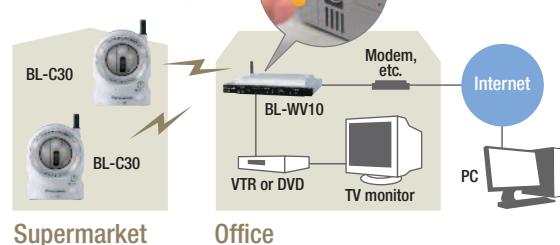
You can now check the images of the network camera on a TV screen. This will be especially attractive to users who want to monitor something, but don't want to invest in a large surveillance system.

### BL-WV10A

Wireless Camera Monitoring System



#### System example

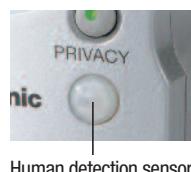


### Automatic alert settings

#### Alerting yourself when motion occurs

The human detection sensor<sup>28</sup> (detects heat), when there has been a change in the monitoring site.

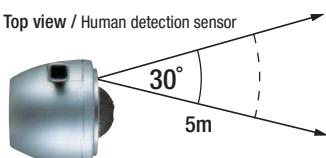
You can have the TV screen switch to show the camera image, alert yourself with a buzzer, These functions enable much greater flexibility in monitoring.



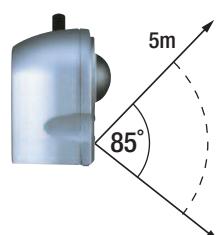
Human detection sensor

#### Detection range

Top view / Human detection sensor



Side view / Human detection sensor



### Remote control Easy pan and tilt operation

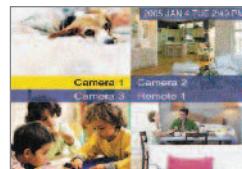
Use the included remote controller to operate the pan and tilt camera functions while watching the TV screen, or to make settings. Operation is easy to understand, and you don't need a lot of extra equipment, so it is economical.



In addition to the functions listed above, the BL-MS103A can also use the BL-C30A functions.

### Multi-camera capability Check several areas at once, complete with time recording

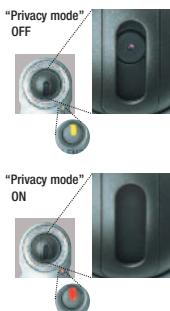
You can check multiple cameras at the same time.



### Privacy mode

#### Protect privacy by blocking the lens when desired.

If you use the camera only for monitoring the house while you're away but want to disable it while you're home, you can close the lens cover by simply pressing a button on the camera unit. A system administrator can also open and close the lens cover from a PC over the network.



#### Applicable models > BL-C30A, C10A, C111A, C131A

### SD Memory Card recording<sup>29</sup>

#### Convenient for saving and carrying about

You can save a large quantity of camera images onto an SD Memory Card in the TV adaptor. By connecting to a DVD recorder or VTR, you can record even longer.

#### SD Memory Card recording capacity

SD capacity	Movie recording time	Picture storage
	Timer/sensor recording LONG*	HIGH
8MB	1 hr.	160
16MB	2 hr. 30 min.	300
32MB	5 hr. 10 min.	630
64MB	10 hr. 40 min.	1290
128MB	21 hr. 40 min.	2600
256MB	43 hr. 20 min.	5190
512MB	87 hr. 10 min.	10460
1GB	167 hr. 50 min.	20120

\* Resolution: 320 x 240; Image quality: favor motion; Image refresh interval: 5 sec.

## Convert an analog camera into a network camera for remote monitoring and recording

### BB-HCS301A

#### Network Camera Server

This server lets you monitor images taken with an existing analog camera from a remote location, by sending the images over the Internet. This added capability to check things at any time, from any place, will increase work efficiency and reduce labor costs. It is also economical because you don't have to buy a new camera or have it installed.



**Viewnetcam.com**

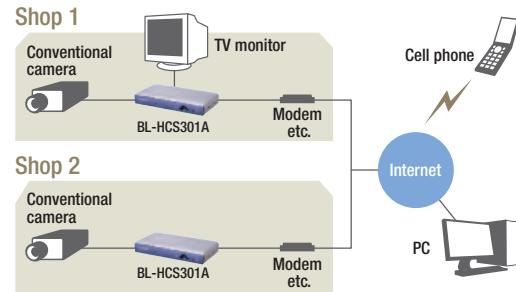


#### Sample Application > Store Management

By using an existing camera, you can greatly reduce initial expenses. You can also monitor the shop on your cell phone while you're out and use the zoom function to check things in detail. So you can cut down on trips to the shop and concentrate on other tasks.

#### Other Applications > All existing cameras

#### System example



### 2-Way Audio Communication<sup>25</sup>

Add a mic or speaker (sold separately), and as you watch on a monitor you can tell an employee how to change a store layout or discuss a problem on the production line. This kind of real-time conversation is ideal for clear, smooth communication and top work efficiency even when you're away.

### SD Memory Card Recording

The camera server has an SD card slot which allows you to record images directly from the camera to an SD Memory Card (sold separately) in the server without going through the network. Or to monitor comings and goings, you can use the camera's motion detection function to record an image every time something moves.

#### Number and recording time of images on the SD Memory Card<sup>†</sup>

Size	Images	Time (hours)
256MB	approx. 14,000 images	3.8
512MB	approx. 29,000 images	8
1GB	approx. 58,000 images	16
2GB	approx. 115,000 images	32

SD Memory Card Slot operation guaranteed for 2GB, 1GB, 512MB, 256MB, 128MB and 64MB SD Memory Cards.

<sup>†</sup>A 1GB SD card utilizes a portion of the memory for copy protection and other purposes. Usable capacity is 944MB. (MB means 1,048,576 bytes, GB means 1,073,741,824 bytes.)

### Motion Detection Function and Image Transfer Mode

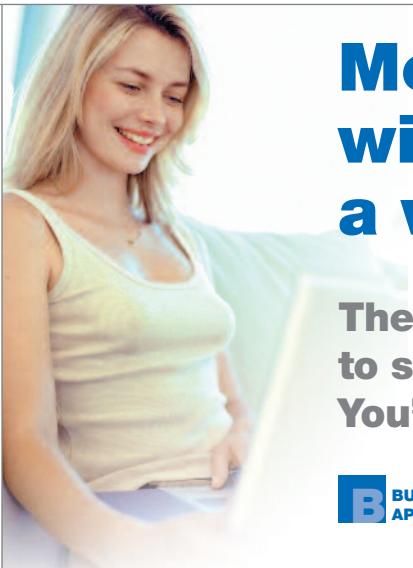
You can check a site only when something moves, such as when a person enters or leaves the area under surveillance. When the camera detects movement, it shoots a still image, holds the image temporarily in internal memory, and sends you a copy by email<sup>30</sup> or FTP transfer. You can set the camera to snap a shot whenever a door opens or closes, for example, or at pre-set times. This system is more convenient than tape systems because you don't have to fast-forward or rewind to find a particular image.

### Multi-Camera Capacity

Keep watch over several stores or factories at the same time. You can check images from three sets of four cameras each, and converse with people at one of the sites. The system can display static images from up to 12 cameras on a screen. Now you can keep your eye on a number of sites without having to travel to each and replaying the surveillance tape.

### 10x Digital Zoom

With 10x digital zoom<sup>31</sup>, you can enlarge images for easier confirmation or to get a closer look at suspicious activity, no matter how far away you are.



# Meeting your storage needs with versatile functions and a wide line-up

**There is a wide range of Panasonic network cameras to suit your particular usage conditions and needs. You're sure to find exactly the one you want.**



## Store

### B SD Memory Card<sup>32</sup> recording Timer recording

A large quantity of images can be saved without even using a network. Cards can also be carried about easily, so data can be shared with other equipment. For example, a 2GB card can hold about 80 days<sup>33</sup> worth of images when shooting at 1-minute intervals. Image clips can be downloaded remotely from a web browser, or copied off the SD card.



Cover removed in photo to show function.



#### Recording when motion is detected

Combined with the motion detection function, you can record images only when something moves. This is recommended for busy people who don't have the time to monitor everything.

#### Applicable models >

**BB-HCM581A, HCM580A, HCE481A, HCM381A,  
HCM531A, HCM515A, HCM511A, HCM403A,  
HCM371A, HCM331A, HCM311A, HCS301A**



#### Number of recording files per SD Memory card (Image quality > Standard)

SD Memory Card	Resolution		
	640 x 480	320 x 240	160 x 120
2GB	Approx. 55,000 images	Approx. 115,000 images	Approx. 370,000 images
1GB	Approx. 28,000 images	Approx. 58,000 images	Approx. 180,000 images
512MB	Approx. 14,000 images	Approx. 29,000 images	Approx. 94,000 images
256MB	Approx. 7,000 images	Approx. 14,000 images	Approx. 47,000 images
128MB	Approx. 3,000 images	Approx. 7,000 images	Approx. 23,000 images
64MB	Approx. 1,000 images	Approx. 3,000 images	Approx. 11,000 images

<sup>†</sup> A 1GB SD card utilizes a portion of the memory for copy protection and other purposes. Usable capacity is 944MB (MB = 1,048,576 bytes. GB = 1,073,741,824 bytes).

## Buffered Image Memory

### B R Buffered images<sup>34</sup>

#### Saving desired images

Images can be saved in the camera's internal memory. This can be combined with the human detection sensor, timer and other functions to save only desired scenes and check them in the order of occurrence.

#### Applicable models > All Home-use and Business models

SD Memory Card Image Capacity <sup>†</sup>					
SD	640 x 480	320 x 240	160 x 240	160 x 240	Events*
Memory Card	Hours	Events*	Hours	Events*	Hours
2GB	15	11,000	32	23,000	4 Days
1GB	8	5,760	16	11,600	2 Days
512GB	4	2,800	8	5,800	1 Day
256GB	2	1,400	4	2,800	13
128GB	1	600	2	1,400	6
64MB	0.3	200	1	600	3
					2,200

<sup>†</sup> A 1GB SD card utilizes a portion of the memory for copy protection and other purposes. Usable capacity is 944MB. (MB means 1,048,576 bytes, GB means 1,073,741,824 bytes).

\* Based on 5 seconds per Event with a frame rate of 1 frame per second.

#### Maximum number of storable images\*

Model no.	320 x 240, Standard
BB-HCM581A, HCM531A, HCM511A, HCM515A	Approx. 350
BB-HCM311A, HCM331A, HCM381A, HCE481A, HCS301A, HCM371A, HCM403A KX-HCM110A, HCM280A	Approx. 125
BL-C10A, C131A, C111A, C20A	Approx. 250

\* The maximum number of storable images varies, depending on the subject.

#### RECORDING CAPACITY:

#### How to calculate your Storage Requirements

**Step 1:** Determine your desired Image Size/Quality and go to Chart A to determine File Size for each image.

**Step 2:** Determine whether you want to record continuously (Chart B) or based on Motion Detection (Chart C).

**Step 3:** For continuous recording, calculate the number of frames per day using Chart B or for recording based on motion, calculate the number of events per day using Chart C.

**Step 4:** Multiply the information gathered in Steps 1, 2 and 3 along with the total number of desired days of recording.

See Example Worksheet on Calculating Storage Needs >>>>>

### Image Size/Quality > File Size

	<b>Image Size</b>	<b>Motion</b>	<b>Standard</b>	<b>Clarity</b>
<b>Chart A</b>	640x480	20KB	33KB	50KB
	320x240	8KB	16KB	25KB

### For Recording Continuously

<b>Chart B</b>	<b>Images per</b>						<b>Formula</b>
	<b>hour</b>	<b>8 hour day</b>	<b>12 hour day</b>	<b>24 hour day</b>	<b>Other</b>		
1 image per hour	1	8	12	24			(1 x number of hours recording)
1 image per 30 minutes	2	16	24	48			(2 x number of hours recording)
1 image per 15 minutes	4	32	48	96			(4 x number of hours recording)
1 image per 10 minutes	6	48	72	144			(6 x number of hours recording)
1 image per 5 minutes	12	96	144	288			(12 x number of hours recording)
1 image per minute	60	480	720	1440			(60 x number of hours recording)
1 image per 30 seconds	120	960	1440	2880			(120 x number of hours recording)
1 image per 15 seconds	240	1920	2880	5760			(240 x number of hours recording)
1 image per 10 seconds	360	2880	4320	8640			(360 x number of hours recording)
1 image per 5 seconds	720	5760	8640	17280			(720 x number of hours recording)
1 image per 2 seconds	1800	14400	21600	43200			(1800 x number of hours recording)
1 image per second	3600	28800	43200	86400			(3600 x number of hours recording)
2 images per second	7200	57600	86400	172800			(7200 x number of hours recording)
3 images per second	10800	86400	129600	259200			(10800 x number of hours recording)
4 images per second	14400	115200	172800	345600			(14400 x number of hours recording)
5 images per second	18000	144000	216000	432000			(18000 x number of hours recording)
10 images per second	36000	288000	432000	864000			(36000 x number of hours recording)

### For Recording based on Motion

<b>Chart C</b>	<b>Per Day</b>			
	<b>1 event</b>	<b>5 events</b>	<b>100 events</b>	<b>1000 events</b>
1 frame per event	1	5	100	1000
2 frames per event	2	10	200	2000
5 frames per event	5	25	500	5000
10 frames per event	10	50	1000	10000
20 frames per event	20	100	2000	20000
50 frames per event	50	250	5000	50000
100 frames per event	100	500	10000	100000

### Example Worksheet using 4-Camera system with the following preferences

	<b>Image Size/Quality</b>	<b>Continuous</b>	<b>Images per Time</b>	<b>Motion</b>	<b>Events per Day</b>	<b>Days</b>
Camera #1	320x240	Standard	3 images/sec	12 hour day	-	30
Camera #2	640x480	Clarity	-	-	5 frames/event	60
Camera #3	320x240	Standard	-	-	20 frames/event	7
Camera #4	640x480	Clarity	1 image/sec	8 hour day	-	14

	<b>File Size (kb)</b>	<b>Total Images</b>	<b>Total Storage</b>
	<b>Chart A</b>	<b>Chart B or C</b>	<b>Chart A x B or C x Days</b>
Camera #1	16KB	129,600	62,208,000
Camera #2	50KB	500	1,500,000
Camera #3	16KB	20,000	2,240,000
Camera #4	50KB	28,800	20,160,000
Total Storage (Kilobytes)			86,108,000
Estimated Storage in Gigabytes (kb/1153434)*			74.7

\* 1 KB = 1024 bytes, 1 MB = 1024 KB, 1 GB = 1024 MB (1 GB = 1024 x 1024 x 1024)

We have added 10% to the number to create a safety buffer.

### Use the worksheet below to calculate your own storage requirements

	<b>Image Size/Quality</b>	<b>Continuous</b>	<b>Images per Time</b>	<b>Motion</b>	<b>Events per Day</b>	<b>Days</b>
Camera #1						
Camera #2						
Camera #3						
Camera #4						

	<b>File Size (kb)</b>	<b>Total Images</b>	<b>Total Storage</b>
	<b>Chart A</b>	<b>Chart B or C</b>	<b>Chart A x B or C x Days</b>
Camera #1			
Camera #2			
Camera #3			
Camera #4			
Total Storage (Kilobytes)			
Estimated Storage in Gigabytes (KB/1153434)*			

# Panasonic Recording Solutions

## BB-HNP15A

Network Camera Recorder  
with Viewer Software

### Record in MPEG-4 format too.

Images can be recorded simultaneously from up to 64 cameras. Operating comfort can also be optimized by customizing the settings and browser screens. This is ideal for boosting security or for use in market surveys.



### MPEG-4 and JPEG recording

Select extended recording or enhanced-quality recording.

Select MPEG-4\* recording when you want smooth motion images even with limited network speeds or a smaller volume of image data, and select JPEG when you want to take beautiful images at set intervals.

\*When using a camera that supports the MPEG-4 format.

### Enhanced recording functions

#### Increased monitoring accuracy.

The detection range on the PC can be limited by dividing the screen into a grid of 100 squares and masking all unnecessary squares. This suppresses the detection of motion in those squares



Clicking a square removes it from the motion detection range.

to detect and record the desired motion with greater accuracy. Other convenient recording functions include alarm recording, manual recording, motion detection recording, and timer recording.\*

\* Up to 10 timer recordings can be set per camera. Motion detection recording and Alarm recording only for JPEG.

### Enhanced viewer functions

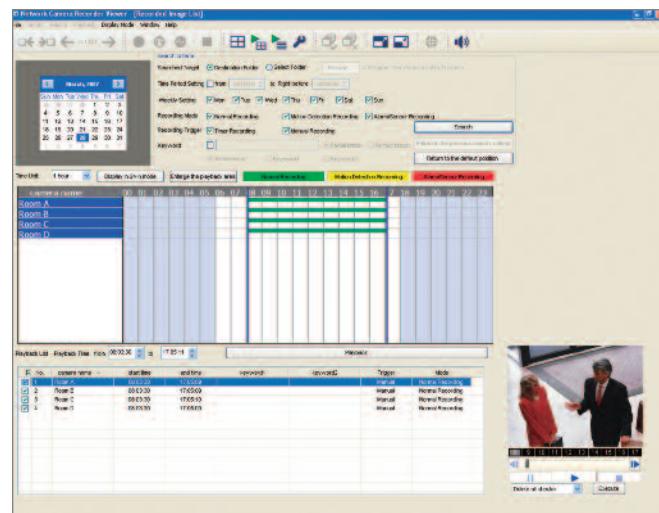
#### Work in the layout that you prefer.

You can choose either of two layout modes: the full-screen mode, which fills the screen with the image, or the window mode, which also displays a title, menu, and tool bar. The multi-camera display lets you monitor up to 16 cameras or view the playback of up to 4 cameras. The order of the display images and the size of the display frames can be easily changed by drag and drop operation.

##### Full screen mode



##### Window mode



### Graphic display of recorded images in list form Higher work efficiency.

Recorded images are easily displayed. Screens with graphic expressions, such as a calendar or date and time, make it easy to check images according to the camera name, recording time zone, or recording method. This also makes it easy and convenient to retrieve and play recorded images, and to convert or edit files.

### Conversion Table

Source Data	File Type
Motion image <sup>1</sup>	MPEG-1
	ASF
	AVI
Still image	JPEG
Audio <sup>2</sup>	WAV <sup>2</sup>

### Recording format exchange Excellent versatility.

Desired parts of recorded motion images, still images, and audio can be converted to common formats for handy data exchanging.

1 For playback using Windows Media Player.

2 For only the audio portion.

### Other features

#### • Search functions

Searching through all of the cameras requires only 5 seconds.

#### • Recording time display

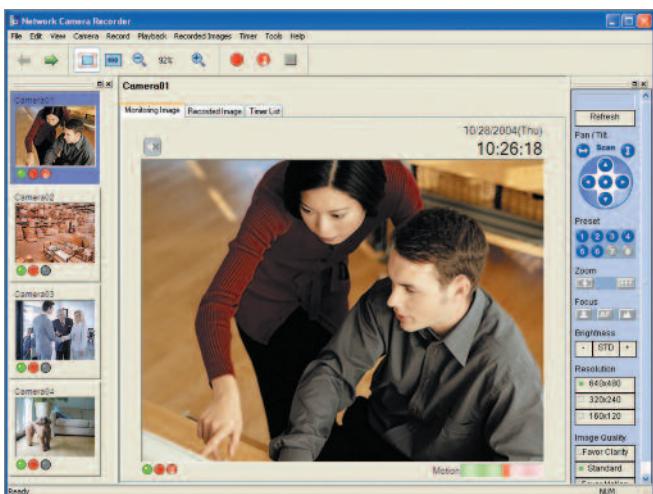
The available recording time is estimated from the recorded data volume and the remaining capacity, and displayed to ensure you don't run out of recording time.

#### • Log analysis

Log analysis makes it possible to display the time and cause of errors, so they can be prevented in the future.

#### • Sequential display function

The camera automatically switches to enable smooth image displays.



## Panasonic Recording Solutions

### BB-HNP11A

#### Network Camera Recorder<sup>35</sup>

Because sounds can be recorded together with images, the ambience of a store can be captured more accurately to help you plan effective marketing strategies. Images from up to 10 cameras can be recorded. Images can also be searched quickly using a keyword or recording date/time.

### Motion detection recording and timer-recording functions

The program is equipped with a motion detection recording function that activates recording only when people or other moving objects are detected, and a timer-recording function that starts and stops recording at specified times.

### Recorded image searches

Recorded images can be searched using conditions such as a preset keyword or recording type (timer recording, motion detection recording).

When installing the MPEG-4 viewer program on additional PCs, please purchase additional licenses. Model No. BB-HCA5A.

### Recording capacity limit

The maximum amount of data to be recorded on the hard disk of the PC can be set for each camera. When the set maximum amount is reached, previously recorded data is overwritten by new data, thus allowing the hard disk space to be used more effectively.

### Automatic backup

Recorded images can be saved in another memory location at a preset time.



# Simplified multiple network camera installation

## BB-HGW700A Camera Management System

This powerful camera management system allows you to automatically configure up to 16 Panasonic network cameras, enables Internet access, creates a custom portal page and enables multi-level security control. Buying additional broadband accounts and installing new wiring to get all of your network devices online is costly and cumbersome. With a Panasonic network, you can simplify the process by connecting multiple devices to the Internet through a single cable or DSL line. The camera management system's built-in firewall helps protect every network computer from hackers. Use the system with a Virtual Private Network (VPN) server to access a corporate or secure network. You can also customize the firewall to best suit the needs of your home or small business.



### Automatic Setup

By using this product with a Panasonic network camera (Customer-provided), the camera's registration function can automatically set up wireless security (encryption, WEP setup, etc.) and camera network related settings. (port forwarding setup, etc.)

### Camera Portal

By using this product with a Panasonic network camera (Customer-provided), the camera portal can list up to 16 camera names and their still images on a monitoring screen. Also, the camera portal page is set up automatically for connected cameras.

### Cell Phone Camera Portal

Create a portal page to access your cameras easily from a cell phone. Cameras on location can be added automatically, and remote cameras can also be added.

### Camera Status Notification

This product can send an E-mail to your PC or mobile phone if a camera disconnection is detected.

### IPv6 Compatible

This product is compatible with IPv6, the next generation Internet protocol. There are a number of merits to this, such as abundant global addresses and security improved using IPsec.

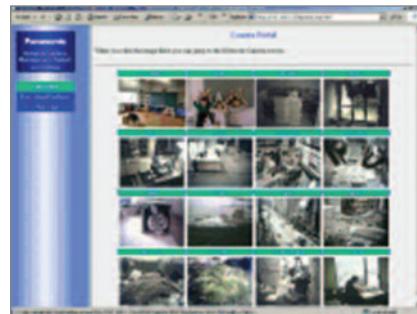
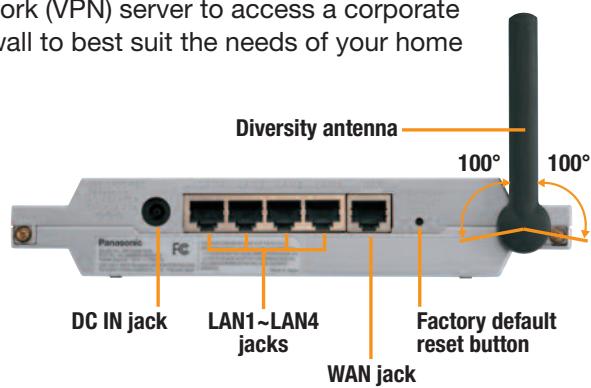
### Camera Privacy Protection with VPN

This product is compatible with PPTP (IPv4) and IPsec (IPv6) for VPN. Security is enhanced by encrypting all cameras and PC data connected to this product before it is sent.

#### Note:

> LAN (Local Area Network) A computer network limited to the immediate area, usually the same building or floor of a building. LAN IP addresses, a.k.a "local IP address" typically begin with 192.168.xxxx.xxxx.

> WAN (Wide Area Network) A computer network that spans a relatively large geographical area and usually includes Internet access. In this manual "WAN" refers to your Local Area Network connected to this device as well as Internet access provided by your local Internet Service Provider (ISP).



Camera Portal Page



Cell phone view

### High speed wireless LAN for IEEE 802.11b/g

The wireless connection has 2 modes:  
1 > the 802.11g only mode, and  
2 > the 802.11g and 802.11b simultaneous mode.  
Also, the wireless LAN function can be disabled.

### High speed throughput

Maximum WAN - LAN wired connection speeds of 98 Mbps (IPv4/SmartBits), 77 Mbps (IPv6/SmartBits), and 16 Mbps (FTP[PPTP]).

## Keep the camera out of view

### BB-HCA1A-B (smoke) Network Camera Cover

This cover completely covers the network camera, making the lens movement, direction, and other monitoring aspects difficult to see. Use it for situations like building entranceways or retail shops, where you need to monitor activity but also need to be sensitive to the effect that a camera may have on people.

#### Applicable models >

**BB-HCM381A, HCE481A, HCM581A, HCM580A**

**KX-HCM280A**

#### Indoor use only

#### Minimum illumination color change

- > Normal mode: 3 lux . 9 lux
- > Color night view mode: 0.09 lux > 0.27 lux

#### Specifications

**Dimension (HxWxD):** Approx. 6 1/16 x 6 5/8 x 6 5/8 inches (154 x 169 x 169mm)

**Weight:** Approx. 0.4 lb (180 g)



### BL-CA51A

Network Camera  
Wall Mount Cover



Gang Box (shown)  
sold separately.

#### Applicable models >

**BL-C111A, C30A, C131A**

#### Indoor use only

### Outdoor Enclosures from VideoLarm

#### for Panasonic Network Cameras

**BB-HCM381A, HCM581A,  
HCM580A, HCE481A; KX-HCM280A**

- Easy Camera Installation
- Optically Clear, 0.1" thick acrylic dome (BB-HCH280W/BB-HCH280P). Dome of BB-HCH280CT is tinted.
- Constructed of durable engineered plastic top, 94VO, with UV protected and acrylic lower dome.
- Cast aluminum wall mount is standard on the BB-HCH280P,BBHCH280W models.
- Cast aluminum pendant mount is standard on the BB-HCH280CT model.



**BB-HCH280CT** tinted dome  
perpendicular mount



**BB-HCH280P** with power  
**BB-HCH280W** basic unit



**BB-HCH280RP** ruggedized with power  
**BB-HCH280R** ruggedized

## 3rd Party Solutions VideoLarm

- 24-hour fan operation for effective heating and condensation protection (BB-HCH280P/BB-HCH280RP).
- Thermostatically controlled 24V AC heater (BB-HCH280P/BB-HCH280RP).
- Separate power input for H&B and camera power (BB-HCH280P/BB-HCH280RP).
- Operating temperature -300°F (BB-HCH280RP) or -200°F (HCH280P) to +104°F.



# Panasonic introduces the HD-PLC Ethernet Adaptor

**Now you can use your standard home electrical wiring as a powerful network connection.**

## Plug and Push™

**Get online access simply by plugging into a power outlet!**

This revolutionary product from Panasonic makes it possible for anyone to establish a powerful, robust, high bandwidth network from nearly anywhere in their home in a matter of seconds. Forget about complicated wiring and the other hassles of setting up a network. With this new adaptor, you can connect a network and to the Internet in a matter of seconds. With 190Mbps<sup>36</sup> data speed, you can enjoy exceptional quality high-definition video content, music playback, Internet gaming, VoIP phone service, color video monitoring and the typical connection of computers, printers and other devices to a unified network.

To connect your devices, simply plug the adaptor into an electric power outlet, plug your PC or other peripheral, such as a Panasonic IP network camera, into the adaptor's Ethernet port and you're ready to go. Now, anyone can enjoy an entirely new level of networking freedom! Also, high security is as easy as pushing the setup button on each unit, as the adaptor automatically sets AES 128-bit encryption, the same level of protection afforded by many Internet banking and shopping sites.

### > It's Easy! Connect through any AC Outlet in your Home

The HD-PLC Adaptor makes it possible for your home electrical wiring to serve as a link between your network devices. Getting network access is as easy as plugging into a power outlet. You can move your PC or other Ethernet device and connect to the Internet anywhere there is a power outlet.

### > No New Wiring Required! Easy Setup—No New Wiring Necessary

There's no tricky installation or complicated settings. Just take the HD-PLC Adaptor out of the box and plug into the power outlet (BL-PA100KTA). You don't need to be a technical wiz or know a lot about PCs or networking. Adding another HD-PLC Adaptor is easy too, using the following quick 3-step procedure.

#### Step.1 Plug it in

Plug the Master and Terminal units into the same power outlet.



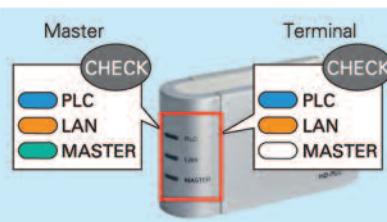
#### Step.2 Push two buttons

Push the Setup button on each unit.



#### Step.3 Watch it light up

A blue LED lights solid to show that setup is complete. You can move the units anywhere you want to go online.



## > It's Fast and Secure! Outstanding Security and Fast Communication

The HD-PLC Adaptor transfers data at up to 190 Mbps, compared with up to 54 Mbps for a typical 802.11a/g wireless network. Unlike with wireless LANs, cordless eavesdropping is not a factor. The HD-PLC Adaptor automatically sets AES 128-bit encryption, which enhances security, preventing information from leaking outside the power outlet. This is the starting point of an age of total home networking.



**BL-PA100A**

- > Connect through any AC outlet in your home
- > Easy setup—no new wiring necessary
- > Outstanding security and fast communication up to 190Mbps
- > Advanced error correction
- > AES 128-bit encryption



**BL-PA100KTA**

- > Set of 2 BL-PA100s

		<b>Wi-Fi</b> Wi-Fi is a trademark of the Wi-Fi Alliance.	<b>HD-PLC</b> High-Speed Power Line Network
<b>SPEED</b>	<b>11 Mbps</b>		<b>190 Mbps IT'S FAST!</b> «UP TO 17X MORE CAPACITY THAN WI-FI»
<b>RANGE</b>	Varies		<b>Typical Home* IT'S SIMPLE!</b> * Up to 492 feet on electrical wire
<b>SECURITY</b>	Complicated		<b>ONE TOUCH IT'S SECURE!</b> Automatic Bank-Level Security (128-Bit AES Encryption)
<b>CORDLESS INTERFERENCE</b>	Can Interfere <small>2.4GHz Cordless phones and microwave ovens both broadcast on the same frequency as 802.11b Wi-Fi, and may cause drop-outs and reduced speed.</small>		<b>NONE IT'S RELIABLE!</b>

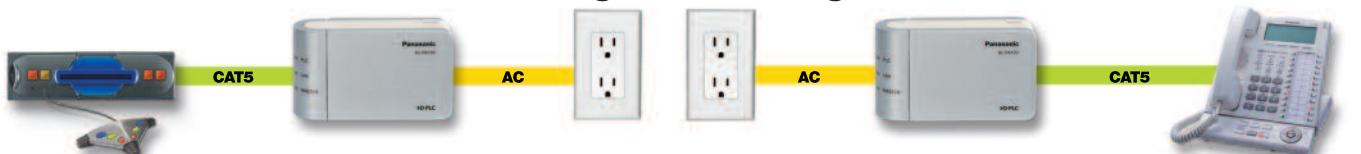
### Secure Enough for Government Secrets



Connect Network Cameras

Connect Printers

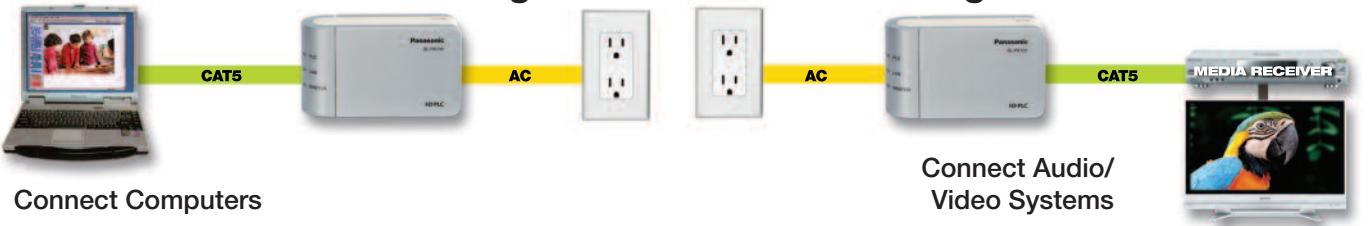
### Reliable Enough for Gaming/Voice



Connect Game Systems

Connect IP Phones

### Fast Enough for HD Video Streaming



Connect Computers

Connect Audio/  
Video Systems

HD-PLC ethernet adaptor



Control4 makes your life easier by getting all the systems in your home seamlessly working as one

cohesive system. You can tame your gadgets and transform your home into a better living environment. Turn on and off the things you want, where you want and how you want. Security cameras, music, TV, video, lights, temperature, and much more. It is the only affordable, complete home automation system that will grow with you.

And with the ability to control IP-based video cameras users can view and monitor anything they like and have it displayed on a Control4's touch screen or any Control4-enabled television. And, while a user is on vacation, he can monitor his home live at any time using a web browser. With Control4 you have control over the things in your home that used to control you, which makes life easier everyday.



Crestron's Integrated Partner Program is a powerful coalition of 400 manufacturers from many diverse markets that are committed to

deliver seamless integrated solutions. Crestron's open platform approach, allowing partner manufacturers' products to perform to their specifications as plug and play devices streamlines technology, simplifies integration and increase value for our dealers and customers. Crestron engineers collaborate with partners to develop control modules, which are certified and posted online for easy download. Crestron guarantees the seamless operation and optimal performance of each module.

For more than 35 years Crestron has been the world's leading manufacturer of advanced control and automation systems, innovating technology and reinventing the way people live and work. Offering integrated solutions to control audio, video, computer, and environmental systems, Crestron streamlines technology, improving the quality of life for people in corporate boardrooms, conference rooms, classrooms, auditoriums, and in their homes.

D3Data LLC, founded in 2000 is a software development company for Network Video Recorder (NVR) and Hosted NVR security solutions. D3Data is a Web NVR Software Technology Company. Our NVR



technology allows for complete Web Browser management of the entire NVR solution for a true remote client experience. D3Data builds and supplies one of the world's leading security network video recording (NVR) and management software platforms. NETwork Video Management (NETVM) is a complete video surveillance system built using web browser technology to meet the market demands for easy, remote and portable access to video data. The NETVM system is an enterprise network software solution similar to other network based software solutions for managing e-mail, databases, and network business services with robust and professional installation, management, and user software tools. D3Data is a global player in the video market with customers worldwide. NETVM is capable of controlling thousands of individual cameras, servers, and IP DVRs from a single Web Browser Graphical User Interface (GUI). NETVM supports JPEG, MotionJPEG, MPEG-2, MPEG-4, and H.264 video streams. The system was developed entirely as an open camera and web user access platform in a Windows OS environment.

For more information, visit: [www.d3data.com](http://www.d3data.com).

Based in Columbus, Ohio,  
Exceptional Innovation is  
committed to creating world-class



home automation products that give consumers more choices and make technology simple to use. With a solid and expanding base of industry-leading Certified Partners, EI is changing the face of home control with its multi-vendor compatible software solution called Life|ware, which merges instant access to lighting, shades, security systems, thermostats, and audio with the full-featured digital entertainment of Windows Vista Media Center.

Dedicated to open standards and integration with benchmark products, EI chose Panasonic as one of its initial technology partners to provide consumers a choice of high-quality security surveillance cameras for its Life|ware digital lifestyle solution. As a result, Life|ware's Web Services For Devices (WSD) technology provides easy setup and seamless access for a broad range of Panasonic IP cameras, giving customers full-function control to simultaneously view multiple camera feeds and conveniently monitor the living environment from anywhere in their home.





# ipConfigure

Enterprise IP Video Management

ipConfigure is a developer of IP video management software with a focus in video surveillance, hosted monitoring, and video syndication. ipConfigure has successfully deployed systems in facilities ranging from nuclear power plants to public school systems all based on a non-proprietary methodology while offering compatibility with Panasonic IP Network cameras, server and storage hardware. As physical security and IT converge ipConfigure will continue to facilitate the process by developing solutions that integrate both building and life safety systems through a seamless enterprise solution.



Milestone Systems is the global market leader in open platform IP video management software. Milestone's XProtect™ products support Panasonic network cameras and operate as the core of your surveillance systems: connecting, sharing and managing all devices

through a single interface that is easy to learn and operate. The XProtect platform is easy to use, proven in operation and scales to support unlimited devices. In addition to Panasonic, XProtect products support the widest choice of network video hardware and are designed with an Application Programming Interface (API) that integrates seamlessly with other manufacturers' systems. Using XProtect, you can build scalable, "best of breed" solutions to video enable your business, reduce cost, optimize processes, protect assets and ultimately increase value in your company's products and services.

Headquartered in Austin, Texas, NetStreams is the world leader in IP Audio, Video and Control products. NetStreams' products are designed for residential and commercial use and offer new levels of affordability, simplicity, reliability, and expandability, benefiting both installers and end-users with lower costs for installation and set-up, and an intuitive and rich user experience. By utilizing its patent-pending StreamNet™ technology, NetStreams systems enables true plug-n-play integration with Panasonic IP Cameras, allowing for the easy viewing of multiple camera feeds on the DigiLinX system's touch screens, any PC or MAC, Wireless web tablet or PDA.

For additional information on NetStreams and its innovative products, please visit [www.netstreams.com](http://www.netstreams.com).



On-Net Surveillance Systems Inc (ONSSI) provides the most advanced non proprietary, open architecture, Intelligent IP Video Surveillance solutions. OnSSI's systems deliver feature-rich camera management, sophisticated recording and archiving, automatic Push Live Video on event, and a complete control-room video-wall management solution using the IP Network as a limitless virtual matrix. OnSSI's solutions work with a full range of Panasonic cameras, and can be found in a wide range of municipalities, federal and local government agencies, as well as enterprise, industrial, and educational settings.



OnSSI's intelligent IP video surveillance software solutions enable seamless integration with powerful, mission-specific third party modules, controllable from within the NVR and video client interface. They enable efficient automation of event detection, analysis and management processes, thus extending the functionality of IP-based video surveillance.

Content analytics and video intelligence tools can be easily integrated with other external applications, databases, or physical devices to further extend their functionality, and can be assigned multiple rules and schedules for precise information extraction.

True to the approach of allowing the user to choose best-in-breed components, OnSSI invests extensive efforts and resources in collaborating with the leading developers of video intelligence and content analytics modules worldwide, as well as other key technologies, to provide its users with the best possible integrated solutions.

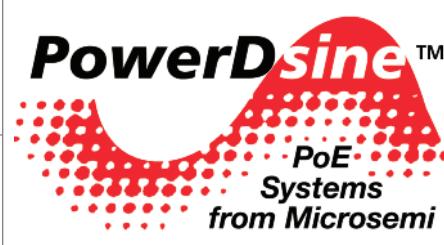


WebCCTV NVR from Quadrox is a high-quality network video recording system designed to work with up to 16 network or analog cameras. WebCCTV supports all features and functions, including audio transmission, performed by Panasonic network cameras, that offers

customers a complete solution for managing and protecting their business.

As one of the most IT standards-based recording systems in the market, WebCCTV NVR offers customers a wide variety of easy-to-use features and functions that include:

- Synchronized playback of up to 4 cameras
- Time/Date/Alarm Event-based playback
- Multi-function activity detection
- No client software required
- IT standards-based
- POS integration



PowerDsine is a leader of the fast-growing Power over Ethernet (PoE) technology that allows power to be transmitted over the same network cable as data. PowerDsine has been a pioneer in the development of the Power over Ethernet market place from its inception.

PowerDsine Midspans (Injectors) are the perfect solution for the Panasonic line of PoE ready cameras, including the new BB-HCM500 and 400 series.

## TOTAL INTEGRATED SOLUTIONS

Panasonic IP network cameras are so versatile and powerful that they can be used in a variety of applications while being integrated with other products giving you a total integrated solution.

### Panasonic Video Door Phone Intercom System

See and talk to your visitors with this security enhancement

Incorporate this system with Panasonic IP network cameras providing these important benefits:

- Receive emails with a picture of the person at the door.
- Unlock that door and allow the person in from anywhere in the world.
- Record images of any person who rings the doorbell.
- View the person ringing your door bell right from your own television.



### Panasonic Advanced Communications

Flexible, Affordable, High Performance Telephone Systems

The Perfect Compliment to IP network cameras. The Panasonic Advanced and Digital Hybrid Telephone Systems are designed for use in a home or business, providing you an enhanced level of security and convenience.

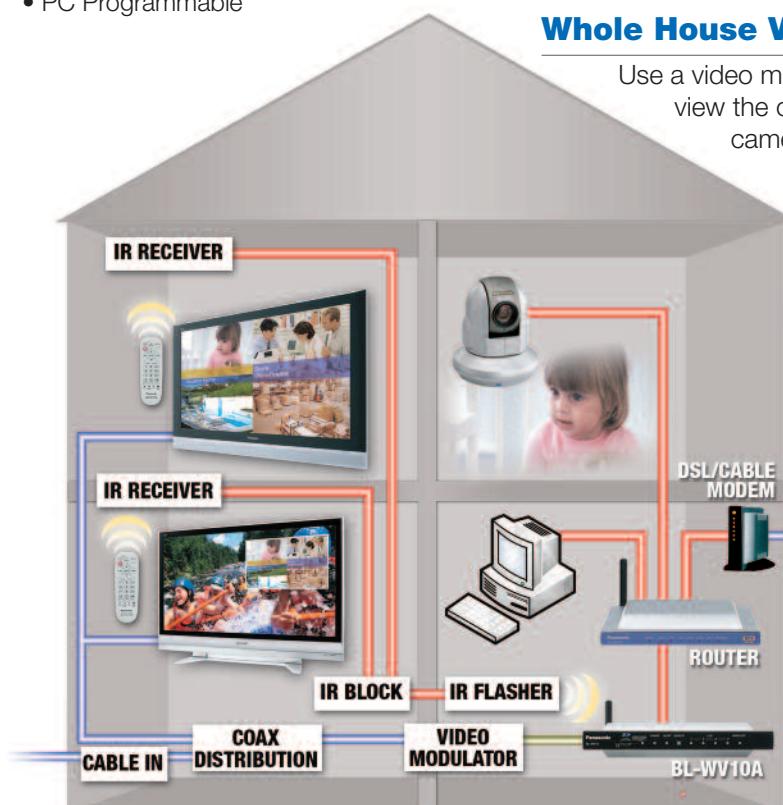
A Panasonic communications system simply makes life easier.

- Room to Room Intercom
- System Speed Dial
- Door Phone/Door Opener
- Caller ID Compatible with Logging
- PC Programmable
- Backlit Dial Keypad and LCD Display
- Baby Monitor
- Multi-line Cordless with Intercom
- Voice Mail



### Whole House Video

Use a video modulator and IR blaster to view the camera video and control the cameras from a TV on the system.



# Why you should use a Panasonic Certified Dealer

**When it comes to your business or home, don't just settle for anybody. Ask whether they are a Panasonic Certified Network Camera Dealer/Installer.**

## **Panasonic Certified Installers: Providing Extra Support to Do the Job Right!**

Certified Installers have been tested on the Panasonic IP Cameras and are provided a number of advantages to help them ensure that the job is done right.

Panasonic Certified Installers are given priority telephone technical support, access to a dedicated website with a variety of technical resources, as well as the latest information on the entire line of IP Cameras, including timely information on new product announcements, product specification sheets and integration options to aid in implementing a complete solution. Additionally, Panasonic Certified Installers are provided a service of Advanced Product Replacement to ensure that everything is performing at an optimum level.

Certified dealer benefits subject to change at any time.

**When it comes to your business or home,  
don't just settle for anybody.**

**Ask for a Panasonic Certified Camera  
Dealer/Installer.**

**A Certified Installer has proven that they can help with the following:**

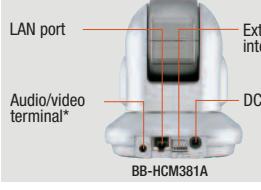
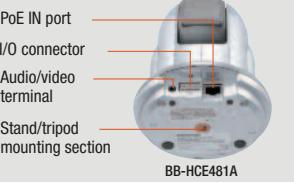
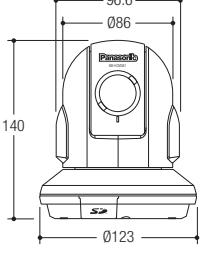
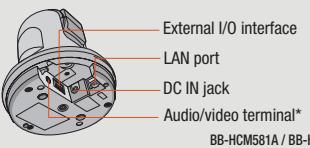
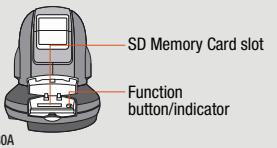
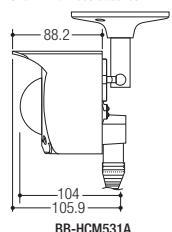
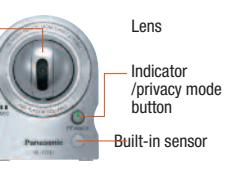
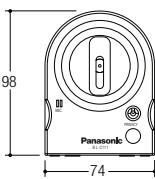
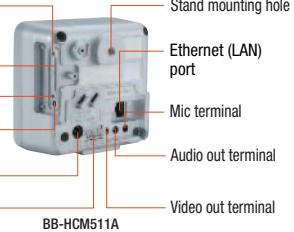
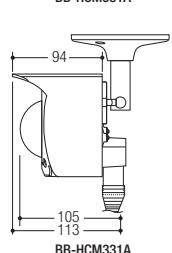
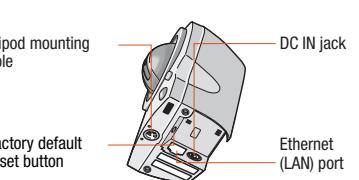
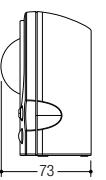
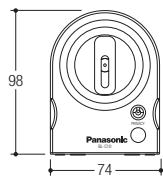
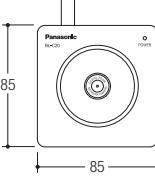
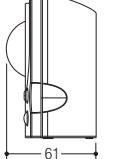
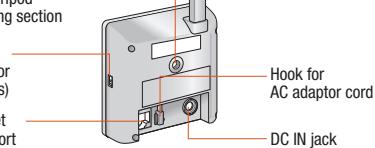
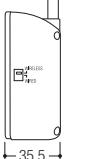
- Integrating the cameras with a variety of other products to create an all inclusive system.
- Making sure that the camera is updated with the latest firmware.
- Setting the camera up with administrator and guest access.
- Allow for single and multi camera views on a single screen.
- Administering the settings for motion detection and e-mail notification.
- Customizing the days and times for ideal times of operation and recording.
- Setting up a protocol for the camera to upload images to an FTP site on a regular basis.

**Plus much, much more!**

For the nearest Panasonic Certified Installer, visit  
[www.panasonic.com/netcam](http://www.panasonic.com/netcam) or [www.panasonic.com/seethere](http://www.panasonic.com/seethere)  
and just enter your home or business zip code.



## Part Names and Dimensions

BB-HCM381A / BB-HCE481A / BB-HCM581A / BB-HCM580A		Unit : mm	
 <p>Lens SD Memory Card slot Indicator</p>	 <p>LAN port External I/O interface Audio/video terminal* DC IN jack</p> <p>BB-HCM381A</p>	 <p>PoE port I/O connector Audio/video terminal Stand/tripod mounting section</p> <p>BB-HCE481A</p>	 <p>140 96.6 086 0123</p> <p>BB-HCE481 / BB-HCM381A</p>
	 <p>External I/O interface LAN port DC IN jack Audio/video terminal*</p> <p>BB-HCM581A / BB-HCM580A</p>	 <p>SD Memory Card slot Function button/indicator</p> <p>BB-HCE481 / BB-HCM381A</p>	
<p>*Video terminal only for BB-HCM580A.</p>			
BB-HCM311A / BB-HCM331A / BB-HCM511A / BB-HCM531A / BB-HCM515A		BL-C111A / BL-C131A	
 <p>Lens cover Lens Microphone Indicator</p> <p>BB-HCM511A</p>	 <p>88.2 104 105.9</p> <p>BB-HCM531A</p>	 <p>Lens housing Microphone Indicator/privacy mode button Built-in sensor</p> <p>BB-C111A</p>	 <p>98 74</p> <p>BB-C131A</p>
 <p>Factory default reset button SD Memory Card slot Restart button Function button/indicator DC IN jack I/O connector</p> <p>BB-HCM511A</p>	 <p>Stand mounting hole Ethernet (LAN) port Mic terminal Audio out terminal Video out terminal</p> <p>BB-HCM331A</p>	 <p>Tripod mounting hole DC IN jack Factory default reset button Ethernet (LAN) port</p> <p>BB-C111A</p>	 <p>94 105 113</p> <p>BB-C131A</p>
BL-C10A / BL-C30A		BL-C1A / BL-C20A	
<p>When using the BL-C10A</p>  <p>Lens Lens ON/OFF switch Human detection sensor</p> <p>BB-C10A</p>	 <p>98 74</p> <p>BB-C30A</p>	<p>When using the BL-C20A</p>  <p>Antenna Indicator Lens</p> <p>BB-C20A</p>	 <p>85 85</p> <p>BB-C20A</p>
 <p>Tripod mounting section Ethernet (LAN) port DC IN jack</p> <p>BB-C10A</p>	 <p>61</p> <p>BB-C30A</p>	 <p>Stand/Tripod mounting section Switch (Wired or wireless) Ethernet (LAN) port Hook for AC adaptor cord DC IN jack</p> <p>BB-C20A</p>	 <p>35.5</p> <p>BB-C20A</p>
BL-WV10A		BL-PA100A	
 <p>LAN jack section DC IN jack Video out terminal Factory default reset button Antenna</p> <p>BB-WV10A</p>	<p>Normal: For ordinary uses such as monitoring and recording camera images.</p> <p>Setup: For simple settings.</p> <p>SEQ. Display: For successively displaying the images of connected cameras.</p>	 <p>Master/terminal selector Power line socket Factory default reset button Ethernet (LAN) port</p> <p>BB-PA100A</p>	

# Business IP Camera Features Chart

Feature	BB-HCM581A HCM580A	BB-HCM515A	BB-HCM531A	BB-HCM511A	BB-HCE481A	BB-HCM381A	KX-HCM280A	KX-HCM110A	BB-HCM371A	BB-HCM331A	BB-HCM311A	BB-HCM403A				
Image Compression	JPEG (3 levels), MPEG4						JPEG (Motion JPEG for moving image display)									
Video Resolution	640 x 480, 320 x 240 (default), 192 x 144	1280 x 1024, 640 x 480, 320 x 240 (default), 192 x 144	640 x 480, 320 x 240 (default), 192 x 144				640 x 480, 320 x 240 (default), 160 x 120									
Image Quality	JPEG (favor clarity, standard, favor motion), MPEG4						JPEG (favor clarity, standard, favor motion)									
Frame Rate <sup>1</sup>	Max. 30 frames/sec. (640 x 480 <sup>2</sup> , 320 x 240, 192 x 144)	Max. 7 frames/sec. (1280 x 1024 <sup>3</sup> ) Max. 30 frames/sec. (640 x 480 <sup>2</sup> , 320 x 240, 192 x 144)	Max. 30 frames/sec. (640 x 480 <sup>2</sup> , 320 x 240, 192 x 144)				Max. 12 frames/sec. (640 x 480 <sup>4</sup> ) Max. 30 frames/sec. (320 x 240, 160 x 120)									
Security	User ID/Password						User ID/Password/IPsec									
Supported Protocols	IPv4: TCP, UDP, IP, HTTP, FTP, SMTP, DHCP, DNS, ARP, ICMP, POP3, NTP, UPnP <sup>TM</sup> , SMTP Authentication, RTP, RTSP, RTCP IPv6: TCP, UDP, IP, HTTP, FTP, SMTP, DNS, ICMPv6, POP3, NDP, NTP, RTP, RTSP, RTCP						IPv4/IPv6 Dual-Stack IPv6: TCP, UDP, IP, HTTP, FTP, SMTP, DHCP, DNS, ARP, ICMP, POP3, NTP, IPsec, UPnP									
User Access Limit	Max. 30 simultaneous accesses (max. 10 accesses with voice reception)						Max. 30 simultaneous accesses	Max. 30 simultaneous accesses (max. 10 accesses with voice reception)								
Buffered Images	Approx 350 images (320 x 240) • standard image quality • with time display • without using SD Memory Card						Approx 125 images (320 x 240) • standard image quality • with time display • without using SD Memory Card									
Image Transfer Method	SMTP <sup>5</sup> , FTP, HTTP						SMTP <sup>5</sup> , FTP									
Image Buffer/Transfer Triggers	Alarm, timer or motion detection															
Zoom	42x zoom (21x optical, 2x digital)	10x digital zoom (by area)			42x zoom (21x optical, 2x digital)		10x digital zoom (by area)									
Viewing Angle	Horizontal—Tele: 2.6° (optical) / 1.3° (digital), wide: 51° Vertical—Tele: 1.9° (optical) / 0.9° (digital), wide: 38°	Horizontal: 50° (total 170°)	Horizontal: 54° (total 174°) Vertical: 37° (total 105°)		Horizontal—tele: 2.6° (optical) / 1.3° (digital), wide: 51° Vertical—tele: 1.9° (optical) / 0.9° (digital), wide: 38°		Horizontal 43° (total 163°) Vertical 32° (total 97°)		Horizontal 53° (total 173°) Vertical 40° (total 105°)		Horizontal 53° (total 118°) Vertical 40°					
Pan (Horizontal direction)	-175° up to +175°	-60° to +60°			-175° up to +175°			-60° up to +60°			-					
Tilt (Vertical direction)	-120° up to 0° (on a table), 0° up to +90° (on a ceiling)	-45° up to +20°			-120° up to 0° (on a table), 0° up to +90° (on a ceiling)			-45° up to +20°			0° up to +65° (administrator only)					
Sensor Type	1/4" CCD sensor, approx. 320,000 pixels	1/4" CMOS sensor, approx. 1,300,000 pixels	1/4" CCD sensor, approx. 320,000 pixels		1/4" CCD sensor, approx. 380,000 pixels		CMOS	1/4" CCD sensor, approx. 320,000 pixels								
Lens Focal Point	Auto/Manual (40 steps)	Fixed (focal range: 0.5 m to ∞)			Auto/manual (40 steps)			Fixed (focal range: 0.5 m to ∞)								
Lens Brightness	F1.6 (Wide) 3.6 (Tele)	F2.8			F1.6 (Wide) 3.6 (Tele)			F2.8	F3.5							
Required Light Intensity	2 to 100,000 lux (in Color Night View Mode: 0.09 to 100,000 lux)	At 640 x 480: 10 to 100,000 lux (in Color Night View Mode: 5 to 100,000 lux) At 1280 x 1024: 7 to 100,000 lux (in Color Night View Mode: 3 to 100,000 lux)	2 to 100,000 lux (in Color Night View Mode: 0.2 to 100,000 lux)		3 to 100,000 lux (in Color Night View Mode: 0.09 to 100,000 lux)		5 to 100,000 lux (in Color Night View Mode: 1 to 100,000 lux)		3 to 100,000 lux (in Color Night View Mode: 0.2 to 100,000 lux)							
Audio Communication	2-Way half duplex <sup>6</sup>						2-Way half duplex									
Audio Compression	ADPCM 32 kbps						ADPCM 32 kbps									
Audio Bandwidth	300 Hz - 3.4 kHz						300 Hz - 3.4 kHz									
Audio Input	External microphone input terminal	Built-in microphone or external microphone input terminal	External microphone input terminal				Built-in microphone, external microphone input terminal									
Audio Output	Audio line output terminal for external speaker						Audio line output terminal for external speaker									
Standards	-						IEEE802.11b/g	-								
Antenna	-						Diversity	-								
Number of Channel	-						11 ch.	-								
Transmission Speed	-						Up to 54 Mbps.	-								
Security	-						WEP 64/128/152 bit	-								
Network Interface	Ethernet (10Base-T/100Base-TX)															
External I/O Connector	Input: 2, Output: 1				Input:1, Output: 1	Input: 2, Output: 1			Input: 2, Output: 1							
Video Output <sup>8</sup>	Analog composite (NTSC/PAL)				Analog composite (NTSC)				-							
Audio Output <sup>8</sup>	3.5mm stereo mini jack (output is mono)						3.5mm stereo mini jack (output is mono)									
External Microphone Input	3.5mm mini jack						3.5mm mini jack									
SD Memory Card Slot	Full size (operation guaranteed for 2GB, 1GB, 512MB, 256MB, 128MB and 64MB SD Memory Cards)						Full size (operation guaranteed for 2GB, 1GB, 512MB, 256MB, 128MB and 64MB SD Memory Cards)									
Operating Temperature	0°C to +40°C (+32°F to +104°F)	-20°C to -50°C (+32°F to +122°F)		0°C to +40°C (+32°F to +104°F)			-20°C to +50°C (-4°F to 122°F)			0°C to +40°C (32°F to 104°F)						
Operating Humidity	20% to 80% (No Condensation)	20% to 90% (No Condensation)		20% to 80% (No Condensation)			20% to 90% (No condensation)			20% to 80% (No condensation)						
Dimensions (H x W x D)	140 x 123 x 123mm (5-1/2 x 4-13/16 x 4-13/16")	100 x 100 x 74mm (3-15/16 x 3-5/16 x 2-15/16")			140 x 123 x 123mm (5-1/2 x 4-13/16 x 4-13/16")			100 x 100 x 73.5mm (3-15/16 x 3-15/16 x 2-7/8")	100 x 100 x 80mm (3-15/16 x 3-15/16 x 3-1/8")	100 x 100 x 73.5mm (3-15/16 x 3-15/16 x 2-7/8")	97.5 x 123 x 123mm (3-13/16 x 4-13/16 x 4-13/16")					
Weight (only the unit)	581A: 650g (1.43 lb.) 580A: 640g (1.41 lb.)	320g (0.71 lb.) 335g (0.74 lb.) 330g (0.73 lb.)	650g (1.43 lb.) 640g (1.41 lb.) 640g (1.41 lb.)	650g (1.43 lb.) 640g (1.41 lb.) 640g (1.41 lb.)	275g (0.61 lb.) 350g (0.78 lb.) 310g (0.68 lb.)	300g (0.66 lb.) 330g (0.73 lb.)	PoE: 48 V, IEEE 802.3af-compliant Power over Ethernet AC adaptor: Input 120 V AC / Output 12 V DC (Option)	AC adaptor: Input 120 V AC / Output 12 V DC								
Power Supply	PoE <sup>7</sup> : 48 V, IEEE 802.3af-compliant Power over Ethernet AC adaptor: Input 120 V AC / Output 12 V DC (Option)						PoE: 48 V, IEEE 802.3af-compliant Power over Ethernet AC adaptor: Input 120 V AC / Output 12 V DC (Option)	PoE: 48 V, IEEE 802.3af-compliant Power over Ethernet AC adaptor: Input 120 V AC / Output 12 V DC (Option)								
Consumption	PoE <sup>7</sup> : approx. 9 W AC adaptor: 10.5 W	PoE: approx. 7 W AC adaptor: 7 W	PoE: approx. 6.5 W AC adaptor: 7 W	PoE: 11 W	AC adaptor: 12 W	AC adaptor: 12 W	AC adaptor: 6 W	AC adaptor: 10 W	AC adaptor: 6 W							
	PoE: 5.5 W AC adaptor: 5.8 W								PoE: 5.5 W AC adaptor: 5.8 W							

<sup>2</sup> – Frame rate may slow down depending on the network environment, PC performance, image quality, SD memory recording, when colour night view mode is activated, etc.

<sup>3</sup> – When viewing images at 1280 x 1024 resolution, frame rate is reduced to 7.5 x 10 s for all users, regardless of the resolution they are using to view images.

<sup>4</sup> – The BB-HCM380A does not support Audio 2-way communication or the easy PoE power supply.

<sup>5</sup> – Use only the included Audio/Video Cable when connecting an external microphone, speaker or TV.

# Home IP Camera Features Chart

Feature	BL-C131A	BL-C111A	BL-C30A	BL-C10A	BL-C20A	BL-C1A
Server	Image Compression	JPEG (3 levels), MPEG4	JPEG (Motion JPEG for moving image display)	JPEG (Motion JPEG for moving image display)		
	Video Resolution	640 x 480, 320 x 240 (default), 192 x 144	640 x 480, 320 x 240 (default), 160 x 120	640 x 480, 320 x 240(default), 160 x 120		
	Image Quality	JPEG (favor clarity, standard, favor motion), MPEG4	3 modes (favor clarity, standard, favor motion)	3 modes (favor clarity, standard, favor motion)		
	Frame Rate <sup>1</sup>	Max. 30 frames/sec (640 x 480, 320 x 240 or 192 x 144)	Max. 7.5 frames/sec (640 x 480) Max. 15 frames/sec (320 x 240, 160 x 120)		Max. 7.5 frames/sec (640 x 480) Max. 15 frames/sec (320 x 240, 160 x 120)	
	Security	User ID/password	User ID/password	User ID/password	User ID/password	
	Supported Protocols	IPv4 / IPv6 Dual-Stack IPv4: TCP, UDP, IP, HTTP, FTP, SMTP, DHCP, DNS, ARP, ICMP, POP3, NTP, UPnP™, SMTP Authentication, RTP, RTSP, RTCP IPv6: TCP, UDP, IP, HTTP, FTP, SMTP, DNS, ICMPv6, POP3, NDP, NTP, RTP, RTSP, RTCP	TCP, UDP, IP, HTTP, FTP, SMTP, DHCP, DNS, DDNS, ARP, ICMP, POP3, NTP - - - -		TCP, UDP, IP, HTTP, FTP, SMTP, DHCP, DNS, ARP, ICMP, POP3, NTP, UPnP™ - - - -	
	User Access Limit	Max. 30 simultaneous accesses	Max. 20 simultaneous accesses	Max. 20 simultaneous accesses		
	Buffered Images <sup>3</sup>	Approx. 250 images (320 x 240) • standard image quality • with time display	Approx. 250 images: (320 x 240) • standard image quality • with time display	Approx. 250 images: (320 x 240) • standard image quality • with time display		
	Image Transfer Method	SMTP <sup>4</sup> , FTP, HTTP	SMTP, FTP	SMTP <sup>10</sup> , FTP		
	Image Buffer / Transfer Triggers	Alarm, timer or motion detection	Pyroelectric infrared sensor or timer	Alarm or motion detection		
Network Camera	Zoom	10x digital zoom (by area)	10x digital zoom (by area)	10x digital zoom (by area)		
	Viewing Angle	Horizontal: 49° (total 149°), Vertical: 37° (total 87°)	Horizontal: 43° (total 143°), Vertical: 32° (total 82°)	Horizontal: 53°, Vertical: 41°		
	Pan (Horizontal direction)	-50° up to +50°	-50° up to +50°	-		
	Tilt (Vertical direction)	-40° up to +10°	-40° up to +10°	-		
	Revolving Speed	Pan: max. 50°/sec Tilt: max. 50°/sec	Pan: Max. 50°/sec Tilt: Max. 50°/sec	-		
	Sensor Type	1/6 inch CMOS sensor, approx. 320,000 pixels	1/4 inch CMOS sensor, approx. 320,000 pixels	1/4 inch CMOS sensor, approx. 320,000 pixels		
	Lens Focal Point	Fixed (focal range: 0.3m to ∞)	Fixed (focal range: 0.5m to ∞)	Fixed (focal range: 0.3m to ∞)		
	Lens Brightness	F2.8	F2.8	F2.8		
Audio	Required Light Intensity	10 to 10,000 lux (in colour night view mode: 3 to 10,000 lux)	1 to 10,000 lux -	10 to 10,000 lux (in color night view mode: 4 to 10,000 lux)		
	Audio Communication	Half-duplex one-way communication (transceiver system)	-	-		
	Audio Compression	ADPCM 32 kbps	-	-		
	Audio Bandwidth	300 Hz-3.4 kHz	-	-		
	Audio Input	Built-in microphone	-	-		
Wireless	Audio Output	-	-	-		
	Standards	IEEE 802.11b/g	-	IEEE 802.11b/g	-	IEEE 802.11b/g
	Antenna	Diversity	-	Diversity	-	Diversity
	Number of Channel	11ch.	-	11ch.	-	11ch.
	Transmission Speed	Up to 54 Mbps	-	Up to 54 Mbps	-	Up to 54 Mbps
	Security	SSID, WEP (64/128/152 bit), WPA-PSK (TKIP), WPA2-PSK (AES)	-	SSID, WEP (64/128/152 bit)	-	SSID, WEP (64/128/152 bit)
Terminal	Network Interface	Ethernet (10Base-T/100Base-TX)		Ethernet (10Base-T/100Base-TX)		Ethernet (10Base-T/100Base-TX)
	External I/O Connector	-		-		-
	Video Output <sup>15</sup>	-		-		-
	Audio Output <sup>15</sup>	-		-		-
	External Microphone Input	-		-		-
	SD Memory Card Slot	-		-		-
General	Operating Temperature	+5°C to +40°C (+41°F to +104°F)		+5°C to +40°C (+41°F to +104°F)		+5°C to +40°C (+41°F to +104°F)
	Operating Humidity	20% to 80% (No Condensation)		20% to 80% (No Condensation)		20% to 80% (No Condensation)
	Dimensions (H x W x D)	98 x 74 x 73mm (3-7/8 x 2-15/16 x 2-7/8")	98 x 74 x 73mm (3-7/8 x 2-15/16 x 2-7/8")	98 x 74 x 73mm (3-7/8 x 2-15/16 x 2-7/8")	98 x 74 x 61mm (3-7/8 x 2-15/16 x 2-3/8")	85 x 85 x 35.5mm (3-3/8 x 3-3/8 x 1-3/8")
	Weight (only the unit)	210g (0.46 lb.)	180g (0.4 lb.)	200g (0.44 lb.)	170g (0.37 lb.)	165g (0.36 lb.)
	Power Supply (US)	Input: 100 - 240 V AC / Output: 9 V DC		Input: 120 V AC / Output: 12 V DC		Input: 120 V AC / Output: 9 V DC
	Consumption (US)	6.0 W	4.0 W	6.4 W	3.5 W	4.6 W

1 – The frame rate may decrease depending on the network environment, PC performance.

2 – For MPEG-4 only. Not applicable to JPEG.

- 3 – The maximum number of frames changes depending on the resolution and image quality
- 4 – PDP before SMTP authentication and SMTP authentication (PLAIN | LOGIN and CBAM-MD5)

4 – PDP before SMTP authentication and SMTP authentication (PLAIN LOGIN and CRAM-MD5) are supported.

10 – POP before SMTP authentication and SMTP authentication (PLAIN and LOGIN) are supported.

15 SMTP authentication (CRAM-MD5) is not supported.  
Use only the included Audio/Video Cable when conn

15 – Use only the included Audio/Video Cable when connecting an external microphone, speaker or TV.

# Specifications

Wireless camera monitoring system		Network camera server		Camera management system	
Model No. >>>	BL-WV10A 	Model No. >>>	BB-HCS301A 	Model No. >>>	BB-HGW700A 
Image data compression system	JPEG (Motion JPEG for moving image display)	Image data compression system	JPEG (Motion JPEG for moving image display)		Main unit
Video resolution	640 x 480, 320 x 240	Video resolution	640 x 480, 320 x 240 (default), 160 x 120	Number of ports	1
Image quality	3 modes (favor clarity, standard, favor motion)	Image quality	3 modes (favor clarity, standard, favor motion)	Connector	8-pin modular jack (RJ-45)
Frame rate	Max. 30 frames/sec (320 x 240)	Frame rate <sup>1</sup>	Max. 12 frames/sec (640 x 480) Max. 30 frames/sec (320 x 240 or 160 x 120)	Physical Interface	IEEE 802.3 (10base-T) IEEE 802.3u (100Base-TX)
Security	User ID/password	Security	User ID/password/IPsec	WAN Interface	Throughput between WAN and LAN using IPv4 (value measured by Panasonic)
Supported protocols	IPv4: TCP, UDP, HTTP, FTP, DHCP	Encryption algorithm	DEC-CBC, 3DES-CBC, AES-CBC		Maximum of 98 Mbps (IPv4/ASmartBits) Maximum of 93 Mbps [FTP (Static)] Maximum of 92 Mbps [FTP (PPPoE)] Maximum of 16 Mbps [FTP (PPTP)] Maximum of 45 Mbps (IPsec, No Encryption, SHA-1 Authentication Algorithm)
Camera image display	Displays a maximum of 8 camera images 1 Screen per 8 pages, 2 screens per 4 pages, 4 screens per 2 pages Camera pan/tilt operations Sequential display 16x digital zoom 21x optical zoom for BB-HCM381/HCE481 Image size switching Resolution switching	IPSec function	ESP Encryption, ESP Authentication Transport mode/Tunnel mode IKE (Internet Key Exchange)	LAN Interface	Throughput between WAN and LAN using IPv6 (value measured by Panasonic)
Camera motion sensor support	Automatically switch to camera image Automated camera image recording Buzzer/LED notification	IKE (Internet Key Exchange)	Pre-Shared Key, Main mode		Maximum of 98 Mbps (IPv4/ASmartBits) Maximum of 85 Mbps [FTP (Static)] Maximum of 47 Mbps (IPsec, No Encryption, SHA-1 Authentication Algorithm)
Number of ports	4	Supported protocols	IPv4/IPv6 Dual-Stack • IPv4: TCP, UDP, IP, HTTP, FTP, SMTP, DHCP, DNS, ARP, ICMP, POP3, NTP, IPsec, UPnP <sup>TM</sup> • IPv6: TCP, UDP, IP, HTTP, FTP, SMTP, DNS, ICMPv6, POP3, NDP, NTP, IPsec	Number of ports	4
Connector type	8-pin modular jack (RJ-45)	User access limit	Max. 30 simultaneous accesses (max. 10 accesses with voice reception)	Connector	8-pin modular jack (RJ-45)
Physical interface	IEEE802.3 (10BASE-T) IEEE802.3u (100BASE-TX) MDI/MDI-X with auto-detect	Buffered image <sup>2</sup>	Approx. 125 images (320 x 240) • Approx. 16 KB per image • Without using SD Memory Card	Physical interface	IEEE 802.3 (10base-T) IEEE 802.3u (100Base-TX)
IEEE802.11b	Transmission speed <sup>1</sup> : 11/5.5/2.1 Mbps (IEEE802.11b standard); automatic fallback	Message-digest algorithm	HMAC-MD5, HMAC-SHA-1	IEEE802.11b	Transmission speed [Standard value] Mbps
	Number of channels	Image transfer condition	Alarm, Timer or Motion Detection		11/5.5/2/1* (complying with IEEE 802.11b); automatic fallback
	Security	Image transfer method	SMTP, FTP	Security	WPA-PSK (TKIP), WPA2-PSK (AES), WEP (64 bit/128 bit/152 bit), SSID, stealth SSID (hidden SSID, permitting/not permitting connection using the ANY key), MAC address filtering
IEEE802.11g	Transmission speed <sup>1</sup> : 54/48/36/24/18/12/9/6 Mbps (IEEE802.11g standard); automatic fallback	Audio communication	2-way half duplex	IEEE802.11g	Transmission speed
	Number of channels	Audio bandwidth	300 Hz – 3.4 kHz		54/48/36/24/18/12/9/6* (complying with IEEE 802.11g); automatic fallback
	Security	Audio play method	Play with ActiveX		Number of channels
Terminal	Analog video output	Input encoding method	Encoding with ActiveX		11
	SD Memory card slot	Audio input	RCA pin jack Input impedance: 47kΩ maximum 0 dBm	Security	WPA-PSK (TKIP), WPA2-PSK (AES), WEP (64 bit/128 bit/152 bit), SSID, stealth SSID (hidden SSID, permitting/not permitting connection using the ANY key), MAC address filtering
General	Operating temperature	Audio output <sup>3</sup>	RCA pin jack Output impedance: 680 Ω	Operating temperature	32°F to 104°F (0°C to 40°C)
	Operating humidity	Interface	10Base-T/100Base-TX Ethernet RJ-45 connector x 1	Operating humidity	20% to 85% (No condensation)
	Dimensions (HxWxD)	External I/O	External sensor input x 1 External sensor output x 1	Dimensions (HxWxD)	1 7/16 x 8 1/16 x 5 1/2 inches (36 x 204 x 140 mm) when the antenna is stored
	Weight (Main unit only)	Video input	BNC connector 1.0 Vp-p75 Ω (NTSC)	Weight (Only the unit)	0.7 lb (330 g)
	Power supply	Video output	BNC connector through output of video output	Power supply	AC adaptor: input 120 V AC, output 12 V DC
	Consumption	SD Memory card slot	Full size (operation guaranteed for 2GB, 1GB, 512MB, 256MB, 128MB and 64MB SD Memory Cards)	Consumption	6 W
* The figures shown are theoretical maximums and not the actual figures when using the product.					
<b>Software</b>					
WAN side connection mode					
IPv4: PPPoE/DHCP/static IPv6: Tunneling/6 to 4/static v6					
PPPoE connection					
Always/manual					
RIP					
Yes (RIPv2)					
RIPng					
Yes					
DHCP server					
Yes (128 client setup possible)					
DNS relay (DNS proxyanswering)					
Yes					
IP packet filtering					
Yes (64 setup)					
Address translation method					
IP masquerade, port forwarding					
VPN					
PPPoT Server (IPv4) IPsec (IPv6)					

1 The values listed here are the theoretical maximum transmission speeds for wireless networks, and do not represent the actual speed of transmission.

2 Frame rate may slow down depending on the network environment, the PC performance, the image quality, enabling IPsec or what object you view.

3 The maximum number of frames changes depending on the image quality and what object you buffer.

4 Use the audio output with an amp.

## Network camera recorder

Model No. >>>		BB-HNP11	BB-HNP15		
Camera registration monitoring	No. of registerable camera units	Up to 64 camera units. Note that the actual number of registerable camera units varies depending on the performance of the PC used.			
	Camera image view	Images captured by registered cameras are shown in small images on a single screen.	Sequential display, Up to 16 multi-camera display, full screen display, layout change		
	Image display size	6 sizes from 320 x 240 to 60 x 45	Automatically adjusted to match the camera layout.		
	Camera setup	Each camera can be set up individually (camera name, resolution, image quality setting, recording format, timer setting, etc.)			
	Selected camera image display	640 x 480, 320 x 240, 160 x 120	Automatically adjusted to match the camera layout.		
	Image zoom in/out	Increase/decrease of image size in 25% steps (25% to 700%), image display size adjusted according to window size	None (Automatically adjusted to match the camera layout.)		
	Camera control	Control of basic camera functions (pan/tilt/zoom, brightness, resolution, image quality, sound level).			
	Preset	Preset functions set in cameras can be used			
	Recording file format	Original file format: images and voices are recorded continuously in a moving image file.			
	Recording media	Hard disk, network drive <sup>1</sup>			
Recording	Recording resolution	640 x 480, 320 x 240, 160 x 120	5 sizes (160 x 120 to 1280 x 1024) <sup>2</sup>		
	Image quality (JPEG only)	Favor clarity, standard, favor motion	Favor clarity, standard, favor motions		
	Recording interval	Not specified (based on camera's image update interval), specified: 2 images/second to 1 image/hour Recording interval designation and sound recording cannot be done simultaneously.	Not specified (based on camera's image update interval), specified: 5 images/second to 1 image/hour Recording interval designation and sound recording can be done simultaneously.		
	No. of camera units for simultaneous recording	Dependent on camera type and performance of PC. See the hardware specifications below.			
	Recording capacity limit function	Maximum recording capacity value can be set for individual camera units (whether to save new data by overwriting or to stop recording when the set capacity is reached can be selected). In addition to a capacity limit for each camera, there is also a capacity limit for the entire storage media.	Maximum recording capacity value can be set for individual camera units (whether to save new data by overwriting or to stop recording when the set capacity is reached can be selected). In addition to a capacity limit for each camera, there is also a capacity limit for the entire storage media.		
	Motion detection recording (JPEG only)	The unit can be set to activate recording when motion is detected (sensitivity and threshold value can be adjusted) or to record for a certain time length before and after motion detection. <sup>3</sup>	The unit can be set to activate recording when motion is detected (sensitivity and threshold value can be adjusted) or to record for a certain time length before and after motion detection. <sup>3</sup> Motion detection can be disabled in specified areas. Motion detection can be confirmed on-screen.		
	Timer recording	Programming of start and stop schedules based on day of week and time. Key word can also be set for recording. (10 schedules can be registered per camera).			
	Alarm recording (JPEG only)	Recording is triggered by the reaction of a sensor mounted to the camera. A certain time length before and after the sensor reaction can also be recorded.	Recording is triggered by the reaction of a sensor mounted to the camera. A certain time length before and after the sensor reaction can also be recorded.		
Image operation	Disk capacity limit function	Monitors the free space on the specified recording disk, and stops recording when the free space becomes smaller than the set value.			
	Continuous play back	Playback of images with voices, playback of image files. Playback speed can be varied.	Playback of images with voices, playback of image files. Playback speed can be varied. Playback in reverse is possible. Simultaneous playback of images from multiple cameras is also possible.		
	Recorded image view	Displays recorded image files in a list format.	A list of recorded image files, or a graphical list can also be displayed.		
	Operation of recorded images	Recorded images can be deleted.	Recorded images can be copied or deleted.		
	Automatic backup of recorded images	Automatically copies recorded images in a specified folder at a set time.	—		
Image search	Format conversion	Converts all or part of recorded images to JPEG or MPEG-1 format file. However, the audio portion cannot be converted.	All or part of the recorded images can be converted to MPEG-1, MPEG-4, or JPEG format files, or only the audio portion can be converted to WAV files.		
	Recorded image search function	Search using recording time or key word set before recording.	Search recorded images in 1-day units using the recording time, or using a key word set before recording. Searching can also be done for particular, desired folders.		
System requirements					
Item	Description				
OS	Windows® 2000 (Service Pack2 or later), Windows® XP Professional Edition				
Web browser	Internet Explorer 6.0 or later				
File system	NTFS (NT File System) recommended				
Hardware specifications	Recording condition	• When 10 network camera units are connected CPU: Intel® Pentium® 4 3GHz or greater, or equivalent compatible processor, RAM: 512 MB or more • When 4 network camera units are connected CPU: Intel® Pentium® 4 1.8GHz or greater, or equivalent compatible processor, RAM: 256 MB or more	• When 10 network camera units are connected CPU: Intel® Pentium® 4 3GHz or greater, or equivalent compatible processor, RAM: 1024 MB or more <sup>4</sup> • When 2 network camera units are connected CPU: Intel® Pentium® 4 2.6GHz or greater, or equivalent compatible processor, RAM: 512 MB or more <sup>4</sup>		
	Voice	Audio output function (including speaker or headphone)			
<b>JPEG</b> Data size for 1 image frame (image only), Data format: JPEG					
resolution (dot)	size (KB)	The approximate recording capacity is calculated by using the following formula: Size (KB) x Frame rate (images/sec) x Recording time (sec)			
1280 x 1024	approx.77	Example: • The calculation for a 1-hour recording of 640 x 480 resolution images at a frame rate of 5 images/sec in Favor Clarity mode is as follows: 50 KB x 5 Images/sec x 3,600 sec (1 hour) = 900,000 KB ≈ 879 MB			
640 x 480	approx.35	• In case of images with voices, 4 KB is added per each second: 900,000 KB + 4 KB x 3,600 sec = 914,400 KB ≈ 893 MB			
320 x 240	approx.16				
192 x 144	approx.7				
160 x 120	approx.5				
<b>MPEG-4</b> Data size for 1 second of motion images (images only), Data format: MPEG-4					
resolution (dot)	MPEG-4 bit rate*	The approximate recording capacity is calculated by using the following formula: MPEG-4 bit rate (Kbps)/8 bits x time (sec)			
640 x 480	768kbps	Example: • The calculation for 640 x 480 resolution images at an MPEG-4 bit rate of 768 Kbps is as follows: 768 Kbps/8 bits x 3,600 seconds (1 hour) = 345,600 KB ≈ 337.5 MB			
320 x 240	384kbps	• In case of images with voices, 4 KB is added per each second: 345,600 KB + 4 KB x 3,600 sec = 360,000 KB ≈ 352 MB			
192 x 144	128kbps				
<small>* MPEG-4 bit rate: This depends on the value set at the camera for MPEG-4 bit rate for image distribution.</small>					
<small>1-1 Folders on the network allotted to the drive can be specified for saving data. 1-2 When a network drive is specified as a folder for saving data, the amount of data flowing over the network increases. This may remarkably degrade the operating performance for watching or recording camera images, watching previously recorded images, etc., and may also result in errors. It is recommended that a folder on a local disk be specified for saving data. 2 MPEG-4 camera using an MPEG-4 connection: 640 x 480, 320 x 240, 192 x 144 MPEG-4 camera using a JPEG connection: 1280 x 1024, 640 x 480, 320 x 240, 192 x 144 3 The detection level varies depending on the camera resolution, image quality setting, subject conditions, network conditions, etc. 4 This specification is required for using all network cameras to simultaneously record at a resolution of 320 x 240 in standard image quality, while monitoring with all registered cameras at a frame rate of 2 fps.</small>					

# Glossary

**Adaptive contrast enhancement** The camera automatically corrects the image when one part of it becomes extremely dark. It also compensates only for the dark part, so the entire image is adjusted to the proper brightness for easy viewing from corner to corner.

**Bandwidth** How much stuff you can send through a connection. Usually measured in bits-per-second. A full page of English text is about 16,000 bits. A fast modem can move about 57,000 bits in one second. Full-motion full-screen video would require roughly 10,000,000 bits-per-second, depending on compression.

**bps** (Bits-Per-Second) A measurement of how fast data is moved from one place to another. A 56K modem can move about 57,000 bits per second.

**CCD** (Charge Coupled Device) A chip which can be used as an image sensor. Generally higher quality sensor than CMOS capable of capturing images in lower light levels.

**CMOS** A low power image sensor chip.

**DDNS** (Dynamic Domain Name Server) A server which assigns a named URL to track to a dynamic IP Address.

**DHCP Server** A server on a network or the Internet which assigns IP address information based on predetermined rules.

**DNS** (Domain Name System) The Domain Name System is the system that translates Internet domain names into IP numbers. A "DNS Server" is a server that performs this kind of translation.

**Domain Name** The unique name that identifies an Internet site. Domain Names always have 2 or more parts, separated by dots. The part on the left is the most specific, and the part on the right is the most general. A given machine may have more than one Domain Name but a given Domain Name points to only one machine. For example, the domain names: matisse.net mail.matisse.net workshop.matisse.net can all refer to the same machine, but each domain name can refer to no more than one machine. Usually, all of the machines on a given Network will have the same thing as the right-hand portion of their Domain Names (matisse.net in the examples above). It is also possible for a Domain Name to exist but not be connected to an actual machine. This is often done so that a group or business can have an Internet e-mail address without having to establish a real Internet site. In these cases, some real Internet machine must handle the mail on behalf of the listed Domain Name.

**DSL** (Digital Subscriber Line) A method for moving data over regular phone lines. A DSL circuit is much faster than a regular phone connection, and the wires coming into the subscriber's premises are the same (copper) wires used for regular phone service. A DSL circuit must be configured to connect two specific locations, similar to a leased line (however a DSL circuit is not a leased line). A common configuration of DSL allows downloads at speeds of up to 1.544 megabits (not megabytes) per second, and uploads at speeds of 128 kilobits per second. This arrangement is called ADSL: Asymmetric Digital Subscriber Line. Another common configuration is symmetrical: 384 Kilobits per second in both directions. DSL is now a popular alternative to Leased Lines and ISDN, being faster than ISDN and less costly than traditional Leased Lines.

**Dynamic IP Address** An IP address assigned by a DHCP server or ISP to a device connected to the network or Internet. In order to find a device on the Internet, typically a static IP address or a DNS domain name (such as http://viewnetcam.com) is required.

**Ethernet** A very common method of networking computers in a LAN. There is more than one type of Ethernet. By 2001 the standard type was "100-BASE" which can handle up to about 100,000,000 bits-per-second and can be used with almost any kind of computer.

**Fire Wall** A combination of hardware and software that separates a Network into two or more parts for security purposes.

**Full screen display** The system supports the full-screen display of monitor images. Even the smallest details can easily be monitored on this impressively large display screen.

**Global IP Address** (Also known as WAN IP address) The IP address which refers to a device directly connected to the Internet. This is assigned by an Internet Service Provider.

**HTTP** (HyperText Transfer Protocol) The protocol for moving hypertext files across the Internet. Requires a HTTP client program on one end, and an HTTP server program on the other end. HTTP is the most important protocol used in the World Wide Web (WWW).

**Intranet** A private network inside a company or organization that uses the same kinds of software that you would find on the public Internet, but that is only for internal use. Compare with extranet.

**IP Address** (Internet Protocol Number) Sometimes called a dotted quad. A unique number consisting of 4 parts separated by dots, e.g. 165.113.245.2 Every machine that is on the Internet has a unique IP address. If a machine does not have an IP address, it is not really on the Internet. Many machines (especially servers) also have one or more Domain Names that are easier for people to remember.

**IPv4** (Internet Protocol, version 4) The most widely used version of the Internet Protocol (the "IP" part of TCP/IP) IPv4 allows for a theoretical maximum of approximately four billion IP Numbers (technically 2<sup>32</sup>), but the actual number is far less due to inefficiencies in the way blocks of numbers are handled by networks. The gradual adoption of IPv6 will solve this problem.

**ISP** (Internet Service Provider) An institution that provides access to the Internet in some form, usually for money.

**JPEG** (Joint Photographic Experts Group) JPEG is most commonly mentioned as a format for image files. JPEG format is preferred to the GIF format for photographic images as opposed to line art or simple logo art.

**LAN** (Local Area Network) A computer network limited to the immediate area, usually the same building or floor of a building.

**Local IP Address** The IP Address of a device on the LAN side of the Router.

**Mega-pixel** The camera is capable of capturing high quality photographic images. These monitored images can then easily be printed out for various uses.

**Network** Any time you connect 2 or more computers together so that they can share resources, you have a computer network.

**Node** Any single computer connected to a network.

**Pan/Tilt** The ability for the camera to physically move left/right (pan) and up/down (tilt) by remote control.

**Ping** To check if a server is running. From the sound that a sonar systems makes in movies, you know, when they are searching for a submarine.

**PLC** Power Line Communication.

**Port** On the Internet port often refers to a number that is part of a URL, appearing after a colon (:) right after the domain name. Every service on an Internet server listens on a particular port number on that server. Most services have standard port numbers, e.g. Web servers normally listen on port 80. Services can also listen on non-standard ports, in which case the port number must be specified in a URL when accessing the server, so you might see a URL of the form: http://p.viewnetcam.com:60001 This shows a network camera running on a non-standard port (the standard port for a web server is 80).

**Port Forwarding** (Also known as Virtual Server) The router configuration which allows specific Internet requests to penetrate the firewall enabling access to a server running on the LAN.

**Power Over Ethernet** (PoE) A standard which allows power and data to be carried on the same Cat5 wire.

**Preset sequence** The camera can be programmed to automatically aim itself in certain directions according to a predetermined schedule. This allows for thorough monitoring of places of particular concern or interest.

**Recording audio simultaneously with SD Memory Card** The SD Memory Card can record audio as well as video data for an even higher level of monitoring quality. Video monitoring with sound enhances security by providing additional information that images cannot convey.

In the HCM5xx series, SD Memory Cards can be swapped even without a PC, making it possible to use a single camera unit as a monitoring device in places where a power source is available, but installation of network or other cables is problematic.

**Router** A special-purpose computer (or software package) that handles the connection between 2 or more Packet-Switched networks. Routers spend all their time looking at the source and destination addresses of the packets passing through them and deciding which route to send them on.

**Server** A computer, or a software package, that provides a specific kind of service to client software running on other computers. The term can refer to a particular piece of software, such as a WWW server, or to the machine on which the software is running, e.g. "Our mail server is down today, that's why e-mail isn't getting out." A single server machine can (and often does) have several different server software packages running on it, thus providing many different servers to clients on the network. Sometimes server software is designed so that additional capabilities can be added to the main program by adding small programs known as servlets.

**Simultaneous MPEG-4 and JPEG** The cameras simultaneously send three types of MPEG4 (VGA, QVGA, SCIF) data and nine types of MotionJPEG (VGA, QVGA, SCIF x favor motion, standard, favor clarity) data so you can choose the most suitable format according to the Internet connection and your viewing needs. MPEG4 is recommended for viewing smooth motion images, and MJPEG is recommended for recording higher quality images.

**Static IP Address** A permanent IP address assigned to a device on a Network. In order find a device on the Internet, it is usually necessary to know the IP address. A static address, since permanent, makes this easier.

**TCP/IP** (Transmission Control Protocol/Internet Protocol) This is the suite of protocols that defines the Internet. Originally designed for the UNIX operating system, TCP/IP software is now included with every major kind of computer operating system. To be truly on the Internet, your computer must have TCP/IP software.

**UDP** (User Datagram Protocol) One of the protocols for data transfer that is part of the TCP/IP suite of protocols. UDP is a "stateless" protocol in that UDP makes no provision for acknowledgement of packets received, and is typically used for audio and video streaming.

**UPnP** A standard protocol for automatically configuring port forwarding.

**URL** (Uniform Resource Locator) The term URL is basically synonymous with URI. URI has replaced URL in technical specifications.

**VPN** (Virtual Private Network) Usually refers to a network in which some of the parts are connected using the public Internet, but the data sent across the Internet is encrypted, so the entire network is "virtually" private.

**WAN** (Wide Area Network) A network that covers an area larger than a single building or campus.

**Wi-Fi** (Wireless Fidelity) A popular term for a form of wireless data communication, basically Wi-Fi is "Wireless Ethernet".

- 1 – An active broadband connection and a router are required at camera location. We cannot guarantee that your Internet connection will always be available.
- 2 – Browser must be Internet Explorer 6.0 or later. Video display requires optional BL-WV10A TV Adaptor. Compatible cell phones and PDAs must be able to display JPEG images and HTML or XHTML web pages. Additional fee-based cellular services may be required.
- 3 – A free service provided by Panasonic. For details, refer to viewnetcam.com service on page 18.
- 4 – A feature designed to simplify the setup of computers and devices connected to the same network.
- 5 – A unique IP address that is used by only one device connected to the Internet.
- 6 – If another user has selected the name you would like, the name will be unavailable.
- 7 – The image tends to blur more than that in standard mode when viewing a moving subject in low light or when using the pan, tilt, or zoom function. Some subjects may require additional time for focusing with the auto focus function. When viewing a dark subject in Color Night View mode, spots of white or colored light may appear in the image. This is a natural characteristic of the CCD image sensor, and does not indicate a malfunction.
- 8 – At 320 x 240 or 160 x 120 resolution.
- 9 – BB-HCM581A, BB-HCM580A, BB-HCM481A, BB-HCE381A and KX-HCM280A only.
- 10 – The sensor detects heat by picking up the infrared light naturally emitted from people and animals. Certain thermal environments, sunlight, air conditioners, heaters, etc., may cause detection errors or decrease the range of the sensor.
- 11 – The time needed to send images by e-mail from the camera will vary depending on the condition of the network. When setting the camera to send e-mail images to a cell phone, we recommend setting a longer interval time. If the interval is set too short, more images will be e-mailed to your cell phone and therefore your cell phone charges may be higher.
- 12 – For details, see the buffered images function on page 20.
- 13 – The sensor's detection history can also be e-mailed to you once each day at a preset time. POP before SMTP authentication and SMTP authentication (PLAIN and LOGIN) are supported. SMTP authentication (CRAM-MD5) is not supported.
- 14 – To connect using IPv6, it is necessary to subscribe to the ISP's "IPv4/IPv6 Dual-Stack" or "IPv6 over IPv4 Tunneling" service. The camera will not work in an IPv6-only network. For more information on IPv6, visit <http://www.ipv6.org/>.
- 15 – The world's first network cameras of their kind (as of August 2004), featuring an originally developed IPv6-ready protocol stack.
- 16 – IPsec is an IP security protocol for dat encryption standardized by IETF, an international community for standardizing Internet specifications.
- 17 – POP before SMTP authentication and SMTP authentication (PLAIN and LOGIN) are supported. SMTP authentication (CRAM-MD5) is not supported.
- 18 – To use this function, one of the cameras must be registered with the addresses of all other cameras in advance. The 640 x 480 resolution cannot be used with the multi-screen display. Switching from the moving image mode to the still image mode reduces the load on the network. The still image mode is recommended when the Internet connection speed is 100 kbps or lower (guideline speed). This function can be used only with a PC. It cannot be used with a cell phone.
- 19 – Models with audio capability: BB-HCM581A, BB-HCM515A, BB-HCM531A, BB-HCM511A, BB-HCE481A, KX-HCM381A, BB-HCM331A and BB-HCM311A.
- 20 – For details, refer to BB-HNP11A on page 33.
- 21 – Recording is possible for only one camera. To record images from multiple cameras, use the BB-HNP11A described on page 33.
- 22 – Models that support JPEG only.
- 23 – At 320 x 240 resolution and standard quality.
- 24 – Download viewer software from the Panasonic Network Camera support website at <http://panasonic.co.jp/pcc/products/en/netwkcam/> and install it on your PC.
- 25 – The audio feature does not work on cell phones. The talk button and listen button cannot be used simultaneously. Depending on data traffic and the network environment, the audio may be delayed or may break up.
- 26 – A separately purchased mic must be connected to the BB-HCM381A, BB-HCE481A, BB-HCM581A.
- 27 – A mini video cable (with 3.5-mm mini plug) is required. The camera cannot be controlled with analog video output. The video image displays poorly in color night view mode.
- 28 – Applicable models: BL-C10A/C30A.
- 29 – Recording onto an SD Memory Card is not possible in Sequential Display mode.
- 30 – With some Internet service providers, e-mail transmission of images or messages may be blocked by the mail server authentication system (SMTP authentication, etc.) in use.
- 31 – This feature not available when viewing images on a cell phone.
- 32 – The SD Memory Card is sold separately. The camera supports 64MB, 128MB, 256MB, 512MB and 1GB, 2GB SD Memory Cards. The BB-HCS301A must be upgraded to give it a 2-GB capacity.
- 33 – 320 x 240 resolution and standard quality.
- 34 – Note that buffered images are deleted when the power to the camera is turned off.
- 35 – This product can be used only when IPv4 connection is used.  
To use the voice and image recording program, it is necessary to complete the user registration over the Internet and obtain a password. Without the user registration, this function is restricted.  
Program installation requires 20 MB of hard disk space.  
The number of camera units allowed for simultaneous recording varies depending on the PC performance.  
Use of the program may cause voice transmission to be interrupted or moving images to stop in some cases, depending on the PC's performance and the network environment.  
The detection sensitivity level of the motion detection recording function varies depending on the camera resolution, image quality setting, subject condition, network conditions and other factors.  
If the free space on the hard disk runs short, the system may become unstable. Be sure to allow sufficient free space (100 MB or more).
- 36 – This is the theoretical maximum data transmission speed of the HD-PLC standard. The actual maximum data transmission speed is about 70 Mbps. Results may vary depending on electrical conditions, network environment, and other factors. See the specifications for more information.
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