

Panasonic Network Camera Technical Notes

Ver. 2.0

3 April, 2003

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History of Revisions

Date	Revision	Revised:
2002.9.26	1.00	First English Revision
2003.4.3	2.00	Add parameter for HCM280. Add New CGI command

1. NOTICE

The purpose of this document is to help users who need to include live images from Panasonic Network Cameras on their web pages, or control Panasonic Network Cameras using CGI commands. This document is provided for use by people who are familiar with HTML. In no event Panasonic shall make any kind of warranty or representation and be responsible for any expenses, damages or loss incurred by using this information.

The information in this document is written for use with Panasonic Network Cameras KX-HCM8, KX-HCM10, KX-HCM230, KX-HCM250, KX-HCM270, and KX-HCM280.

2. BASIC INFORMATION

Panasonic Network Cameras KX-HCM10 and KX-HCM8 support a maximum of 10 simultaneous accesses.

Panasonic Network Cameras KX-HCM230, KX-HCM250, KX-HCM270, and KX-HCM280 support a maximum of 30 simultaneous accesses.

If you need to provide for more simultaneous accesses, you will need to setup an external FTP server to receive images from the Network Camera.

The information may be changed or updated without notice.

3. COMMAND LIST

To interact with the camera, CGI commands are very useful. The basic format for a CGI command is <http://IPADDRESS/ CGIcommand ? Option1 = A & Option2 = B> of course with no spaces.

3.1 IMAGE VIEWING

One of the CGI commands “ImageViewer” enables you to embed LIVE or STILL images. You can also specify the resolution, Quality, refresh interval time and showing Title of the images.

ImageViewer

Parameters	Settings
Mode	Motion (Live Image), Refresh (Still Image)
Resolution	160x120, 320x240, 640x480
Quality	Motion (higher image compression – more frames per second) Standard Clarity (lower image compression – better image, but fewer frames)
Interval	1-9999999 (Image Refresh Rate in Seconds.)
Title	1 (show the Title), 0 (do not show the Title) *1

*1 A title is displayed on the upside of the frame which displays a image. This parameter is available at the firmware after a version 1.61. The newest firmware is downloadable from the following URL.

<http://panasonic.co.jp/pcc/products/en/netwkcaml/>

Example to show Live Image:

<http:// IP ADDRESS/ImageViewer?Mode=Motion&Resolution=320x240&Quality=Standard&Interval=10&Title=1>

motion image, resolution is 320x240, and quality is medium compression image (when using motion images, Interval is meaningless)

*Click to Center Function is available

Click to Center: When you click any certain point on the Camera screen, that point is centered on the screen.

*You need two frames when you use this command in your Web page. These are:

- ImageViewer frame
- Message frame (Dummy frame for showing message. Size can be set “0”)

If you do not set frame, a new window would be appear when you click the screen.

3.2 CAMERA CONTROL

The CGI Command “nphControlCamera” is to be used for Camera Control such as PAN/TILT/ZOOM, PAN SCAN, Auto Focus and BRIGHTNESS. KX-HCM8 can be set with BRIGHTNESS only. ZOOM function and Auto Focus function is used for KX-HCM280 only.

nphControlCamera

Parameters	Settings
Direction	PanLeft (move LEFT) PanRight (move RIGHT) TiltUp (Tilting UP) TiltDown (Tilting Down) Scan (= PanScan) *3 PanScan(sweep full left to right and return to original position) *1 *3 TiltScan(sweep full up to down and return to original position) *1 HomePosition *1 Preset *1 *2 Darker (DARKER Image), DefaultBrightness (STANDARD BRIGHTNESS), Brighter (BRIGHTER Image) ZoomTele (Zoom in) ZoomWide (Zoom out) FocusAuto (AutoFocus) *4

*1 In order for you to use these functions, it is necessary to update the firmware of KX-HCM10 to 1.40 or later. Latest firmware can be downloaded from our Network Camera support site (<http://panasonic.co.jp/pcc/products/en/netwkcaml/>).

*2 To use Preset, it is necessary to choose a direction using the parameter shown below.

Parameters	Settings
PresetOperation	Move (Move to indicated preset position)
Data	1 (Indicate Preset position 1) 2 (Indicate Preset position 2) 3 (Indicate Preset position 3) 4 (Indicate Preset position 4) 5 (Indicate Preset position 5) 6 (Indicate Preset position 6) 7 (Indicate Preset position 7) 8 (Indicate Preset position 8)

*3 Panscan and Scan have same function.

*4 When adjusting a focus manually, it is necessary to use the parameter shown below.

Parameter	Setting
Direction	FocusNear (Bring a focus close) FocusFar (Keep away a focus)
Dist	1 (Amount of movement : small) 2 (Amount of movement : Large)

Example (Panning Left):

<http:// IPADDRESS /nphControlCamera?Direction=PanLeft>

Example (Tilt Scan):

<http:// IPADDRESS /nphControlCamera?Direction=TiltScan>

Example (Home Position):

<http:// IPADDRESS /nphControlCamera?Direction=HomePosition>

Example (Move to Preset Position 1):

<http:// IPADDRESS /nphControlCamera?Direction=Preset&PresetOperation=Move&Data=1>

Example (Darker Image):

<http:// IPADDRESS /nphControlCamera?Direction=Darker>

Example (Adjust focus manually):

<http:// IPADDRESS /nphControlCamera?Direction=FocusNear&Dist=1>

3.3 Motion image Getting

The CGI Command "nphMotionJpeg" is to be used for Getting motion image as MIME formatted data. You can record these images. You can also view these images using acceptable viewer like Netscape4.7..

*Note:

Please take care to disk space when you record images in your PC. If the space of your PC becomes not enough, your PC will become unstable or will be downed.

nphMotionJpeg

Parameters	Settings
Resolution	160x120, 320x240, 640x480
Quality	Motion (Favor motion) Standard Clarity (Favor clarity)

Example

<The method of image getting>

You need Socket programming technique.

(1) Start:

Open the socket

(2) Sending message:

Send following message to HTTP port of the Network camera.

```
"GET
http://xxx.xxx.xxx.xxx:yy/nphMotionJpeg?Resolution=320x240&Quality=Standard
HTTP/1.0\r\n"
```

xxx.xxx.xxx.xxx : IP address of domain name

yy : HTTP port No. (default :80)

(3) Receiving data

```
"HTTP/1.0 200 OK\r\n"
"Content-Type: multipart/x-mixed-replace; boundary=--myboundary..."
"...--myboundary.Content-type: image/jpeg..."
JPEG binary data No.1 ("FFD8.....FFD9")
"...--myboundary.Content-type: image/jpeg..."
JPEG binary data No.2 ("FFD8.....FFD9")
:
:
"...--myboundary.Content-type: image/jpeg..."
JPEGbinary data No.N("FFD8.....FFD9")
```

Note:

From FFD8 to FFD9 is the JPEG data for one frame.

FFD8 is after "Content-type: ...image/jpeg".

FFD9 is just before "--myboundary".

(3) Viewing, Recording, etc...

You can record and view images using extracted JPEG data.

(4) End

Close(Disconnect) the socket.

3.4 Still image Getting

The CGI Command “SnapshotJPEG” is to be used for Getting still image.

SnapshotJPEG

Parameters	Settings
Resolution	160x120, 320x240, 640x480
Quality	Motion (Favor motion) Standard Clarity (Favor clarity)

Example

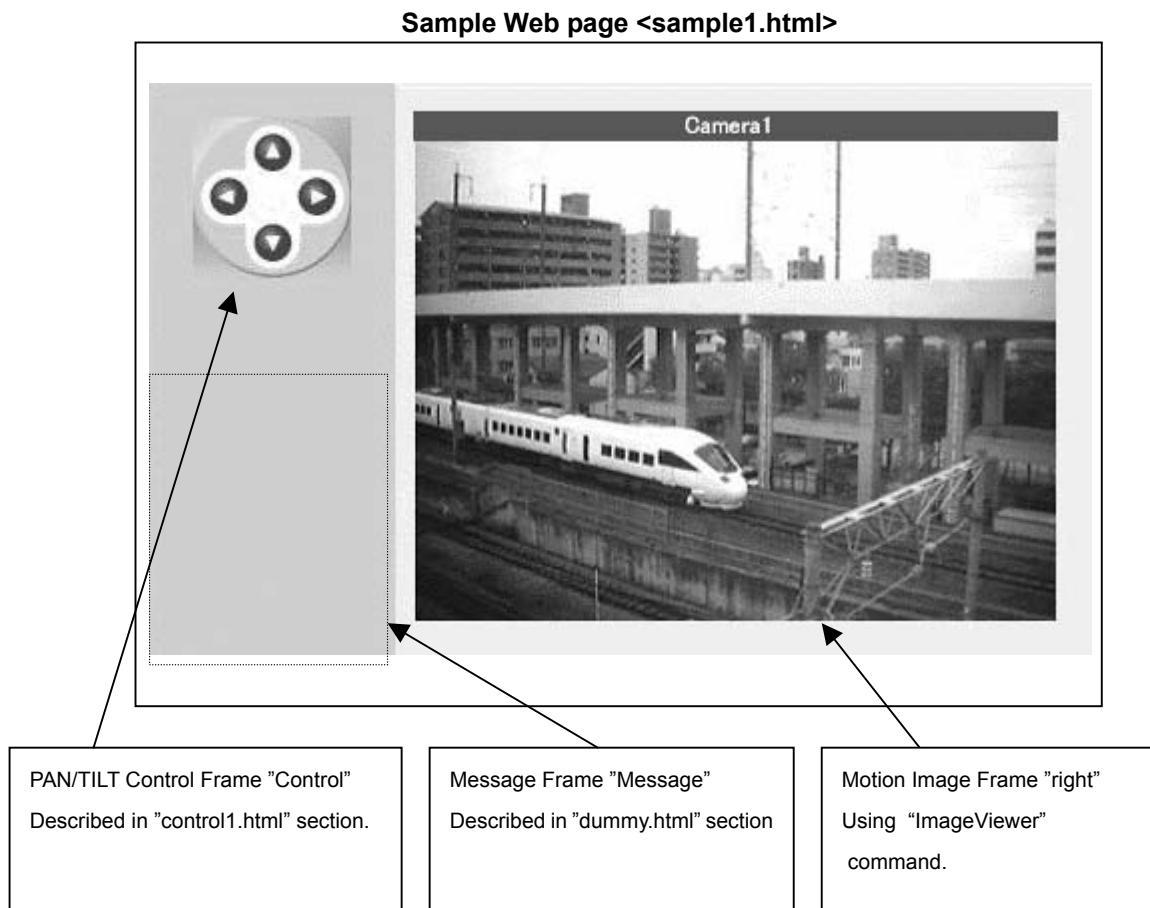
SnapshotJPEG?Resolution=320x240&Quality=Standard

4. SAMPLE Web Page

The following section shows an example of a sample web site with a Live image from a Panasonic Network Camera. The Sample Web Page Consists of 3 frames: the Live Image frame at "right", Camera "Control" Frame at upper left and "Message" frame at lower left hand side to display messages from the Camera.

For the image of Camera Control Pad, "pad.gif" is used on this page. This file can be obtained from the Panasonic Network Camera screen by right clicking on the image in a web browser, and choosing "save image".

The first time you access the Web page, you will be asked to download the ActiveX component from the Panasonic Network Camera.



Source Code of Sample Web page <sample1.html>

```
<!-- This is Sample Code. Panasonic will not be held responsible for damages or loss incurred by using this
information. -->
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.0 Frameset//EN">
<!-- sample1.html PAN/TILT Control Pad and Live Image Frame-->
<HTML>
<HEAD>
<TITLE>Sample1</TITLE>
</HEAD>
<FRAMESET COLS="123,*" FRAMEBORDER=0 BORDER=0                FRAMESPACING=0>
  <FRAMESET ROWS="175,*">
    <!--Upper Left: PAN/TILT Control Pad Display Frame -->
    <FRAME BGCOLOR="#C4CEEF" SCROLLING=no                SRC="frame/control1.html" NAME="Control">
    <!--Lower Left: Dummy frame to respond to PAN/TILT Control -->
    <!-- Note: "Message" frame is used to show feedback from "frame/control1.html"-->
    <FRAME BGCOLOR="#C4CEEF" SCROLLING=no                SRC="frame/dummy.html" NAME="Message">
  </FRAMESET>
  <!-- RIGHT: Live Image Frame -->
  <!--Type Camera's URL address in the field to replace "xx.xx.xx.xxx"-->
  <!--An Error Message will be displayed if the wrong URL is typed in for "xx.xx.xx.xxx". -->
  <FRAME SRC="http://xx.xx.xx.xxx/ImageViewer?Mode=Motion&Resolution=320x240&Quality=Standard&Interval=10" NAME="right">
</NOFRAMES>
  <BODY>
    <!--Message for a viewer using an incompatible browser -->
    Please Use Appropriate Browser to View the Frame
  </BODY>
</NOFRAMES>
</FRAMESET>
</HTML>
```

Source Code of Camera Control Pad <control1.html>

```
<! This is Sample Code. Panasonic will not be held responsible for damages or loss incurred by using this
information. >
<!-- PAN/TILT Control pad Frame control1.html -->
<html>
<head>
<title>
Control1 Frame
</title>
</head>
<body BGCOLOR="#C4CEEF">
<center>
<!-- Display PAN/TILT Control Pad-->
<table><tr><TD BGCOLOR="#C4CEEF" ALIGN=center></TD></tr></table>
<!-- Clickable Image Map for PAN/TILT -->
<!--Type Camera's URL address in the field to replace "xx.xx.xx.xxx"-->
<map name="pad">
<area shape="circle" coords="40,18 10" href="http://xx.xx.xx.xxx/nphControlCamera?Direction=TiltUp" TARGET="Message"
ALT="Tilt Up">
<area shape="circle" coords="18,40 10" href="http://xx.xx.xx.xxx/nphControlCamera?Direction=PanLeft" TARGET="Message"
ALT="Pan Left">
<area shape="circle" coords="62,40 10" href="http://xx.xx.xx.xxx/nphControlCamera?Direction=PanRight" TARGET="Message"
ALT="Pan Right">
<area shape="circle" coords="40,62 10" href="http://xx.xx.xx.xxx/nphControlCamera?Direction=TiltDown" TARGET="Message"
ALT="Tilt Down">
</map>
</center>
</body>
</html>
```

Source Code of Message Frame <dummy.html>

```
<! This is Sample Code. Panasonic will not be held responsible for damages or loss incurred by using this
information. >
<html>
<head>
<title>
Dummy Frame
</title>
</head>
<body BGCOLOR="#C4CEEF">
</body>
```