

**VMD information Interface Specifications**  
**Network Camera**

VER. 1.02

System Solutions Company  
Panasonic Corporation

## Revise Record

| VER.          | Date         | Item no.                | Comment   | Revise trigger            |
|---------------|--------------|-------------------------|---|---------------------------|
| 0.01<br>be-ta | 31 Aug.2007  |                         | First release   | -                         |
| 1.00          | 30 May. 2008 | 1                       | The parameter 'vmdinfo" was deleted from the command which is 'Request MPEG-4 video transmission'                           | Official firmware release |
|               |              | 1                       | Adds cgi command which change the RTSP mode   |                           |
|               |              | 2.2.1                   | The 'ID' in VMD information was changed to 0x0011   |                           |
|               |              | 2.2.2<br>2.2.3<br>2.2.4 | Adds new header extensions in Mpeg-4 transmission –<br>The new headers are 'Time information' and 'Frame time information'. |                           |
| 1.01          | 23 Jun.2008  | 2.2.1                   | Adds compatibility table of the VMD information parameter.  |                           |
| 1.02          | 27 Oct.2008  | -                       | Change the company name to Panasonic  |                           |

# 1. Command

Follow table is describe the CGI about "Request MPEG-4 video transmission

Method: GET

| CGI commands                      | URL                             | Parameter name | Parameter value        | Comments  |
|-----------------------------------|---------------------------------|----------------|------------------------|---|
| Request MPEG-4 video transmission | /cgi-bin/mpeg4 (access level 3) | my_port        | numerical value        | Receive port no. of mpeg-4 (Even number only)   |
|                                   |                                 | connect        | start<br><br>stop      | Transmit video stream transmission (MPEG-4)<br>start : start video stream transmission<br>stop : stop video stream transmission (for user ID which has already started stream transmission)<br><br>*The value 'stop' is effective only unicast setting. |
|                                   |                                 | protocol       | rtp                    | rtp (fixed)   |
|                                   |                                 | UID            | numerical value        | User ID(acquired UID)   |
|                                   |                                 | page           | Random numerical value | Dummy to make cash invalid(it is possible to omit)<br>*To acquire latest user ID and camera information, random numerical value is given to prevent to use cash by browser.   |
|                                   |                                 | vmdinfo        | add,<br>none           | add: Add VMD information<br>none: No VMD information<br><br>*it is possible to omit   |

Ex) Start to transmit MPEG-4 video stream (in case that port no. 37004 and user ID is 263, random page parameter is 20040830203157)

[http://192.168.0.10/cgi-bin/mpeg4?my\\_port=37004&connect=start&protocol=rtp&UID=263&vmdinfo=add&page=20040830203157](http://192.168.0.10/cgi-bin/mpeg4?my_port=37004&connect=start&protocol=rtp&UID=263&vmdinfo=add&page=20040830203157)

Follow table is describe the CGI about "Request MPEG-4 video transmission

To request vmd information over MPEG-4 stream, it needs to call the following setup cgi before starts Mpeg-4.

Method: POST, GET

| CGI command                                      | URL                                      | Parameter name | Parameter value | Comments  |
|--|--|----------------|-----------------|---|
| Setup for additional information of image stream | /cgi-bin/set_vmdplay<br>(access level 1) | vmdinfo        | 0, 1            | <p>additional information</p> <p>0: none(*1)</p> <p>1: add</p> <p>default: 0</p> <p>(*1)When this value sets to "0", the additional information is as follows</p> <ul style="list-style-type: none"> <li>- MPEG-4 RTSP mode: Both vmd and time information do not add.</li> <li>- MPEG-4 cgi mode: Only time information is added.</li> <li>- JPEG stream: Only time information is added.</li> </ul> <p># This command is described in the chapter 3.3.39 of the CGI document.</p> <p># About the command to change mode is described in chapter 3.3.38 of the CGI document.</p> |

Ex) Add additional information

[http://192.168.0.10/cgi-bin/set\\_vmdplay?vmdinfo=1](http://192.168.0.10/cgi-bin/set_vmdplay?vmdinfo=1)

## 2. Format

### 2.1. RTP header

The data format of MPEG-4 RTP header is described as follows. The VMD information is contained in the RTP header **extensions**. The packet containing the vmd information is transmitted five times a second.

MPEG-4 RTP header

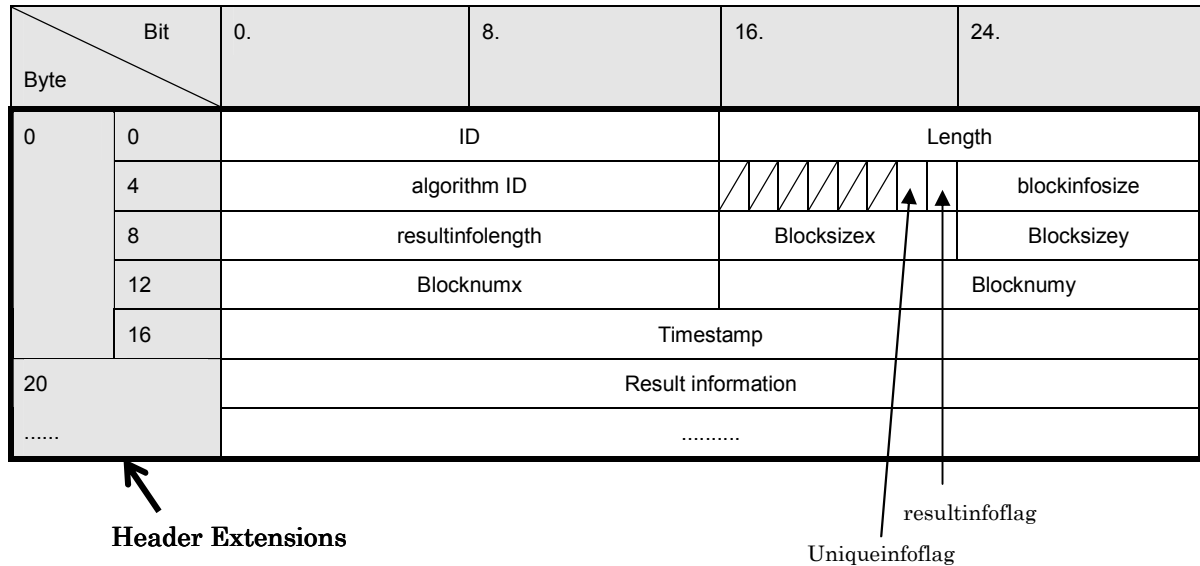
| Byte | 0.                                       |   |   |    | 8. |    | 16.              | 24. |
|------|--|---|---|----|----|----|------------------|-----|
|      | 2  | 1 | 1 | 4  | 1  | 7  | 8                | 8   |
| 0    | V  | P | X | CC | M  | PT | Sequence number  |     |
| 4    | Timestamp                                |   |   |    |    |    |                  |     |
| 8    | SSRC (Synchronization Source Identifier) |   |   |    |    |    |                  |     |
| 12   | Defined by profile                       |   |   |    |    |    | Extension length |     |
| 16   | Additional Information (1)               |   |   |    |    |    |                  |     |
|      | .....                                    |   |   |    |    |    |                  |     |
|      | Additional Information (n)               |   |   |    |    |    |                  |     |

← Header Extensions

## 2.2. Header extensions

### 2.2.1. VMD information

The format of the header extensions about VMD information was described as follows.



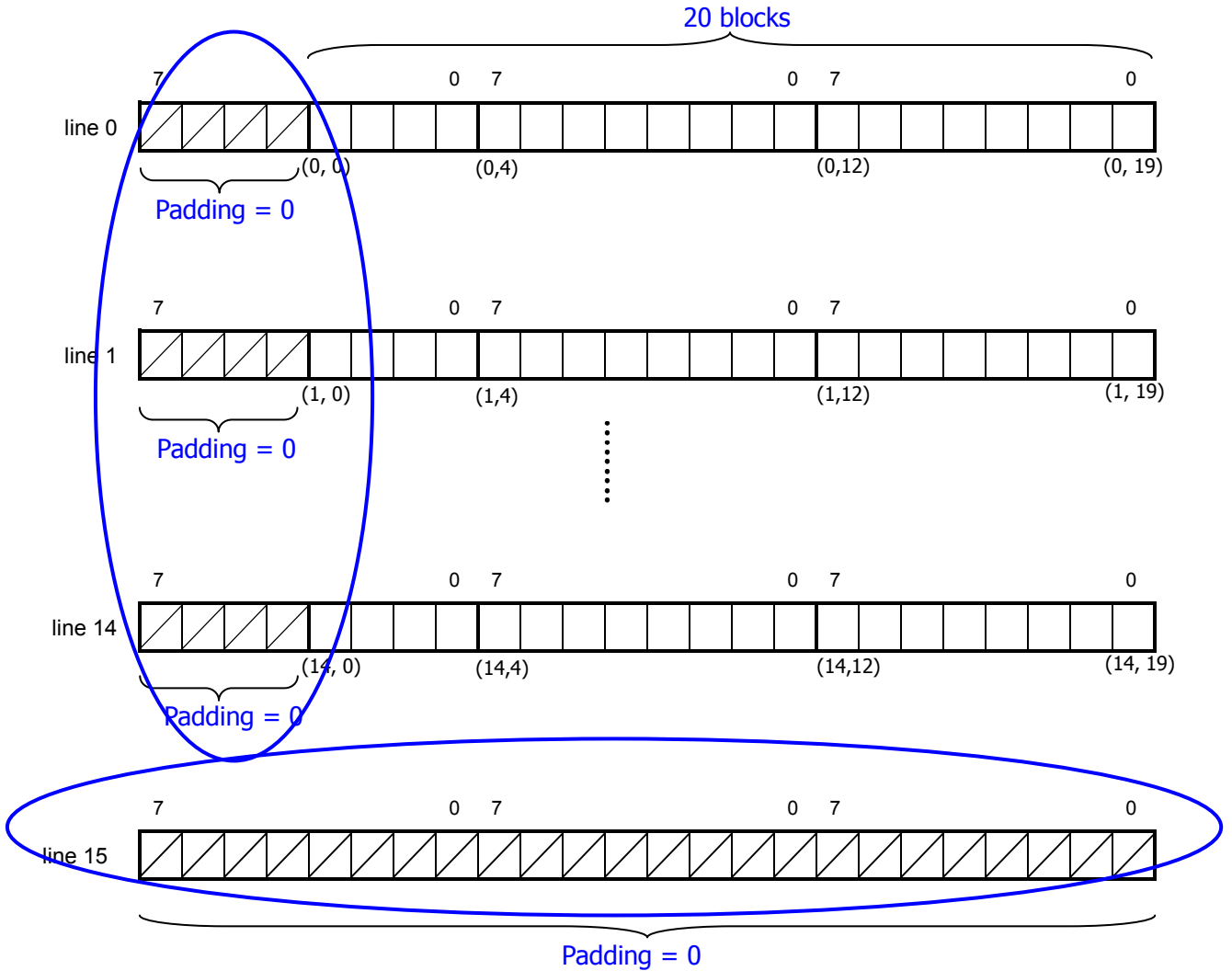
#### Parameter values

| Parameter name        | length(Bit) | Values and comments  |
|-----------------------|-------------|--|
| ID                    | 16          | 0x0010 (fixed)   |
| Length                | 16          | Total Data length ( include ID and Length) (Unit of byte)  |
| algorithmID(*)        | 16          | Algorithm ID   |
| uniqueinfoflag(*)     | 1           | 0 (fix)  |
| blockinfosize(*)      | 8           | 1 (fix)  |
| resultinfoflength(*)  | 16          | Length of the Result information (Unit of byte)  |
| BlocksizeX(*)         | 8           | Block Size (Horizontal)  |
| BlocksizeY(*)         | 8           | Block Size (Vertical)  |
| BlocknumX(*)          | 16          | Number of blocks (Horizontal)  |
| BlocknumY(*)          | 16          | Number of blocks (Vertical)  |
| Timestamp(*)          | 32          | Capture time of image  |
| Result information(*) | Variable    | VMD information of every block.<br>0: the block without movement<br>1: the block with movement<br>· In every line, the left side is filled by the padding '0'.<br>· When the data length doesn't become every 4 byte, the tail of the data is filled by the padding '0'. |

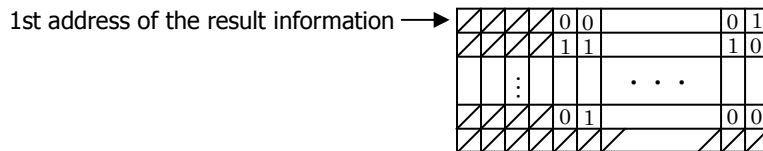
(\*) It exists when Extension is true.

Result information format is following.

Ex. Number of blocks: 20 x 15.



Follow is the example of the block information format



Compatibility table of the VMD information parameter

| Model number          | MPEG-4 setting | Block Size (Horizontal) | Block Size (Vertical) | Number of blocks (Horizontal) | Number of blocks (Vertical) |
|-----------------------|----------------|-------------------------|-----------------------|-------------------------------|-----------------------------|
| WV-NP244              | VGA            | 0x20                    | 0x20                  | 0x0014                        | 0x000f                      |
|                       | QVGA           | 0x10                    | 0x10                  | 0x0014                        | 0x000f                      |
| WV-NF282              | VGA            | 0x20                    | 0x20                  | 0x0014                        | 0x000f                      |
|                       | QVGA           | 0x10                    | 0x10                  | 0x0014                        | 0x000f                      |
| WV-NS202A             | VGA            | 0x20                    | 0x20                  | 0x0014                        | 0x000f                      |
|                       | QVGA           | 0x10                    | 0x10                  | 0x0014                        | 0x000f                      |
| WV-NW484              | VGA            | 0x20                    | 0x20                  | 0x0014                        | 0x000f                      |
|                       | QVGA           | 0x10                    | 0x10                  | 0x0014                        | 0x000f                      |
| WV-NS954,<br>WV-NW964 | VGA            | 0x20                    | 0x20                  | 0x0014                        | 0x000f                      |
|                       | QVGA           | 0x10                    | 0x10                  | 0x0014                        | 0x000f                      |
| WV-NF302,<br>WV-NP304 | VGA            | 0x28                    | 0x28                  | 0x0010                        | 0x000c                      |
|                       | QVGA           | 0x14                    | 0x14                  | 0x0010                        | 0x000c                      |



### 2.2.2. Time information (second)

The format of the header extensions about time information was described as follows.

| Byte \ Bit |   | 0.                | 8.           | 16.        | 24.        |
|------------|---|-------------------|--------------|------------|------------|
|            |   | ID                |              | Length     |            |
| 0          | 0 | ID                |              | Length     |            |
|            | 4 | Clock             |              |            |            |
|            | 8 | TimeZoneDirection | TimeZoneHour | BlocksizeX | BlocksizeY |

 **Header Extensions**

| Parameter name    | length(Bit) | Values and comments  |
|-------------------|-------------|--|
| ID                | 16          | 0x0011 (fixed)   |
| Length            | 16          | Total Data length ( include ID and Length) (Unit of byte)  |
| Clock             | 32          | The career second from 1970  |
| TimeZoneDirection | 8           | The direction of time zone<br>0x00 :negative vales<br>0x01 :positive value   |
| TimeZoneHour      | 8           | Time zone (hour)<br>0x00: 0hours, 0x01: 1hours, 0x02: 2hours, 0x03: 3hours<br>0x04: 4hours, 0x05: 5hours, 0x06: 6hours, 0x07: 7hours<br>0x08: 8hours, 0x09: 9hours, 0x0a: 10hours, 0x0b: 11hours<br>0x0c: 12hours, 0x0d: 13hours, 0x0e: 14hours, 0x0f: 15hours<br>0x10: 16hours, 0x11: 17hours, 0x12: 18hours, 0x13: 19hours<br>0x14: 20hours, 0x15: 21hours, 0x16: 22hours, 0x17: 23hours |
| TimeZoneMinute    | 8           | Time zone (minute)<br>0x00: 0minutes, 0x01: 1minutes, 0x02: 2minutes,<br>.....<br>0x39: 57minutes, 0x3a: 58minutes, 0x3b: :59minutes   |
| SummerTime        | 8           | 0x00 :Not daylight saving time<br>0x01 :Daylight saving time (Summer time)   |

### 2.2.3. Frame time information (millisecond)

The format of the header extensions about frame time information (millisecond) was described as follows.

|      |  |     |   |           |    |         |     |
|------|--|-----|---|-----------|----|---------|-----|
| Byte |  | Bit |   | 0.        | 8. | 16.     | 24. |
|      |  | 0   | 4 | ID        |    | Length  |     |
|      |  | 0   | 4 | FrameTime |    | Padding |     |

Header Extensions

| Parameter name | length(Bit) | Values and comments   |
|----------------|-------------|---|
| ID             | 16          | 0x0012 (fixed)  |
| Length         | 16          | Total Data length ( include ID and Length) (Unit of byte)   |
| FrameTime      | 16          | Millisecond (Unit of 10 milliseconds)<br>0x0000: 0 millisecond,      0x0001: 10 milliseconds,<br>.....<br>0x0062: 980 milliseconds,   0x0063: 990milliseconds |
| Padding        | 16          | 0x0000 (fixed)  |

### 2.2.4. Header specification (new)

1. Basically, it is based on a standard of "MPEG-4 Video Elementary Stream".
2. The encoding is based on "Simple Profile/Level 3". However, these cameras transmit stream in max frame rate: 30fps, in max bit rate: 4 Mbps and max resolution: VGA.
3. In the "MPEG-4 Video Elementary Stream", the stream may have following configuration information (Not essential). These cameras use VOS (Visual Object Sequence), VO (Visual Object), and VOL. (Video Object Layer)
4. IVOP (I-Frame VOP) always starts from VOL