



**IP Camera**

**VN-X35U/235U**

**API GUIDE**

This document provides a description of protocols and API of VN-X35/235.

**2009.2.3. JVC**

## Updates

Version	Date	Updates
1.00	2008/9/9	First release.
1.01	2009/2/3	VN-X235 is supported. API for mode of JPEG streaming is added.

## Custom Application Software Development Guide

VN-X35/235 can be used from a custom application software by utilizing the API and protocols for VN-X35/235. The following operations are possible.

- Getting JPEG from VN-X35/235.
- Getting MPEG-4 from VN-X35/235.
- Getting Alarm from VN-X35/235.
- Getting or changing VN-X35/235 settings.
- Sending Multicast from VN-X35/235.
- Getting Audio from VN-X35/235.
- Sending Audio to VN-X35/235.
- Customization of VN-X35/235's built-in viewer.

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This document describes APIs of VN-V25/26. Differences of VN-V25 and VN-V26 are as below.

Function	VN-X35	VN-X235
Low Lux	Easy Day&Night	B&W Mode (True Day&Night)

## 1. Getting JPEG from VN-X35/235 via HTTP

### 1.1. Basic Procedures

- 1) The client establishes a TCP connection to port number 80.
- 2) The client sends out API.

#### Example

```
GET /api/video?encode=jpeg&framerate=15&boundary=on HTTP/1.1<CRLF>
```

```
Host: 192.168.0.2<CRLF><CRLF>
```

**Note** <CRLF> denotes the line feed code (0x0D, 0x0A).

- 3) VN-X35/235 returns HTTP response.

#### Example of VN-X35:

```
HTTP/1.1 200 OK<CRLF>
```

```
Content-type: multipart/x-mixed-replace;boundary=--foo<CRLF>
```

```
Date: Tue, 02 Oct 2007 07:33:12 GMT<CRLF>
```

```
Server: JVC VN-X35 Network Camera<CRLF>
```

```
x-vnx35_response:
```

```
encode=jpeg&framerate=15&framesize=vga&boundary=on<CRLF><CRLF>
```

- 4) VN-X35/235 sends out JPEG data after returning HTTP response.

JPEG files in boundary structure will be sent out continuously after HTTP response. Each Content-Length is the size of each JPEG data. Using the size, reading the whole data of each JPEG is possible. HTTP Response and JPEG data sent out by VN-X35/235 are as follows.

HTTP Response
--foo<CRLF>
Content-Type: image/jpeg<CRLF>
Content-Length: 31614<CRLF><CRLF>
JPEG (No. 1) <CRLF>

--foo<CRLF> Content-Type: image/jpeg<CRLF> Content-Length: 32756<CRLF><CRLF>
JPEG (No. 2) <CRLF>
...

When ptz\_info=on is specified, boundary, digital pan/tilt/zoom information and JPEG file will be sent out continuously after HTTP Response as follows. Availability of digital pan/tilt/zoom depends on resolution pattern of JPEG and MPEG-4. Even if digital pan/tilt/zoom of JPEG is not available, digital pan/tilt/zoom information is added to JPEG stream. When digital pan/tilt/zoom of MPEG-4 is changed, updated digital pan/tilt/zoom information is added to JPEG stream. See "6.3 Encode" in this API guide for details of resolution pattern.

HTTP Response
boundary
pan/tilt/zoom information
JPEG (No. 1)
boundary
pan/tilt/zoom information
JPEG (No. 2)
...

Example of Boundary and pan/tilt/zoom information:

```
--foo<CRLF>
Content-Type: image/jpeg<CRLF>
Content-Length: 31200<CRLF>
X-Puls-Pan: 0<CRLF>
X-Puls-Tilt: 0<CRLF>
X-Posi-Zoom: 0<CRLF><CRLF>
```

Range of X-Puls-Pan is from 0 to 1278.

Range of X-Puls-Tilt is from 0 to 958.

Range of X-Posi-Zoom is from 0 to 9999. 0 corresponds to x0.25 and 9999 corresponds to x8.00.

Details of JPEG file format is explained later.

5) When the client wants to stop current JPEG transmission, the client disconnects TCP80.

VN-X35/235 does not accept further API via current TCP that is used for JPEG transmission. To change parameter, disconnect current TCP to stop the JPEG transmission, connect new TCP, and send API with new parameter.

## 1.2. API Format Structure

GET	space	API	space	HTTP/1.1	0x0D 0x0A
Host:	space	IP Address of VN-X35/235	0x0D 0x0A 0x0D 0x0A		

Unlike APIs for getting/setting parameters, Accept line is not required. Basic authentication is also not necessary.

### Example

```
GET /api/video?encode=jpeg&framerate=15&boundary=on HTTP/1.1<CRLF>  
Host: 192.168.0.2<CRLF><CRLF>
```

Parameter value is indicated using =. Do not insert space before and after =.

Example framerate=1

Parameters are segmented using &. Do not insert space before and after &.

Example encode=jpeg&framerate=30

There is no need to specify all parameters. Default values will be used for parameters that are not specified.

### Parameter Description

**encode** For specifying compression format. For example, specify as encode=jpeg to get JPEG.

**framerate** For specifying the frame rate. For example, specify as framerate=5 to get at 5 fps. Specify as framerate=-5 to get at 1/5 fps, or in other words, 1 frame in 5 seconds. Selection range is as follows.

15, 10, 7.5, 6, 5, 3, 2, 1, 0, -2, -3, -5, -10, -15, -20, -30, -60

When the parameter is specified as framerate=0, VN-X35/235 sends 1 frame of JPEG data, and disconnect the TCP connection.

**boundary** For specifying streaming structure. For example, specify as boundary=on to get Server Push structured JPEG. When framerate=0 is specified, Server Push is disabled even if boundary=on is specified.

**ptz\_info** To add digital pan/tilt/zoom information before JPEG data. Specify on or off. Even if ptz\_info=off, digital pan/tilt/zoom information is stored in JPEG comment segemnt.

## 1.3. Response

### When API with boundary=on is successfully received

VN-X35/235 will return 200 OK. The x-vnx35\_response or x-vnx235\_response line indicates actual parameter.

#### Example of VN-X35

```
HTTP/1.1 200 OK<CRLF>
Content-type: multipart/x-mixed-replace;boundary=--foo<CRLF>
Date: Tue, 02 Oct 2007 07:33:12 GMT<CRLF>
Server: JVC VN-X35 Network Camera<CRLF>
x-vnx35_response:
encode=jpeg&framerate=15&framesize=vga&boundary=on<CRLF><CRLF>
```

### When API with boundary=off, or API without boundary option is successfully received

VN-X35/235 will return 200 OK. Content-length indicates file size of first JPEG in bytes. The x-vnx35\_response or x-vnx235\_response line indicates actual parameter.

#### Example of VN-X35

```
HTTP/1.1 200 OK<CRLF>
Connection: close<CRLF>
Content-Length: 27616<CRLF>
Content-type: image/jpeg<CRLF>
Date: Tue, 02 Oct 2007 07:33:12 GMT<CRLF>
Server: JVC VN-X35 Network Camera<CRLF>
x-vnx35_response:
encode=jpeg&framerate=15&framesize=vga&boundary=off<CRLF><CRLF>
```

## 1.4. Restrictions

### Access restriction

VN-X35/235 has access restriction feature that enables to deny access from a specific IP address. If JPEG is requested from the IP address of access restriction, VN-X35/235 disconnects the TCP connection after API is sent.

## Restriction by maximum bitrate of VN-X35/235

The maximum bitrate of VN-X35/235 is about 20 Mbps.

## Number of clients

The maximum number of clients that can get JPEG stream depends on encode settings and requests from client. Refer the instruction manual for detailed information.

## 1.5. JPEG File Format Sent Out by VN-X35/235

JPEG file from VN-X35/235 is JFIF compliant and consist of the following.

FFD8	Start Code
FFE0	Application Segment
FFFE	Comment Segment 1
FFFE	Comment Segment 2 (reserved)
FFC4	DHT Huffman Table
FFDB	DQT Quantization Table
FFDD	DRI Restart Interval
FFC0	SOF Frame Information
FFDA	Data Start Segment
FFD9	End Code

The following information is stored in the comment segment 1. Each item has a fixed length.

Item	Size	Example	Note
Version Information	9	JVC V1.0	Indicates the version of information stored in the comment segment.
File Size	18	size = 123456	Indicates JPEG size in bytes.
Width	13	width = 640	Width of JPEG.
Height	14	height = 480	Height of JPEG.
Model Name	18	type = VN-X35U	Name of model that created the JPEG.
(reserved)	12	reverse = 0	(reserved)
Time Stamp	70	timestamp = 20071014130509123 UTC	Indicates the time when the JPEG is created. This is made up of the year/month/day, hour/minute/second, millisecond and timezone code.
(reserved)	13	alarm = 00000000	(reserved)
Camera ID	50	camera = input01	Stores camera information set at VN-X35/235.
Motion Detect Setting	11	motion = 1	Specified as 1 when the motion detect is ON.
Motion Detect Result	7	md = 1	Specified as 1 if motion is detected at the time when JPEG is created.
Number of Bytes of Following Motion Detect Items	18	motion_size = 10	Indicates size of "motion_bit" and "md_bit" items in bytes.
Mask Settings for Motion Detect	24	motion_bit = 000000000000000000000000	Indicates Mask settings for 80 blocks in binary data. (Not ASCII code.) If the bit is 0, the block is masked. If the bit is 1, the block is not masked.
Motion Detect Result of Each Block	20	md_bit = 000000000000000000000000	Indicates motion detect results for 80 blocks in binary data. (Not ASCII code.) If the bit is 0, the block detected motion. If the bit is 1, the block did not detect motion.
Pan position	16	digipan = 123	Indicates pan position in pixels from 0 to 1278.

Tilt position	17	digitilt = 123	Indicates tilt position in pixels from 0 to 958.
Zoom position	17	digizoom = 1.23	Indicates zoom value from 0.25 to 8.00.
Preset Position Number	15	position = 19	Indicates preset position number after moving to preset position. In other cases, position = NA.

Item names and values, excluding the version information that does not include =, are stored in the following format.

name	space	=	space	value	(stuffed with 0x00)
------	-------	---	-------	-------	---------------------

fixed length for each item

Example: When width=640, the 13-byte area will be written as follows.

w	i	d	t	h		=		6	4	0	0x00	0x00
---	---	---	---	---	--	---	--	---	---	---	------	------

## 2. Getting MPEG-4 from VN-X35/235 via HTTP

### 2.1. Basic Procedures

- 1) The client establishes a TCP connection to port number 80.
- 2) The client sends out API.

#### Example

```
GET /api/video?encode=mpeg4 HTTP/1.1<CRLF>
```

```
Host: 192.168.0.2<CRLF><CRLF>
```

**Note** <CRLF> denotes the line feed code (0x0D, 0x0A).

- 3) VN-X35/235 returns HTTP response.

#### Example of VN-X35

```
HTTP/1.1 200 OK<CRLF>
```

```
Connection: close<CRLF>
```

```
Content-Type: video/mp4v-es<CRLF>
```

```
Date: Tue, 02 Oct 2007 07:33:12 GMT<CRLF>
```

```
Server: JVC VN-X35 Network Camera<CRLF>
```

```
x-vnx35_response:
```

```
encode=mpeg4&framerate=15&framesize=vga&ptz_info=off<CRLF><CRLF>
```

- 4) VN-X35/235 sends out MPEG-4 data after returning HTTP response.

HTTP Response and MPEG-4 stream sent out by VN-X35/235 are as follows.

HTTP Response
VOP of MPEG-4 (No. 1)
VOP of MPEG-4 (No. 2)
'''

When ptz\_info=on is specified, boundary, digital pan/tilt/zoom information and MPEG-4 VOP will be sent out continuously after HTTP Response are as follows. Availability of digital pan/tilt/zoom depends on resolution pattern of JPEG and MPEG-4. Even if digital pan/tilt/zoom of MPEG-4 is not available, digital pan/tilt/zoom information is added to MPEG-4 stream. When digital pan/tilt/zoom of JPEG is changed, updated digital pan/tilt/zoom information is added to MPEG-4 stream. See "6.3 Encode" in this API guide for details of resolution pattern.

HTTP Response
boundary
pan/tilt/zoom information
MPEG-4 VOP (No. 1)
boundary
pan/tilt/zoom information
MPEG-4 VOP (No. 2)
'''

Example of Boundary and pan/tilt/zoom information:

--foo<CRLF>

Content-Type: image/jpeg<CRLF>

Content-Length: 5914<CRLF>

X-Puls-Pan: 0<CRLF>

X-Puls-Tilt: 0<CRLF>

X-Posi-Zoom: 0<CRLF><CRLF>

Range of X-Puls-Pan is from 0 to 1278.

Range of X-Puls-Tilt is from 0 to 958.

Range of X-Posi-Zoom is from 0 to 9999. 0 corresponds to x0.25 and 9999 corresponds to x8.00.

Details of MPEG-4 stream is explained later.

5) When the client wants to stop current MPEG-4 transmission, the client disconnects TCP80.

VN-X35/235 does not accept further API via current TCP that is used for JPEG transmission. To change parameter, disconnect current TCP to stop the MPEG-4 transmission, connect new TCP, and send API with new parameter.

## 2.2. API Format

### Structure

GET	space	API	space	HTTP/1.1	0x0D 0x0A
Host:	space	IP Address of VN-X35/235	0x0D 0x0A 0x0D 0x0A		

Unlike APIs for getting/setting parameters, Accept line is not required. Basic authentication is also not necessary.

### Example

```
GET /api/video?encode=mpeg4 HTTP/1.1<CRLF>
```

```
Host: 192.168.0.2<CRLF><CRLF>
```

Parameter value is indicated using =. Do not insert space before and after =.

Example encode=mpeg4

### Parameter Description

**encode** For specifying compression format. For example, specify as encode=mpeg4 to get MPEG-4.

**ptz\_info** To add pan/tilt/zoom information before MPEG-4 VOP data. Specify on or off.

## 2.3. Response

### When API is successfully received

VN-X35/235 will return 200 OK. The x-vnx35\_response or x\_vnx235\_response line indicates actual parameter.

### Example of VN-X35

```
HTTP/1.1 200 OK<CRLF>
```

```
Connection: close<CRLF>
```

Content-Type: video/mp4v-es<CRLF>

Date: Tue, 02 Oct 2007 07:33:12 GMT<CRLF>

Server: JVC VN-X35/235 Network Camera<CRLF>

x-vnx35\_response:

encode=mpeg4&framerate=15&framesize=vga&ptz\_info=off<CRLF><CRLF>

## 2.4. Restrictions

### Access restriction

VN-X35/235 has access restriction feature that enables to deny access from a specific IP address. If MPEG-4 is requested from the IP address of access restriction, VN-X35/235 disconnects the TCP connection after API is sent.

### Restriction by maximum bitrate of VN-X35/235

The maximum bitrate of VN-X35/235 is about 20 Mbps.

### Number of clients

The maximum number of clients that can get MPEG-4 stream depends on encode settings and JPEG clients. Refer the instruction manual for detailed information.

### MPEG-4 Availability

Availability of MPEG-4 depends on resolution pattern of JPEG and MPEG-4. If MPEG-4 is not available, VN-X35/235 disconnects the TCP connection after sending error response.

## 2.5. MPEG-4 Stream Format Sent Out by VN-X35/235

MPEG-4 stream from VN-X35/235 is MPEG-4 Part 2(ISO/IEC 14496-2) compliant, level 3 of simple profile. It is a sequence of I-VOPs, or I-VOPs and P-VOPs.

I-VOP: Intra frame compressed data

P-VOP: Inter frame compressed data with previous frame

Ratio of I-VOP and P-VOP depends on I-Frame interval setting. Encode page of Web has the setting.

First VOP can be I-VOP or P-VOP. If client want to decode from I-VOP, please skip P-VOP and wait first I-VOP.

Example of MPEG-4 stream

HTTP Response
P-VOP
P-VOP
P-VOP

VOL
I-VOP
P-VOP

There are VOL, Userdata1, GOV and Userdata2 before each I-VOP.

#### Data Structure before I-VOP

Item	Note
VOL	VOL of MPEG-4 Video
Userdata1	Reserved
GOV	GOV of MPEG-4 Video
Userdata2	Userdata

#### Data Structure of Userdata2

Item	Example	Note
Start Code	0x000001B2	Start code of userdata in MPEG-4 Video
Product Name	type = VN-X35U	Product Name
Timestamp	timestamp 20070319161455123UTC	= Year, Month, Day, Hour, Minute, Second, Millisedond, and Time zone
Camera ID	camera = Camera01	Camera ID that user can define
Preset Position Number	position = 0	Indicates preset position number after moving to preset position. In other cases, position = NA.

### 3. API to Search VN-X35/235

VN-X35/235 in LAN can be searched by broadcast packet that includes this API.

#### Search VN-X35/235 in LAN

**Protocol** Send udp packet with following text in UDP payload to destination port number 80. Source port number can be any value.

**system.id<CRLF>**

**Response** VN-X35/235 that received this packet sends udp packet to the source port number of the search packet. UDP payload of response packet has model name, IP address, and subnet mask. VN-X35/235 waits 0-0.7 second before sending response to avoid too many responses are sent in short period from many VN-X35/235s.

**Response Example of VN-X35** **system.id=VN-X35U(192.168.0.2/24)&200 OK<CRLF>**

## 4. Getting Alarm from VN-X35/235

### 4.1. Procedure

- 1) The client establishes a TCP connection to port number 32040.
- 2) When motion is detected from the video image of VN-X35/235, or when there are changes to the alarm input (make or break), VN-X35/235 will send out alarm information in the following format. The first 2 lines indicate the current alarm input status (make or break). The following 1 line indicates whether motion has been detected.

```
peripheral.input_pin.pin(1).status=break<CRLF>  
peripheral.input_pin.pin(2).status=break<CRLF>  
video.input(1).detection(motion).status=on<CRLF>
```

- 3) The client can disconnect TCP32040 to end the alarm acquisition.

### 4.2. Restrictions

#### Maximum number of clients

The maximum number of clients that may acquire alarm is 10. When a 11th client establishes TCP connection to port number 32040, VN-X35/235 disconnects the TCP connection.

Additionally, VN-X35/235 will also check whether the TCP connection is maintained at regular intervals. VN-X35/235 will disconnect the TCP connection if syn exchange is not performed in 10 minutes.

Note: API for getting alarm is not restricted by the access restriction function.

## 5. Using API that Requires Basic Authentication

Basic authentication is required for APIs which are explained in Section 6. This section provides general explanation of those APIs.

### 5.1. Procedure

- 1) The client establishes a TCP connection to port number 80.
- 2) The client sends API.

API has following structure.

GET	space	API Characters	space	HTTP/1.1	0x0D 0x0A
Accept:	space	text/plain (or text/html)		0x0D 0x0A	
Host:	space	IP Address of VN-X35/235		0x0D 0x0A	
Authorization: Basic	space	Encoded User Name and Password		0x0D 0x0A 0x0D 0x0A	

The following is an example of API for Getting subnet mask of VN-X35/235.

### Example

```
GET /api/param?network.interface.subnetmask HTTP/1.1<CRLF>
Accept: text/plain<CRLF>
Host: 192.168.0.2<CRLF>
Authorization: Basic YWRtaW46anZj<CRLF><CRLF>
```

Specify the response format by Accept line. Plain text response is returned when this is specified as text/plain. HTML response is returned when text/html is specified. HTML response is returned when Accept is not specified.

These APIs for getting/setting parameters are protected by basic authentication. Authorization line needs to include encoded username and password. There are 3 types of usernames, namely admin, operator and user. Available APIs are different for each username. Join the user name and the password using a colon, Base64 encode this character string and enter this in the Authorization line.

For example, when

User name admin

Password jvc

then the character string joining the user name and the password with a colon is:

admin:jvc

Base64 encoding of this string yields YWRtaW46anZj. Enter this in the Authorization line. Default password for each username is jvc.

3) VN-X35/235 returns a response to the client. In the following example, current subnet mask is 255.0.0.0. In addition, 255.0.0.0 is followed by & and 200 OK, indicating that getting parameter is successful.

### Example of VN-X35

```
HTTP/1.1 200 OK<CRLF>
Connection: close<CRLF>
Content-Length: 80<CRLF>
Content-type: text/plain<CRLF>
Date: Fri, 13 MAY 2005 07:33:12 GMT<CRLF>
Server: JVC VN-X35 API Server<CRLF>
network.interface.subnetmask=255.0.0.0&200 OK<CRLF>
```

4) The client disconnects TCP80 to end the use of API.

Note: APIs for getting/setting parameters are not restricted by the access restriction function.

## 6. API for Getting/Changing Parameters of VN-X35/235

This section provides description of APIs for getting/changing parameters of VN-X35/235. Make use of the API explained in this section in the way as mentioned in Section 5

### 6.1. General

(1) Getting parameter

- Specify API in GET line according to the format below when getting a parameter from VN-X35/235.

**/api/param?ParamA.ParamB.ParamC**

It is possible to get multiple parameters at a time. Connect parameters with &. Do not insert space before and after &.

**/api/param?ParamA.ParamB.ParamC&ParamA.ParamD.ParamE**

The upper limit of this character string is 1024 bytes. The maximum number of parameters that can be acquired at a time is 15. Status settings, i.e. network.interface.status, network.dns.status, network.ntp.status, etc., can not be acquired at a time.

- When acquisition is successfully completed, values will be shown in the body of HTTP response, followed by "&200 OK" message.

Example:

**ParamA.ParamB.ParamC=Data&200 OK**

When an error occurs, an error code will be returned instead of indicating a value in the body of HTTP response.

Example:

**ParamA.ParamB.ParamC&401 Unauthorized**

When multiple gettings are performed at one time, a response will be returned for each setting.

**ParamA.ParamB.ParamC&200 OK<CRLF>**

**ParamA.ParamB.ParamD&200 OK<CRLF>**

(2) Setting parameter

- Specify API in GET line according to the format below when setting a parameter for VN-X35/235.

**/api/param?ParamA.ParamB.ParamC=Data**

Parameter values are indicated using =. Do not insert space before and after =.

It is possible to perform multiple settings at a time. Connect parameters with &. Do not insert space before and after &.

**/api/param?ParamA.ParamB.ParamC=Data&ParamA.ParamB.ParamD=Data**

The upper limit of this character string is 1024 bytes. The maximum number of parameters that can be set at a time is 15. Status settings, i.e. network.interface.status, network.dns.status, network.ntp.status, etc., can not be acquired at a time.

- Response will be in the following format.

**ParamA.ParamB.ParamC&200 OK**

An error code will be returned when setting is not properly performed. Example:

**ParamA.ParamB.ParamC&401 Unauthorized**

When multiple settings are performed at one time, a response will be returned for each setting.

**ParamA.ParamB.ParamC&200 OK<CRLF>**

**ParamA.ParamB.ParamD&200 OK<CRLF>**

## 6.2. Camera

These APIs are related to camera settings. Same functions are shown on the Camera page of the WEB setting page.

Refer to the instruction manual for details on the Camera page.

### Saving Changes of Camera Settings

**Format** /api/param?camera.status=data

**Example** /api/param?camera.status=save

**Example of response** camera.status&200 OK

**Interpretation** Save or cancel changes to camera settings. Specify save or restore. By status=save, changes to camera settings are saved. If not saved, the changes are restored by power off of VN-X35/235. By status=restore, changes to camera settings are restored.

**Allowed users** admin, operator

### Getting Camera ID stored in JPEG from VN-X35/235

**Format** /api/param?camera.id

**Example of response** camera.id=VN-X35&200 OK

**Response example when setting field is left blank** camera.id=&200 OK

**Interpretation** Acquire Camera ID comment. This comment is stored in comment segment of JPEG. The Camera ID

is used as sender's display name of alarm mail. If you want to set sender's mail address, see "Setting Sender Mail Address for VN-X35/235".

**Example of response** camera.id=Camera01&200 OK

**Sender** Camera01<somename@somecompany.com>

**Allowed users** admin, operator, user

## Setting Camera ID in JPEG from VN-X35/235

**Format** /api/param?camera.id=data

**Example** /api/param?camera.id=Camera01

**Example when setting as blank** /api/param?camera.id=%00

**Example of response** camera.id&202 Accepted(camera.status=save)

**Interpretation** Change the camera ID stored in comment segment of JPEG. Maximum size is 40 bytes.

To set as blank, specify as %00(0x25, 0x30, 0x30).

To use space, specify as %20(0x25, 0x32, 0x30). If you want to set "Comment In JPEG" for example, specify as follows. /api/param?camera.id=Comment%20In%20JPEG

The Camera ID is used as sender's display name of alarm mail. If you want to set sender's mail address, see "Setting Sender Mail Address for VN-X35/235".

**Example of setting** /api/param?camera.id=Camera01

**Sender** Camera01<somename@somecompany.com>

The change is saved by the API, camera.status=save. If the change is not saved, the setting is restored by reboot.

**Allowed users** admin, operator

## Getting Monitor Type from VN-X35/235

**Format** /api/param?camera.image.monitortype

**Example of response** camera.image.monitortype=lcd1&200 OK

**Interpretation** Acquire the monitor type setting. Value is custome, lcd1, lcd2 or crt. When lcd1, lcd2 or crt is set, enhance band setting and gamma setting are ignored.

**Allowed users** admin, operator, user

## Setting Monitor Type for VN-X35/235

**Format** /api/param?camera.image.monitortype=data

**Example of setting a value** /api/param?image.monitortype=crt

**Example of response** camera.image.monitortype&202 Accepted(camera.status=save)

**Interpretation** Change the monitor type setting. Specify custome, lcd1, lcd2 or crt. Selecting lcd1 or lcd2 can improve image on LCD display. Selecting crt can improve image on CRT monitor. When lcd1, lcd2 or crt is set, enhance band setting and gamma setting are ignored. The change is saved by the API, camera.status=save. If the change

is not saved, the setting is restored by reboot.

**Allowed users** admin, operator

## Getting Black level from VN-X35/235

**Format** /api/param?camera.image.pedestal

**Example of response** camera.image.pedestal=50&200 OK

**Interpretation** Acquire black level setting. Range of pedestal is between 0 to 100, and it is mapped to 3 internal levels.

The larger the value, the brighter will be the black.

**Allowed users** admin, operator, user

## Setting Black level for VN-X35/235

**Format** /api/param?camera.image.pedestal=data

**Example of setting a value** /api/param?camera.image.pedestal=50

**Example of 1 step change** /api/param?camera.image.pedestal=+

**Example of response** camera.image.pedestal&202 Accepted(camera.status=save)

**Interpretation** Change pedestal setting. Specify 0 to 100, "+" or "-". The value is mapped to 3 internal levels. It

becomes brighter 1 step by specifying "+", darker 1 step by specifying "-". The change is saved by the API,

camera.status=save. If the change is not saved, the setting is restored by reboot.

**Allowed users** admin, operator

## Getting Gamma from VN-X35/235

**Format** /api/param?camera.image.gamma

**Example of response** camera.image.gamma=0.45&200 OK

**Interpretation** Acquire gamma setting. Value of gamma is 1, 0.6, 0.55, 0.5, 0.45, 0.4, 0.35, or 0.3. Default value is 0.45.

When lcd1, lcd2 or crt is set to monitor type, gamma setting is ignored.

**Allowed users** admin, operator, user

## Setting Gamma for VN-X35/235

**Format** /api/param?camera.image.gamma=data

**Example of setting a value** /api/param?camera.image.gamma=0.45

**Example of 1 step change** /api/param?camera.image.gamma=+

**Example of response** camera.image.gamma&202 Accepted(camera.status=save)

**Interpretation** Change gamma setting. Specify 1, 0.6, 0.55, 0.5, 0.45, 0.4, 0.35, 0.3, "+" or "-". It becomes darker

1 step by specifying "+", brighter 1 step by specifying "-". The change is saved by the API, camera.status=save. If the

change is not saved, the setting is restored by reboot.

When lcd1, lcd2 or crt is set to monitor type, gamma setting is ignored.

**Allowed users** admin, operator

## Getting Enhance Band from VN-X35/235

**Format** /api/param?camera.image.enhance.band

**Example of response** camera.image.enhance.band=high&200 OK

**Interpretation** Acquire enhance band setting. Value of enhance band is high or low.

When lcd1, lcd2 or crt is set to monitor type, enhance band setting is ignored.

**Allowed users** admin, operator, user

## Setting Enhance Band for VN-X35/235

**Format** /api/param?camera.image.enhance.band=data

**Example of setting a value** /api/param?camera.image.enhance.band=low

**Example of response** camera.image.enhance.band&202 Accepted(camera.status=save)

**Interpretation** Change enhance band setting. Specify high or low. The change is saved by the API, camera.status=save. If the change is not saved, the setting is restored by reboot.

When lcd1, lcd2 or crt is set to monitor type, enhance band setting is ignored.

**Allowed users** admin, operator

## Getting Enhance from VN-X35/235

**Format** /api/param?camera.image.enhance

**Example of response** camera.image.enhance=50&200 OK

**Interpretation** Acquire enhance setting. Range of enhance is between 0 to 100, and it is mapped to 11 internal levels.

The larger the value, the sharper will be the image.

**Allowed users** admin, operator, user

## Setting Enhance for VN-X35/235

**Format** /api/param?camera.image.enhance=data

**Example of setting a value** /api/param?camera.image.enhance=50

**Example of 1 step change** /api/param?camera.image.enhance=+

**Example of response** camera.image.enhance&202 Accepted(camera.status=save)

**Interpretation** Change enhance setting. Specify 0 to 100, "+" or "-". The value is mapped to 11 internal levels. It becomes sharper 1 step by specifying "+", softer 1 step by specifying "-". The change is saved by the API, camera.status=save. If the change is not saved, the setting is restored by reboot.

**Allowed users** admin, operator

## Getting Color Level from VN-X35/235

**Format** /api/param?camera.image.color

**Example of response** camera.image.color=50&200 OK

**Interpretation** Acquire color level value. Range of color level is between 0 to 100. The value is mapped to 11 internal levels. The larger the value, the stronger will be the color.

**Allowed users** admin, operator, user

## Setting Color Level for VN-X35/235

**Format** /api/param?camera.image.color=data

**Example of setting a value** /api/param?camera.image.color=50

**Example of 1 step change** /api/param?camera.image.color=+

**Example of response**

camera.image.color&202 Accepted(camera.status=save)

**Interpretation** Change color level value. Specify 0 to 100, "+" or "-". The value is mapped to 11 internal levels. The larger the value, the stronger will be the color. It becomes stronger 1 step by specifying "+", softer 1 step by specifying "-". The change is saved by the API, camera.status=save. If the change is not saved, the setting is restored by reboot.

**Allowed users** admin, operator

## Getting AGC from VN-X35/235

**Format** /api/param?camera.image.brightness

**Example of response** camera.image.brightness=autoL&200 OK

**Interpretation** Acquire AGC setting. "manual", "autoL", "autoM" or "autoH" is returned.

**Allowed users** admin, operator, user

## Setting AGC for VN-X35/235

**Format** /api/param?camera.image.brightness=data

**Example** /api/param?camera.image.brightness=auto

**Example of response** camera.image.brightness&202 Accepted(camera.status=save)

**Interpretation** Change AGC setting. Specify "manual", "autoL", "autoM" or "autoH". The change is saved by the API, camera.status=save. If the change is not saved, the setting is restored by reboot.

**Allowed users** admin, operator

## Getting Limit of Sense Up from VN-X35/235

**Format** /api/param?camera.image.senseup\_limit

**Example of response** camera.image.senseup\_limit=0&200 OK

**Interpretation** Acquire limit of sense up. 0, 2, 4, 8, 16 or 22 is returned. 0 means sense up is disabled. Other numbers

mean frame number of sense up.

**Allowed users** admin, operator, user

## Setting Limit of Sense Up for VN-X35/235

**Format** /api/param?camera.image.senseup\_limit=data

**Example** /api/param?camera.image.senseup\_limit=4

**Example of response** camera.image.senseup\_limit&202 Accepted(camera.status=save)

**Interpretation** Change limit of sense up. Specify 0, 2, 4, 8, 16, 22, "+" or "-". It becomes bigger 1 step by specifying "+", smaller 1 step by specifying "-". The change is saved by the API, camera.status=save. If the change is not saved, the setting is restored by reboot.

**Allowed users** admin, operator

## Getting ALC priority from VN-X35/235

**Format** /api/param?camera.auto\_exposure.priority

**Example of response** camera.auto\_exposure.priority=motion&200 OK

**Interpretation** Acquire ALC priority. ALC priority decides what is used first for auto exposure. "motion" or "quality" is returned. In case of "motion", AGC is used before using sense up. In case of "quality", sense up is used before using AGC.

**Allowed users** admin, operator, user

## Setting ALC priority for VN-X35/235

**Format** /api/param?camera.auto\_exposure.priority=data

**Example** /api/param?camera.auto\_exposure.priority=quality

**Example of response** camera.auto\_exposure.priority&202 Accepted(camera.status=save)

**Interpretation** Change ALC priority. ALC priority decides what is used first for auto exposure. Specify "motion" or "quality". In case of "motion", AGC is used before using sense up. In case of "quality", sense up is used before using AGC. The change is saved by the API, camera.status=save. If the change is not saved, the setting is restored by reboot.

**Allowed users** admin, operator

## Getting Shutter Speed from VN-X35/235

**Format** /api/param?camera.shutter

**Example of response** camera.shutter=60&200 OK

**Interpretation** Acquire shutter speed setting. "auto", "semi-auto", 15, 25, 30, 50, 60, 100, 250, 500, 1000, 2000, 4000, 10000 or "flickerless" is returned. For example, 60 means shutter speed 1/60. In case of "auto", the shutter speed is adjusted from 15 to 10000. In case of "semi-auto", the shutter speed is adjusted from 15 to 100 to decrease flicker than

"auto". In case of "flickerless", the shutter speed that avoids flicker is selected automatically.

**Allowed users** admin, operator, user

## Setting Shutter Speed for VN-X35

**Format** /api/param?camera.shutter=data

**Example of setting a value** /api/param?camera.shutter=60

**Example of 1 step change** /api/param?camera.shutter=+

**Example of response** camera.shutter&202 Accepted(camera.status=save)

**Interpretation** Change shutter speed setting. Specify "auto", "semi-auto", 15, 25, 30, 50, 60, 100, 250, 500, 1000, 2000, 4000, 10000 or "flickerless", "+" or "-". To set 1/60 for example, specify 60. It becomes shorter 1 step by specifying "+", longer 1 step by specifying "-". The change is saved by the API, camera.status=save. If the change is not saved, the setting is restored by reboot.

**Allowed users** admin, operator

## Getting Easy Day and Night from VN-X35 (VN-X35 only)

**Format** /api/param?camera.image.brightness.highgain

**Example of response** camera.image.brightness.highgain=color&200 OK

**Interpretation** Acquire Easy Day and Night setting. "color", "bw" or "auto" is returned.

**Allowed users** admin, operator, user

## Setting Easy Day and Night for VN-X35 (VN-X35 only)

**Format** /api/param?camera.image.brightness.highgain=data

**Example** /api/param?camera.image.brightness.highgain=auto

**Example of response**

camera.image.brightness.highgain&202 Accepted(camera.status=save)

**Interpretation** Change Easy Day and Night setting. Specify "color", "bw" or "auto". The change is saved by the API, camera.status=save. If the change is not saved, the setting is restored by reboot.

**Allowed users** admin, operator

## Getting B&W Mode (True Day&Night) from VN-X235 (VN-X235 Only)

**Format** /api/param?camera.image.true\_daynight

**Example of response** camera.image.true\_daynight=color&200 OK

**Interpretation** Acquire B&Wmode setting. "color", "bw", "autoH", "autoM" or "autoL" is returned. "color" enables IR filter and image becomes color. "bw" disables IR filter and image becomes black and white. When the setting is "autoH", "autoM" or "autoL", IR filter is enabled or disabled according to image brightness. To use "autoH", "autoM" or "autoL", set AGC to "autoH".

**Allowed users** admin, operator, user

## Setting B&W Mode (True Day&Night) for VN-X235 (VN-X235 Only)

**Format** /api/param?camera.image.true\_daynight=data

**Example** /api/param?camera.image.true\_daynight=bw

**Example of response**

camera.image.true\_daynight&202 Accepted(camera.status=save)

**Interpretation** Change B&W mode setting. Specify "color", "bw", "autoH", "autoM" or "autoL". "color" enables IR filter and image becomes color. "bw" disables IR filter and image becomes black and white. When the setting is "autoH", "autoM" or "autoL", IR filter is enabled or disabled according to image brightness. To use "autoH", "autoM" or "autoL", set AGC to "autoH". The change is saved by the API, camera.status=save. If the change is not saved, the setting is restored by reboot.

**Allowed users** admin, operator

## Getting Auto Exposure Reference from VN-X35/235

**Format** /api/param?camera.auto\_exposure.reference

**Example of response** camera.auto\_exposure.reference=0&200 OK

**Interpretation** Acquire auto exposure reference. A number from -9 to 6 is returned. When the number is bigger, image becomes brighter.

**Allowed users** admin, operator, user

## Setting Auto Exposure Reference for VN-X35/235

**Format** /api/param?camera.auto\_exposure.reference=data

**Example** /api/param?camera.auto\_exposure.reference=0

**Example of response** camera.auto\_exposure.reference&202

Accepted(camera.status=save)

**Interpretation** Change auto exposure reference. Specify a number from -9 to 6, or "+", "-". When the number is bigger, image becomes brighter. The change is saved by the API, camera.status=save. If the change is not saved, the setting is restored by reboot.

**Allowed users** admin, operator

## Getting White Balance from VN-X35/235

**Format** /api/param?camera.image.white\_balance

**Example of response** camera.image.white\_balance=auto&200 OK

**Interpretation** Acquire white balance setting. "auto" or "manual" is returned.

**Allowed users** admin, operator, user

## Setting White Balance for VN-X35/235

**Format** /api/param?camera.image.white\_balance=data

**Example** /api/param?camera.image.white\_balance=auto

**Example of response** camera.image.white\_balance&202 Accepted(camera.status=save)

**Interpretation** Change white balance setting. Specify "auto" or "manual". If "op\_auto" is specified, one push auto white balance control is done, and setting becomes "manual". The change is saved by the API, camera.status=save. If the change is not saved, the setting is restored by reboot.

**Allowed users** admin, operator

## Getting R-Gain of White Balance from VN-X35/235

**Format** /api/param?camera.image.white\_balance.r

**Example of response** camera.image.white\_balance.r=s85&200 OK

**Interpretation** Acquire R-gain of white balance setting. s0 to s255 is returned. The s before number means "step". Default value is s85.

**Allowed users** admin, operator, user

## Setting R-Gain of White Balance for VN-X35/235

**Format** /api/param?camera.image.white\_balance.r=data

**Example of response**

camera.image.white\_balance.r&202 Accepted(camera.status=save)

**Interpretation** Change R-gain white balance setting. Specify s0 to s255. The s before number means "step". Default value is s85. The change is saved by the API, camera.status=save. If the change is not saved, the setting is restored by reboot.

**Allowed users** admin, operator

## Getting B-Gain of White Balance from VN-X35/235

**Format** /api/param?camera.image.white\_balance.b

**Example of response** camera.image.white\_balance.b=s219&200 OK

**Interpretation** Acquire B-gain of white balance setting. s0 to s255 is returned. The s before number means "step". Default value is s219.

**Allowed users** admin, operator, user

## Setting B-Gain of White Balance for VN-X35/235

**Format** /api/param?camera.image.white\_balance.b=data

**Example of response**

`camera.image.white_balance.b&202 Accepted(camera.status=save)`

**Interpretation** Change B-gain white balance setting. Specify s0 to s255. The s before number means "step". Default value is s219. The change is saved by the API, camera.status=save. If the change is not saved, the setting is restored by reboot.

**Allowed users** admin, operator

## Getting Back Light Compensation from VN-X35/235

**Format** `/api/param?camera.image.blc`

**Example of response** `camera.image.blc=off&200 OK`

**Interpretation** Acquire Back Light Compensation setting. "off", "a", "b", "c" or "d" is returned. Refer the instruction manual for detailed information of "a", "b", "c" and "d".

**Allowed users** admin, operator, user

## Setting Back Light Compensation for VN-X35/235

**Format** `/api/param?camera.image.blc=data`

**Format of setting ON** `/api/param?camera.image.blc=a`

**Example of response** `camera.image.blc&202 Accepted(camera.status=save)`

**Interpretation** Change Back Light Compensation setting. Specify "off", "a", "b", "c" or "d". Refer the instruction manual for detailed information of "a", "b", "c" and "d". The change is saved by the API, camera.status=save. If the change is not saved, the setting is restored by reboot.

**Allowed users** admin, operator

## Getting Focus Assist status from VN-X35/235

**Format** `/api/param?camera.focusassist.status`

**Example of response** `camera.focusassist.status=off&200 OK`

**Interpretation** Acquire status of focus assist. "off" or "on" is returned. When focus assist is on, iris becomes open and enhance level becomes max.

**Allowed users** admin, operator, user

## Setting Focus Assist status for VN-X35/235

**Format** `/api/param?camera.focusassist.status=data`

**Format of setting ON** `/api/param?camera.focusassist.status=on`

**Example of response** `camera.focusassist.status&200 OK`

**Interpretation** Change focus assist status. Specify "off" or "on". By specifying "on", iris becomes open and enhance level becomes max. By specifying "off", iris and enhance level are resumed. When 3 minutes passed from setting "on", focus assist is disabled automatically. The focus assist by the API is for JPEG/MPEG-4 stream, not for analog video

output. To use focus assist for analog video output, refer to the instruction manual.

**Allowed users** admin, operator

### 6.3. Encoding

These APIs are related to JPEG or MPEG-4 encoding. These are equivalent to the features on the Encoding page of the WEB setting page. Refer to the instruction manual for details on the Encoding page.

#### Getting Resolution Pattern from VN-X35/235

**Format** /api/param?system.mode

**Example of response** system.mode=pattern1&200 OK

**Interpretation** Acquire resolution pattern setting. "pattern1", "pattern2",,, or "pattern8" is returned.

system.mode	JPEG	MPEG-4	Digital PTZ	Privacy Masking
pattern1	QuadVGA	VGA	Available	Not available
pattern2	QuadVGA	QVGA	Available	Not available
pattern3	VGA	VGA	Available	Not available
pattern4	QVGA	QVGA	Available	Not available
pattern5	QuadVGA	Not available	Available	Not available
pattern6	QuadVGA	Not available	Not available	Available
pattern7	VGA	VGA	Not available	Available
pattern8	QuadVGA	VGA	Not available	MPEG-4 Only

**Allowed users** admin, operator

#### Setting Resolution Pattern for VN-X35/235

**Format** /api/param?system.mode=data

**Example** /api/param?system.mode=pattern1

**Example of response** system.mode&200 OK

**Interpretation** Change resolution pattern setting. Specify "pattern1", "pattern2",,, or "pattern8".

system.mode	JPEG	MPEG-4	Digital PTZ	Privacy Masking
pattern1	QuadVGA	VGA	Available	Not available
pattern2	QuadVGA	QVGA	Available	Not available
pattern3	VGA	VGA	Available	Not available
pattern4	QVGA	QVGA	Available	Not available
pattern5	QuadVGA	Not available	Available	Not available
pattern6	QuadVGA	Not available	Not available	Available
pattern7	VGA	VGA	Not available	Available
pattern8	QuadVGA	VGA	Not available	MPEG-4 Only

JPEG file size setting is changed automatically when resolution pattern is changed. Getting resolution of JPEG/MPEG-4 is possible by the API "encode(1).framesize" or "encode(2).framesize". But to set resolution of

JPEG/MPEG-4, use the API "system.mode". If frame size of JPEG is changed, file size is changed as below.

Frame size of JPEG	File size of JPEG
QuadVGA to VGA	half of original size
QuadVGA to QVGA	six part of original size
VGA to QuadVGA	two times size
VGA to QVGA	third part of original size
QVGA to QuadVGA	six times size
QVGA to VGA	three times size

**Allowed users** admin, operator

## Saving Changes of Encode Settings for VN-X35/235

**Format** `/api/param?encode(1).status=save`

or `/api/param?encode(2).status=save`

**Example of response** `encode(1).status&200 OK`

**Interpretation** Save changes to encode settings. All JPEG and MPEG-4 settings are saved. If not saved, the changes are restored by power off of VN-X35/235.

**Allowed users** admin, operator

## Getting JPEG Frame Size from VN-X35/235

**Format** `/api/param?encode(1).framesize`

**Example of response** `encode(1).framesize=vga&200 OK`

**Interpretation** Acquire JPEG frame size setting. "quadvga", "vga" or "qvga" is returned.

**Allowed users** admin, operator, user

## Getting JPEG Rate Control Setting from VN-X35/235

**Format** `/api/param?encode(1).cbr_mode`

**Example of response** `encode(1).cbr_mode=afs&200 OK`

**Interpretation** Acquire the rate control setting of JPEG. Quantization table is fixed in the case of vfs (VariableFileSize). In the case of afs (AverageFileSize), bit rates are controlled such that the average size of multiple files remains constant.

**Allowed users** admin, operator, user

## Setting JPEG Rate Control for VN-X35/235

**Format** `/api/param?encode(1).cbr_mode=data`

**Example** `/api/param?encode(1).cbr_mode=vfs`

**Example of response** `encode(1).cbr_mode&202 Accepted(encode(1).status=save)`

**Interpretation** Change rate control of JPEG. Rate control can be set to vfs or afs. In vfs (VariableFileSize),

quantization table is fixed. In afs (AverageFileSize), average file size of multiple JPEGs is controlled to be constant. The change is saved by the API, encode(1).status=save. If the change is not saved, the setting is restored by reboot.

**Allowed users** admin, operator

## Getting JPEG File Size Setting from VN-X35/235

**Format** /api/param?encode(1).quality

**Example of response** encode(1).quality=40k&200 OK

**Interpretation** Acquire the file size setting of JPEG. If the response is 40k for example, the setting is 40KB.

**Allowed users** admin, operator, user

## Setting JPEG File Size Setting for VN-X35/235

**Format** /api/param?encode(1).quality=Data

**Example** /api/param?encode(1).quality=30k

**Example of response** encode(1).quality&202 Accepted(encode(1).status=save)

**Interpretation** Change the file size setting of JPEG. The unit of set values is in KB. VN-X35/235 will perform rate control with this file size as the target.

When frame size is QuadVGA, setting between the range of 40k to 200k is possible. When frame size is VGA, setting between the range of 10k to 100k is possible. When frame size is QVGA, setting between the range of 3k to 33k is possible.

When VFS (VariableFileSize) is specified for rate control at the WEB setting page, 7 levels will be available for selection. Each of these choices corresponds to the file sizes as follows.

Level	File Size Setting for QuadVGA	File Size Setting for VGA	File Size Setting for QVGA
1	180k	80k	27k
2	160k	60k	20k
3	140k	40k	13k
4	120k	30k	10k
5	100k	25k	8k
6	80k	20k	7k
7	60k	15k	5k

When rate control is set to vfs and a file size that is not stated above is specified, the closest choice will be displayed on the WEB setting page. The change is saved by the API, encode(1).status=save. If the change is not saved, the setting is restored by reboot.

**Allowed users** admin, operator

## Getting MPEG-4 Frame Size from VN-X35/235

**Format** /api/param?encode(2).framesize

**Example of response** encode(2).framesize=vga&200 OK

**Interpretation** Acquire MPEG-4 frame size setting. "vga" or "qvga" is returned.

**Allowed users** admin, operator, user

## Getting MPEG-4 bitrate Setting from VN-X35/235

**Format** /api/param?encode(2).bitrate

**Example of response** encode(2).bitrate=4000000&200 OK

**Interpretation** Acquire the bitrate setting of MPEG-4. If the response is 4000000 for example, the setting is 4Mbps.

**Allowed users** admin, operator, user

## Setting MPEG-4 bitrate Setting for VN-X35/235

**Format** /api/param?encode(2).bitrate=Data

**Example** /api/param?encode(2).bitrate=2000000

**Example of response** encode(2).bitrate&202 Accepted(encode(2).status=save)

**Interpretation** Change the bitrate setting of MPEG-4. Specify from 64000 to 4000000.

The change is saved by the API, encode(2).status=save. If the change is not saved, the setting is restored by reboot.

**Allowed users** admin, operator

## Getting MPEG-4 Rate Control Setting from VN-X35/235

**Format** /api/param?encode(2).cbr\_mode

**Example of response** encode(2).cbr\_mode=cbr&200 OK

**Interpretation** Acquire the rate control setting of MPEG-4. "cbr" or "vbr" is returned. Bitrate is controlled to be constant in the case of cbr (Constant Bitrate). In the case of vbr (Variable Bitrate), bitrate can be larger by input image.

**Allowed users** admin, operator, user

## Setting MPEG-4 Rate Control for VN-X35/235

**Format** /api/param?encode(2).cbr\_mode=data

**Example** /api/param?encode(2).cbr\_mode=vbr

**Example of response** encode(2).cbr\_mode&202 Accepted(encode(2).status=save)

**Interpretation** Change rate control of MPEG-4. Rate control can be set to cbr or vbr. Bitrate is controlled to be constant in the case of cbr (Constant Bitrate). In the case of vbr (Variable Bitrate), bitrate can be larger by input image.

If vbr is set, frame rate of MPEG-4 becomes 15fps.

The change is saved by the API, encode(2).status=save. If the change is not saved, the setting is restored by reboot.

**Allowed users** admin, operator

## Getting MPEG-4 Frame Rate Setting from VN-X35/235

**Format** /api/param?encode(2).framerate

**Example of response** `encode(2).framerate=15&200 OK`

**Interpretation** Acquire frame rate of MPEG-4 encoding.

**Allowed users** admin, operator, user

## Setting MPEG-4 Frame Rate Setting for VN-X35/235

**Format** `/api/param?encode(2).framerate=data`

**Example** `/api/param?encode(2).framerate=30`

**Example of response** `encode(2).framerate&202 Accepted(encode(2).status=save)`

**Interpretation** Change frame rate of MPEG-4. Specify 15, 10, 7.5, or 1. If vbr is set to MPEG-4 rate control, frame rate of MPEG-4 becomes 15fps. If I-Frame interval is not multiple of 15, real frame rate becomes larger than the setting. Refer I-Frame interval API for details.

The change is saved by the API, `encode(2).status=save`. If the change is not saved, the setting is restored by reboot.

**Allowed users** admin, operator

## Getting MPEG-4 I-Frame Interval Setting from VN-X35/235

**Format** `/api/param?encode(2).iframeinterval`

**Example of response** `encode(2).iframeinterval=15&200 OK`

**Interpretation** Acquire I-Frame interval of MPEG-4 encoding.

**Allowed users** admin, operator, user

## Setting MPEG-4 I-Frame Interval Setting for VN-X35/235

**Format** `/api/param?encode(2).iframeinterval=data`

**Example** `/api/param?encode(2).iframeinterval=15`

**Example of response** `encode(2).iframeinterval&202 Accepted(encode(2).status=save)`

**Interpretation** Change I-Frame interval of MPEG-4. Specify 1 to 255. If I-Frame interval is multiple of 15, real frame rate is as frame rate setting. If I-Frame interval is not multiple of 15, real frame rate becomes larger than the setting because I-Frame can not be skipped. If I-Frame setting is 1, all frames become I-Frame and frame rate becomes 15fps.

The change is saved by the API, `encode(2).status=save`. If the change is not saved, the setting is restored by reboot.

**Allowed users** admin, operator

## Getting MPEG-4 Priority Setting from VN-X35/235

**Format** `/api/param?encode(2).priority`

**Example of response** `encode(2).priority=motion&200 OK`

**Interpretation** Acquire priority of MPEG-4 encoding. "motion" or "quality" is returned.

**Allowed users** admin, operator, user

## Setting MPEG-4 Priority Setting for VN-X35/235

**Format** /api/param?encode(2).priority=data

**Example** /api/param?encode(2).priority=motion

**Example of response** encode(2).priority&202 Accepted(encode(2).status=save)

**Interpretation** Change priority of MPEG-4. Specify "motion" or "quality". To keep frame rate, select "motion". To keep image quality, select "quality".

The change is saved by the API, encode(2).status=save. If the change is not saved, the setting is restored by reboot.

**Allowed users** admin, operator

## 6.4. Audio Setting

The APIs below are related to audio setting. These are equivalent to the features on the Audio page of the WEB setting page. Refer to the instruction manual for details on the Audio page.

### Getting Audio Duplex Mode from VN-X35/235

**Format** /api/param?audio.input(1).halfduplex

**Example of response** audio.input(1).halfduplex=on&200 OK

**Interpretation** Acquire audio duplex mode. "on" or "off" is returned. When the setting is "on", audio from VN-X35/235 is muted during a client is sending audio to VN-X35/235. By setting "on", howling/echo can be suppressed.

**Allowed users** admin, operator, user

### Setting Audio Duplex Mode for VN-X35/235

**Format** /api/param?audio.input(1).halfduplex=data

**Example** /api/param?audio.input(1).halfduplex=on

**Example of response** audio.input(1).halfduplex&200 OK

**Interpretation** Change audio duplex mode. Specify "on" or "off". When the setting is "on", audio from VN-X35/235 is muted during a client is sending audio to VN-X35/235. By setting "on", howling/echo can be suppressed.

**Allowed users** admin, operator

### Getting Audio Input Gain from VN-X35/235

**Format** /api/param?audio.input(1).gain

**Example of response** audio.input(1).gain=32&200 OK

**Interpretation** Acquire audio input gain. "0", "20", "26", "32" or "auto" is returned. "32" means 32 dB.

**Allowed users** admin, operator, user

## Setting Audio Input Gain for VN-X35/235

**Format** /api/param?audio.input(1).gain=data

**Example** /api/param?audio.input(1).gain=32

**Example of response** audio.input(1).gain&200 OK

**Interpretation** Change audio input gain. Specify "0", "20", "26", "32" or "auto". "32" means 32 dB.

**Allowed users** admin, operator

## Getting Mike Power Supply setting from VN-X35/235

**Format** /api/param?audio.input(1).powersupply.status

**Example of response** audio.input(1).powersupply.status=on&200 OK

**Interpretation** Acquire mike power supply setting. "on" or "off" is returned.

**Allowed users** admin, operator, user

## Setting Mike Power Supply for VN-X35/235

**Format** /api/param?audio.input(1).powersupply.status=data

**Example** /api/param?audio.input(1).powersupply.status=32

**Example of response** audio.input(1).powersupply.status&200 OK

**Interpretation** Change mike power supply setting. Specify "on" or "off".

**Allowed users** admin, operator

## 6.5. Alarm Setting

The APIs below are related to alarm setting. These are equivalent to the features on the Alarm page of the WEB setting page. Refer to the instruction manual for details on the Alarm page.

### Getting On/Off of Alarm Action from VN-X35/235

**Format** /api/param?application.event(Number).status

**Example** When Getting the on/off status of alarm action No. 1

/api/param?application.event(1).status

**Example of response** application.event(1).status=on&200 OK

**Interpretation** Acquire the on/off status of the alarm action for the specified alarm action number. 5 alarm actions and 1 periodic FTP assigned to No.6 are available, so alarm action number can be 1 to 6. Note that alarm numbers are different from the alarm input pin numbers. Either on or off is returned.

**Allowed users** admin, operator

## Setting On/Off of Alarm Action, or Enabling Changes to Alarm Action for VN-X35/235

**Format** `/api/param?application.event(Number).status=data`

**Example** When setting alarm action No. 1 to off

```
/api/param?application.event(1).status=off
```

**Example of response** `application.event(1).status&200 OK`

**Interpretation** Set the alarm action of the specified alarm action number to on/off, or enable changes to the alarm action. 5 alarm actions and 1 periodic FTP assigned to No.6 are available, so alarm action number can be 1 to 6. Note that alarm numbers are different from the alarm input pin numbers. Either on or off will be returned.

Specify "on", "off" or "restart". By "restart", changes to alarm action and alarm trigger are enabled. By "on" after "restart", the alarm action starts working with the changed settings. If "restart" is not set after changes to alarm action and alarm trigger, APIs to get settings of alarm action and alarm trigger return previous values.

**Allowed users** admin, operator

## Getting Alarm Action from VN-X35/235

**Format** `/api/param?application.event(Number).action`

**Example** When Getting action of alarm action No. 1

```
/api/param?application.event(1).action
```

**Example of Response**

`application.event(1).action=mailto/somebody@somecompany.com/none/Message&200 OK`

**Interpretation** Acquire the alarm action of the specified alarm action number. 5 alarm actions and 1 periodic FTP assigned to No.6 are available, so alarm action number can be 1 to 6. Note that alarm numbers are different from the alarm input pin numbers. A separate API (`/api/param?application.event(Number).status`) is used to acquire the on/off status of the alarm action.

When no action is specified, response below is returned.

**Example of Response** `application.event(1).action=&200 OK`

When sending mail is specified, mailto, mail address, JPEG attaching and the character string to be sent will be returned.

When spaces are included in the character string, the character string with spaces will be returned. Segments are indicated by /. If JPEG attaching is on, "object01" is returned, and if JPEG attaching is off, "none" is returned.

**Example of Response**

`application.event(1).action=mailto/somebody@somecompany.com/object01/Message&200 OK`

When "PrePostRecording + FTP" is specified, recftp, FTP number, and the attached object number will be returned. Segments are indicated by /. The FTP number is fixed as ftp01 at all times. The object number is fixed as object01.

Parameters of FTP can be gotten by other APIs, application.ftp and application.object.

**Example of Response** `application.event(1).action=recftp/ftp01/object01&200 OK`

When sending via TCP is specified, tcpto, IP address, port number and the character string to be sent will be returned. Segments are indicated by /.

**Example of Response**

`application.event(1).action=tcpto/10.0.0.100/20000/Message&200 OK`

When sending via UDP is specified, udpto, IP address, port number and the character string to be sent will be returned. Segments are indicated by /.

**Example of Response**

`application.event(1).action=udpto/10.0.0.100/20000/Message&200 OK`

When alarm output is specified, pinout, distinction between make/break (m1 or b1) and output time (millisecond) will be returned. Segments are indicated by /.

**Example of Response** `application.event(1).action=pinout/m1/1500&200 OK`

When preset position is specified, position number will be returned.

**Example of Response when position number is 2**

`application.event(1).action=camera.position(2).status/goto&200 OK`

When audio file playback is specified, audio file number will be returned. A separate API (/api/param?application.audioplay) is used to get/set parameters of audio file playback.

**Example of Response when audio file number is 2**

`application.event(1).action=audioplay/audiofile02/ch01&200 OK`

B&W mode is available for VN-X235. When B&W mode is specified, true\_daynight/bw, true\_daynight/color, true\_daynight/autoH, true\_daynight/autoM or true\_daynight/autoL will be returned.

**Example of Response when B&W mode is bw**

`application.event(1).action=camera.image.true_daynight/bw&200 OK`

Alarm action of event number 6 is periodic FTP. Response to the API has ftpto, FTP number, and the attached object number. Segments are indicated by /. The FTP number is fixed as ftp01 at all times. The object number is fixed as object01. Parameters of FTP can be gotten by another API, application.ftp.

**Example of Response** `application.event(6).action=ftpto/ftp01/object01&200 OK`

**Allowed users** admin, operator

## Setting Alarm Action for VN-X35/235

**Format** `/api/param?application.event(Number).action=Data`

**Example** When setting action of Alarm No. 1

`/api/param?application.event(1).action=mailto/somebody@somecompany.com/none/Message`

### Example of Response

`application.event(1).action&202 Accepted(application.event(1).status=restart)`

**Interpretation** Set the alarm action of the specified alarm number. Up to 5 alarm actions can be specified, and therefore the number of alarm(number) can also be set between the range of 1 to 5. Note that alarm numbers are different from the alarm input pin numbers. A separate API (`/api/param?application.event(Number).status=off`) is used to set the alarm action to off.

The action will be activated by setting the alarm trigger. The API for setting the alarm trigger is

`/api/param?application.event(Number).trigger`.

The changes to settings of alarm action become valid by `/api/param?application.event(Number).status=restart`.

Specify mailto, mail address, JPEG attach and the character string to be sent when sending via mail. Segments are indicated by /. The maximum number of characters for the mail address is 95. To attach JPEG, specify object01. If none is specified instead of object01, JPEG is not attached to the mail. Number of the character string is from 1 to 127 bytes. To use following characters, specify by hexadecimal number after %.

space & / < > # % " { } | \ ^ [ ] `

For example, specify 3 characters %20 when inserting a space in the character string. For example, to send the character string "This is alarm.", specify as "This%20is%20alarm.". %09 and %0D are not available.

### Setting Example

`/api/param?application.event(1).action=mailto/somebody@somecompany.com/object01/Alarm%20ON`

The character string "Alarm from VN-X35/235" will be stored in the title field of the mail.

Specify recftp, FTP number and the object for PrePostRecording+FTP. The FTP number is fixed as ftp01 at all times. The object is fixed as object01. Parameters of FTP can be set by other APIs, `application.ftp` and `application.object`. Ensure to set the FTP server (`/api/param?application.ftp.host`, `/api/param?application.object.framerate` etc.) before setting PrePostRecording+FTP.

**Setting Example** `/api/param?application.event(1).action=ftpto/ftp01/object01`

Specify tcpto, IP address, port number and the character string to be sent when sending via TCP. Segments are indicated

by /. The number of character string is from 1 to 127 bytes. To use following characters, specify by hexadecimal number after %.

space & / < > # % " { } | \ ^ [ ] `

For example, specify 3 characters %20 when inserting a space in the character string. For example, to send the character string "This is alarm.", specify as "This%20is%20alarm.". %09 and %0D are not available.

#### Setting Example

```
/api/param?application.event(1).action=tcpto/10.0.0.100/20000/Message
```

Specify udpto, IP address, port number and the character string to be sent when sending via UDP. Segments are indicated by /. The number of character string is from 1 to 127 bytes. To use following characters, specify by hexadecimal number after %.

space & / < > # % " { } | \ ^ [ ] `

For example, specify 3 characters %20 when inserting a space in the character string. For example, to send the character string "This is alarm.", specify as "This%20is%20alarm.". %09 and %0D are not available.

#### Setting Example

```
/api/param?application.event(1).action=udpto/10.0.0.100/20000/Message
```

Specify pinout, distinction between make/break (m1 or b1) and the time (millisecond) when alarm output is specified. Segments are indicated by /. The time is 0 or from 100 to 5000. When the time is 0, alarm output does not come back to previous state.

**Setting Example** /api/param?application.event(1).action=pinout/m1/1500

Specify preset position number when preset position is specified.

#### Setting Example

```
/api/param?application.event(1).action=camera.position(2).status/goto
```

Specify audio file number when audio file playback is specified. The audio file number can be from 01 to 05.

**Setting Example** /api/param?application.event(1).action=audioplay/audiofile02/ch01

B&W mode is available for VN-X235. Specify true\_daynight/bw, true\_daynight/color, true\_daynight/autoH, true\_daynight/autoM or true\_daynight/autoL when B&W mode is specified.

#### Setting Example

```
/api/param?application.event(1).action=camera.image.true_daynight/bw
```

Alarm action of event number 6 is periodic FTP. Event 1 to 5 can not be set to periodic FTP. Parameters of FTP can be set by another API, application.ftp.

**Allowed users** admin, operator

## Getting Alarm Filter Setting from VN-X35/235

**Format** `/api/param?application.event(Number).filter(WeekOfDay).status`

**Example** When Getting Setting of Sunday filter of Alarm No. 1

`/api/param?application.event(1).filter(sunday).status`

**Example of Response** `application.event(1).filter(sunday).status=off&200 OK`

**Interpretation** Acquire filter setting of the alarm action for the specified alarm number. Up to 5 alarm actions can be specified, and periodic FTP is assigned to event No.6, therefore the number of alarm(number) can be set between the range of 1 to 6. Note that alarm numbers are different from the alarm input pin numbers.

Specify sunday, monday, tuesday, wednesday, thursday, friday or saturday for WeekOfDay. When the filter is enabled, on will be returned. When the filter is disabled, off will be returned.

**Allowed users** admin, operator

## Setting Alarm Filter for VN-X35/235

**Format** `/api/param?application.event(Number).filter(WeekOfDay).status=data`

**Example** When setting Sunday filter of Alarm No. 1

`/api/param?application.event(1).filter(sunday).status=on`

**Example of Response**

`application.event(1).filter(sunday).status&202`

`Accepted(application.event(1).status=restart)`

**Interpretation** Set filter setting of the alarm action for the specified alarm number. Up to 5 alarm actions can be specified, and periodic FTP is assigned to event No.6, therefore the number of alarm(number) can be set between the range of 1 to 6. Note that alarm numbers are different from the alarm input pin numbers.

Specify sunday, monday, tuesday, wednesday, thursday, friday or saturday for WeekOfDay.

Specify on to enable the filter, off to disable the filter.

The changes to filter of alarm action is saved by `/api/param?application.event(Number).status=restart`.

**Allowed users** admin, operator

## Getting Alarm Filter Time from VN-X35/235

**Format** `/api/param?application.event(Number).filter(WeekOfDay).time`

**Example** When Getting Time of Sunday filter of Alarm No. 1

`/api/param?application.event(1).filter(sunday).time`

**Example of Response** `application.event(1).filter(sunday).time=000000-240000&200 OK`

**Interpretation** Acquire filter time of the alarm action for the specified alarm number. Up to 5 alarm actions can be specified, and periodic FTP is assigned to event No.6, therefore the number of alarm(number) can be set between the

range of 1 to 6. Note that alarm numbers are different from the alarm input pin numbers.

Specify sunday, monday, tuesday, wednesday, thursday, friday or saturday for WeekOfDay. Start time and end time is returned in the format like hhhmss-hhhmss. Start time can be from 000000 to 235959. End time can be from 000001 to 240000.

**Allowed users** admin, operator

## Setting Alarm Filter Time for VN-X35/235

**Format** `/api/param?application.event(Number).filter(WeekOfDay).time=data`

**Example** When setting Sunday filter time of Alarm No. 1

```
/api/param?application.event(1).filter(sunday).time=010200-040500
```

**Example of Response**

```
application.event(1).filter(sunday).time&202
```

```
Accepted(application.event(1).status=restart)
```

**Interpretation** Set filter time of the alarm action for the specified alarm number. Up to 5 alarm actions can be specified, and periodic FTP is assigned to event No.6, therefore the number of alarm(number) can be set between the range of 1 to 6. Note that alarm numbers are different from the alarm input pin numbers.

Specify sunday, monday, tuesday, wednesday, thursday, friday or saturday for WeekOfDay.

Specify start time and end time in the format like hhhmss-hhhmss. Start time can be from 000000 to 235959. End time can be from 000001 to 240000. Start time must be earlier than end time.

The changes to filter of alarm action is saved by `/api/param?application.event(Number).status=restart`.

**Allowed users** admin, operator

## Getting Alarm Filter Type from VN-X35/235

**Format** `/api/param?application.event(Number).filter(WeekOfDay).type`

**Example** When Getting Type of Sunday filter of Alarm No. 1

```
/api/param?application.event(1).filter(sunday).type
```

**Example of Response** `application.event(1).filter(sunday).type=mask&200 OK`

**Interpretation** Acquire filter type of the alarm action for the specified alarm number. Up to 5 alarm actions can be specified, and periodic FTP is assigned to event No.6, therefore the number of alarm(number) can be set between the range of 1 to 6. Note that alarm numbers are different from the alarm input pin numbers.

Specify sunday, monday, tuesday, wednesday, thursday, friday or saturday for WeekOfDay. "mask" or "unmask" is returned. When the setting is mask, alarm action is disabled during the filter time. When the setting is unmask, alarm action is enabled during the filter time.

**Allowed users** admin, operator

## Setting Alarm Filter Type for VN-X35/235

**Format** `/api/param?application.event(Number).filter(WeekOfDay).type=data`

**Example** When setting Sunday filter type of Alarm No. 1 to be unmask

`/api/param?application.event(1).filter(sunday).type=unmask`

**Example of Response**

`application.event(1).filter(sunday).type&202`

`Accepted(application.event(1).status=restart)`

**Interpretation** Set filter type of the alarm action for the specified alarm number. Up to 5 alarm actions can be specified, and periodic FTP is assigned to event No.6, therefore the number of alarm(number) can be set between the range of 1 to 6. Note that alarm numbers are different from the alarm input pin numbers.

Specify sunday, monday, tuesday, wednesday, thursday, friday or saturday for WeekOfDay.

Specify mask or unmask. When the setting is mask, alarm action is disabled during the filter time. When the setting is unmask, alarm action is enabled during the filter time.

The changes to filter of alarm action is saved by `/api/param?application.event(Number).status=restart`.

**Allowed users** admin, operator

## Getting Alarm Trigger from VN-X35/235

**Format** `/api/param?application.event(Number).trigger`

**Example** When Getting Trigger of Alarm No. 1

`/api/param?application.event(1).trigger`

**Example of Response** `application.event(1).trigger=m1&200 OK`

**Interpretation** Acquire Trigger of the alarm action for the specified alarm number. Up to 5 alarm actions can be specified, and periodic FTP is assigned to event No.6, therefore the number of alarm(number) can be set between the range of 1 to 6. Note that alarm numbers are different from the alarm input pin numbers.

When only 1 Trigger is set:

m1 will be returned in the case of make for alarm input 1.

b1 will be returned in the case of break for alarm input 1.

m2 will be returned in the case of make for alarm input 2.

b2 will be returned in the case of break for alarm input 2.

v1 will be returned for motion detection of video.

ncbws will be returned for IR filter OFF. (VN-X235 Only)

ncbwe will be returned for IR filter ON. (VN-X235 Only)

camera.position(num).status will be returned for preset position. "num" is from 0 to 19.

**Example of Response** `application.event(1).trigger=v1&200 OK`

When a combination of 2 Triggers are set, responses such as m1(10)b2 will be returned. The example indicates that trigger will be activated when break is invoked at alarm input 2 within 10 seconds after make is invoked at alarm input

1.

**Example of Response** `application.event(1).trigger=m1(100)b2&200 OK`

**Allowed users** admin, operator

## Setting Alarm Trigger for VN-X35/235

**Format** `/api/param?application.event(Number).trigger=data`

**Example** When setting Trigger of Alarm No. 1

`/api/param?application.event(1).trigger=m1`

**Example of Response**

`application.event(1).trigger&202 Accepted(application.event(1).status=restart)`

**Interpretation** Set Trigger of the alarm action for the specified alarm number. Up to 5 alarm actions can be specified, and periodic FTP is assigned to event No.6, therefore the number of alarm(number) can be set between the range of 1 to 6. Note that alarm numbers are different from the alarm input pin numbers.

The changes to settings of alarm action become valid by `/api/param?application.event(Number).status=restart`.

When setting only 1 Trigger:

specify m1 in the case of Make for alarm input 1.

specify b1 in the case of Break for alarm input 1.

specify m2 in the case of Make for alarm input 2.

specify b2 in the case of Break for alarm input 2.

specify v1 for motion detection of video.

specify camera.position(num).status for preset position. "num" is from 0 to 19.

**Setting Example** `/api/param?application.event(1).trigger=v1`

Interval can be set to periodic ftp assigned to event(6). Set "i1500" for interval 1500 seconds.

**Setting Example** `/api/param?application.event(6).trigger=i1500`

When setting Trigger upon combining 2 alarm inputs, specify as m1(50)b2. The example above indicates that trigger will be activated when break is invoked at alarm input 2 within 50 seconds after make is invoked at alarm input 1.

Additionally, combination is only allowed for alarm inputs and not motion detect nor IR Filter. And same alarm can not be combined. For example, m1(50)m1 is not available.

**Setting Example** `/api/param?application.event(1).trigger=m1(100)b2`

**Allowed users** admin, operator

## 6.6. Alarm Environment Setting

The APIs below are related to alarm environment setting. These are equivalent to the features on the Alarm Environment page of the WEB setting page. Refer to the instruction manual for details on the Alarm Environment page.

## Getting SMTP Server Address Setting from VN-X35/235

**Format** /api/param?application.smtp.host

**Example of Response** application.smtp.host=192.168.0.200&200 OK

**Response example when setting field is left blank** application.smtp.host=&200 OK

**Interpretation** Acquire the address setting of the SMTP server.

**Allowed users** admin, operator, user

## Setting SMTP Server Address for VN-X35/235

**Format** /api/param?application.smtp.host=data

**Example** /api/param?application.smtp.host=192.168.0.200

**Example of Response** application.smtp.host&200 OK

**Interpretation** Change the address setting of the SMTP server. Specify the IP address or FQDN. The maximum FQDN size is 63 bytes. Specify as 0.0.0.0 when the SMTP server is not set. It is also possible to leave the setting field blank as follows. /api/param?application.smtp.host=%00

**Allowed users** admin, operator

## Getting SMTP Server Port Number Setting from VN-X35/235

**Format** /api/param?application.smtp.port

**Example of Response** application.smtp.port=25&200 OK

**Interpretation** Acquire the port number setting of the SMTP server.

**Allowed users** admin, operator, user

## Setting SMTP Server Port Number for VN-X35/235

**Format** /api/param?application.smtp.port=data

**Example** /api/param?application.smtp.port=25

**Example of Response** application.smtp.port&200 OK

**Interpretation** Change the port number setting of the SMTP server.

**Allowed users** admin, operator

## Getting Sender Mail Address Setting from VN-X35/235

**Format** /api/param?application.smtp.mailfrom

**Example of Response** application.smtp.mailfrom=somebody@somecompany.com&200 OK

**Interpretation** Acquire sender mail address setting. POP user name is used as local part of sender mail address when sender mail address setting is blank. When POP user name is also blank, the local-part is set to "vn\_x35@hostname" in VN-X35 or "vn\_x235@hostname" in VN-X235. When the hostname is also blank, SMTP server decide sender mail

address.

**Allowed users** admin, operator, user

## Setting Sender Mail Address for VN-X35/235

**Format** /api/param?application.smtp.mailfrom=data

**Example** /api/param?application.smtp.mailfrom=somebody@somecompany.com

**Example of Response** application.smtp.mailfrom&200 OK

**Interpretation** Change sender mail address setting. Maximum text number of sender mail address is 96.

Alphanumeric and followings are available.

! # \$ % & ' \* + - / = ? ^ \_ ` { } | ~

POP user name is used as local part of sender mail address when sender mail address setting is blank. When POP user name is also blank, the local-part is set to "vn\_x35@hostname" in VN-X35 or "vn\_x235@hostname" in VN-X235.

When the hostname is also blank, SMTP server decide sender mail address.

**Allowed users** admin, operator

## Getting "POP before SMTP" Setting from VN-X35/235

**Format** /api/param?application.smtp.type

**Example of Response** application.smtp.type=pbs&200 OK

**Interpretation** Acquire the "POP before SMTP" setting. "simple" is returned when this is set to off. "pbs" is returned when this is set to on.

**Allowed users** admin, operator, user

## Setting "POP before SMTP" for VN-X35/235

**Format** /api/param?application.smtp.type=data

**Example** /api/param?application.smtp.type=pbs

**Example of Response** application.event.smtp.type&200 OK

**Interpretation** Change the "POP before SMTP" setting. Specify as "simple" when setting to off and "pbs" when setting to on.

**Allowed users** admin, operator

## Getting POP Server Address Setting from VN-X35/235

**Format** /api/param?application.pop.host

**Example of Response** application.pop.host=192.168.0.200&200 OK

**Response example when setting field is left blank** application.pop.host=&200 OK

**Interpretation** Acquire the address setting of the POP server.

**Allowed users** admin, operator, user

## Setting POP Server Address for VN-X35/235

**Format** /api/param?application.pop.host=data

**Example** /api/param?application.pop.host=192.168.0.200

**Example of Response** application.pop.host&200 OK

**Interpretation** Change the address setting of the POP server. Specify the IP address or FQDN. The maximum FQDN size is 63 bytes. Specify as 0.0.0.0 when the POP server is not set. It is also possible to leave the setting field blank as follows. /api/param?application.pop.host=%00

**Allowed users** admin, operator

## Getting POP Server Port Number Setting from VN-X35/235

**Format** /api/param?application.pop.port

**Example of Response** application.pop.port=110&200 OK

**Interpretation** Acquire the port number setting of the POP server.

**Allowed users** admin, operator, user

## Setting POP Server Port Number for VN-X35/235

**Format** /api/param?application.pop.port=data

**Example** /api/param?application.pop.port=110

**Example of Response** application.pop.port&200 OK

**Interpretation** Change the port number setting of the POP server.

**Allowed users** admin, operator

## Getting POP Server User Name Setting from VN-X35/235

**Format** /api/param?application.pop.user

**Example of Response** application.pop.user=somename&200 OK

**Response example when setting field is left blank** application.pop.user=&200 OK

**Interpretation** Acquire the user name setting of the POP server. The user name is used as local part of sender mail address when sender mail address setting is blank. When the user name is blank, the local-part is set to "vn\_x35@hostname" in VN-X35 or "vn\_x235@hostname" in VN-X235.

**Example of Response** application.pop.user=somename&200 OK

**Example of Mail Address** somename@somecompany.com

**Allowed users** admin, operator, user

## Setting POP Server User Name for VN-X35/235

**Format** /api/param?application.pop.user=data

**Example** `/api/param?application.pop.user=somename`

**Example of Response** `application.pop.user&200 OK`

**Interpretation** Change the user name setting of the POP server. The maximum user name size is 64 bytes. Set as follows when this is to be left blank.

`/api/param?application.pop.user=%00`

The user name is used as local part of sender mail address when sender mail address setting is blank. When the user name is blank, the local-part is set to "vn\_x35@hostname" in VN-X35 or "vn\_x235@hostname" in VN-X235. When POP before SMTP is disabled, it is not necessary to set POP server settings other than POP user name setting.

**Example of setting** `/api/param?application.pop.user=somename`

**Example of Mail Address** `somename@somecompany.com`

Following characters must not be used in user name.

space ( ) < > [ ] : ; ¥ ,(comma)

**Allowed users** admin, operator

## Setting POP Server Password for VN-X35/235

**Format** `/api/param?application.pop.password=data`

**Example** `/api/param?application.pop.password=someword`

**Example of Response** `application.pop.password&200 OK`

**Interpretation** Change the password setting of the POP server. The maximum password size is 32 bytes. Set as follows when this is to be left blank. `/api/param?application.pop.password=%00`

**Allowed users** admin, operator

(Note: There is no API for reading passwords.)

## Getting FTP Server Address Setting from VN-X35/235

**Format** `/api/param?application.ftp.host`

**Example of Response** `application.ftp.host=192.168.0.200&200 OK`

**Response example when setting field is left blank** `application.ftp.host=&200 OK`

**Interpretation** Acquire the FTP server address setting used for FTP transmission via alarm.

**Allowed users** admin, operator, user

## Setting FTP Server Address for VN-X35/235

**Format** `/api/param?application.ftp.host=data`

**Example** `/api/param?application.ftp.host=10.0.0.200`

**Example of Response** `application.ftp.host&200 OK`

**Interpretation** Change the FTP server address setting used for FTP transmission via alarm. Specify the IP address or FQDN. The maximum FQDN size is 63 bytes. Specify as 0.0.0.0 when the FTP server is not set. It is also possible to

leave the setting field blank as follows. `/api/param?application.ftp.path=%00`

**Allowed users** admin, operator

## Getting FTP Server Path Setting from VN-X35/235

**Format** `/api/param?application.ftp.path`

**Example of Response** `application.ftp.path=subdir1&200 OK`

**Response example when setting field is left blank** `application.ftp.path=&200 OK`

**Interpretation** Acquire the FTP server directory setting used for FTP transmission via alarm.

**Allowed users** admin, operator, user

## Setting FTP Server Path for VN-X35/235

**Format** `/api/param?application.ftp.path=data`

**Example** `/api/param?application.ftp.path=subdir1`

**Example of Response** `application.ftp.path&200 OK`

**Interpretation** Change the FTP server directory setting used for FTP transmission. It is possible to set FTP transmission to a directory under the FTP server home directory by specifying that directory name. Use %2F to segment the directory. ("2F" is ASCII code of "/"). The maximum directory name size is 63 bytes.

**Example** `/api/param?application.ftp.path=subdir1%2Fsubdir2`

By leaving the setting blank as follows, FTP transmission will be set to the FTP server home directory.

`/api/param?application.ftp.path=%00`

**Allowed users** admin, operator

## Getting FTP Server User Name Setting from VN-X35/235

**Format** `/api/param?application.ftp.user`

**Example of Response** `application.ftp.user=somename&200 OK`

**Response example when setting field is left blank** `application.ftp.user=&200 OK`

**Interpretation** Acquire the FTP server user name setting used for FTP transmission via alarm.

**Allowed users** admin, operator

## Setting FTP Server User Name for VN-X35/235

**Format** `/api/param?application.ftp.user=data`

**Example** `/api/param?application.ftp.user=somename`

**Example of Response** `application.ftp.user&200 OK`

**Interpretation** Change the FTP server user name setting used for FTP transmission via alarm. The maximum user name size is 32 bytes. Set as follows when this setting is to be left blank.

`/api/param?application.ftp.user=%00`

**Allowed users** admin, operator

## Setting FTP Server Password for VN-X35/235

**Format** /api/param?application.ftp.password=data

**Example** /api/param?application.ftp.password=someword

**Example of Response** application.ftp.password&200 OK

**Interpretation** Change the FTP server password setting used for FTP transmission via alarm. The maximum password size is 32 bytes. Set as follows when this setting is to be left blank.

/api/param?application.ftp.password=%00

**Allowed users** admin, operator

(There is no API for Getting passwords.)

## Getting File Naming of Periodic FTP from VN-X35/235

**Format** /api/param?application.ftp.naming

**Example of Response** application.ftp.naming=default&200 OK

**Interpretation** Acquire file naming of periodic FTP. "default", "type1" or "type2" is returned. When default is set, the file name is as YYYYMMDDHHMMSS-NNN-2.jpg.

**Example** 20060207201315-001-2.jpg

When type1 is set, the file name is as \*\*\*YYYYMMDDHHMMSSNNN.jpg. "\*\*\*" can be gotten by another API,

/api/param?application.ftp.naming\_option.

**File Name Example** Camera\_20060207201315001.jpg

When type2 is set, the file name is as \*.jpg. "\*\*\*" can be gotten by another API,

/api/param?application.ftp.naming\_option.

**File Name Example** Camera.jpg

**Allowed users** admin, operator

## Setting File Naming of Periodic FTP for VN-X35/235

**Format** /api/param?application.ftp.naming=data

**Example** /api/param?application.ftp.naming=type1

**Example of Response** application.ftp.naming&200 OK

**Interpretation** Change file naming of periodic FTP. Specify "default", "type1" or "type2". When default is set, the file name is as YYYYMMDDHHMMSS-NNN-2.jpg.

**Example** 20060207201315-001-2.jpg

When type1 is set, the file name is as \*\*\*YYYYMMDDHHMMSSNNN.jpg. "\*\*\*" can be set by another API,

/api/param?application.ftp.naming\_option.

**File Name Example** Camera\_20060207201315001.jpg

When type2 is set, the file name is as `***.jpg`. `****` can be set by another API,

`/api/param?application.ftp.naming_option`.

**File Name Example** Camera.jpg

**Allowed users** admin, operator

## Getting User Define Name of File Naming from VN-X35/235

**Format** `/api/param?application.ftp.naming_option`

**Example of Response** `application.ftp.naming_option=abc&200 OK`

**Interpretation** Acquire user define name for file naming of periodic FTP. The maximum size is 16 bytes. When `/api/param?application.ftp.naming_option` is set to "type1", the file name is as `***YYMMDDHHMMSSNNN.jpg`, and `****` can be gotten by this API.

**File Name Example** Camera\_20060207201315001.jpg

When `/api/param?application.ftp.naming_option` is set to "type2", the file name is as `***.jpg` and `****` can be gotten by this API.

**File Name Example** Camera.jpg

**Allowed users** admin, operator

## Setting User Define Name of File Naming for VN-X35/235

**Format** `/api/param?application.ftp.naming_option=data`

**Example of Response** `application.ftp.naming_option&200 OK`

**Interpretation** Change user define name for file naming of periodic FTP. The maximum size is 16 bytes. When `/api/param?application.ftp.naming_option` is set to "type1", the file name is as `***YYMMDDHHMMSSNNN.jpg`, and `****` can be set by this API.

**File Name Example** Camera\_20060207201315001.jpg

When `/api/param?application.ftp.naming_option` is set to "type2", the file name is as `***.jpg` and `****` can be set by this API.

**File Name Example** Camera.jpg

**Allowed users** admin, operator

## Getting Parameters of Pre/Post Recording from VN-X35/235

**Format**

**To get Frame Rate** `/api/param?application.object.framerate`

**To get Pre Duration** `/api/param?application.object.prerec`

**To get Post Duration** `/api/param?application.object.postrec`

**Example of Response**

**For Frame Rate** `application.object.framerate=10&200 OK`

**For Pre Duration** /api/param?application.object.prerec=2&200 OK

**For Post Duration** /api/param?application.object.postrec=2&200 OK

**Interpretation** Acquire parameters for PrePost + ftp. These parameters are used when recftp is set as an alarm action.

**Allowed users** admin, operator, user

## Setting Parameters of Pre/Post Recording for VN-X35/235

**Format**

**To set Frame Rate** /api/param?application.object.framerate=5

**To set Pre Duration** /api/param?application.object.prerec=3

**To set Post Duration** /api/param?application.object.postrec=3

**Example of Response**

**For Frame Rate** application.object.framerate&200 OK

**For Pre Duration** /api/param?application.object.prerec&200 OK

**For Post Duration** /api/param?application.object.postrec&200 OK

**Interpretation** Change parameters for PrePost + ftp. These parameters are used when recftp is set as an alarm action.

Specify 15, 10, 7.5, 6, 5, 3, 2, or 1 for frame rate. Maximum Pre/Post duration is 60 seconds. Setting zero to Pre and Post duration is invalid.

**Allowed users** admin, operator

## Getting Alarm Output Time Setting from VN-X35/235

**Format** /api/param?peripheral.output\_pin.pin(Number).duration

**Example** /api/param?peripheral.output\_pin.pin(1).duration

**Example of Response** peripheral.output\_pin.pin(1).duration=500&200 OK

**Interpretation** Acquire the current alarm output duration in millisecond. Specify 1 or 2 to Number. When returned value is 0, it means infinite output.

**Allowed users** admin, operator, user

## Setting Alarm Output Time for VN-X35/235

**Format** /api/param?peripheral.input\_pin.pin(Number).duration=data

**Example** /api/param?peripheral.input\_pin.pin(1).duration=50

**Example of response** peripheral.input\_pin.pin(1).duration&200 OK

**Interpretation** Change the alarm output duration in millisecond. Specify 1 or 2 to Number. Specify 0, or 100 to 5000 for the duration. When 0 is set, output duration becomes infinite.

**Allowed users** admin, operator

## Getting Alarm Output Status from VN-X35/235

**Format** /api/param?peripheral.output\_pin.pin(Number).status

**Example of Response** peripheral.output\_pin.pin(1).status=make&200 OK

**Interpretation** Acquire the current alarm output status. Specify 1 or 2 to Number. Either make or break will be returned.

**Allowed users** admin, operator, user

## Changing Alarm Output of VN-X35/235

**Format** /api/param?peripheral.output\_pin.pin(Number).status=data

**Example** /api/param?peripheral.output\_pin.pin(1).status=break

**Example of Response** peripheral.output\_pin.pin(1).status&200 OK

**Interpretation** Change the alarm output. Specify 1 or 2 to Number. Specify "make" or "break" to data.

When the alarm output time is zero, alarm output is changed as this API specifies. When the alarm output time is not zero, alarm output is changed as this API specifies, then alarm output is changed again after the alarm output time.

**Allowed users** admin, operator

## 6.7. Digital PTZ

The APIs below are related to digital PTZ control. These are equivalent to the features on the PTZ page of the WEB setting page. Refer to the instruction manual for details on the PTZ page.

### (1) Settings for PTZ Control

#### Getting Auto Return Mode from VN-X35/235

**Format** /api/param?camera.motion.auto\_return.mode

**Example of response** camera.motion.auto\_return.mode=home&200 OK

**Interpretation** Acquire Auto Return mode. "home" or "auto\_patrol(0)" will be returned.

**Allowed users** admin, operator, user

#### Setting Auto Return Mode for VN-X35/235

**Format** /api/param?camera.motion.auto\_return.mode=data

**Example of Response** camera.motion.auto\_return.mode&202

Accepted(camera.status=save)

**Interpretation** Change Auto Return mode. Specify "home" or "auto\_patrol(0)". The change is saved by the API, camera.status=save. If the change is not saved, the setting is restored by reboot.

**Allowed users** admin, operator

#### Getting Timeout of Auto Return from VN-X35/235

**Format** /api/param?camera.motion.auto\_return.timeout

**Example of response** camera.motion.auto\_return.timeout=60&200 OK

**Interpretation** Acquire timeout of Auto Return in seconds.

**Allowed users** admin, operator, user

## Setting Timeout of Auto Return for VN-X35/235

**Format** /api/param?camera.motion.auto\_return.timeout=data

**Example of Response** camera.motion.auto\_return.timeout&202

Accepted(camera.status=save)

**Interpretation** Change timeout of Auto Return in seconds. Specify 60, 120, 180, 300, 600, 1200, 1800 or 3600. The change is saved by the API, camera.status=save. If the change is not saved, the setting is restored by reboot.

**Allowed users** admin, operator

## Getting Auto Return Status from VN-X35/235

**Format** /api/param?camera.motion.auto\_return.status

**Example of response** camera.motion.auto\_return.status=on&200 OK

**Interpretation** Acquire status of Auto Return. "on" or "off" will be returned.

**Allowed users** admin, operator, user

## Setting Auto Return Status for VN-X35/235

**Format** /api/param?camera.motion.auto\_return.status=data

**Example of Response** camera.motion.auto\_return.status&202

Accepted(camera.status=save)

**Interpretation** Change status of Auto Return. Specify "on" or "off" to change the status. Specify "start" or "stop" for manual operation. "on" or "off" is saved by the API, camera.status=save. If the change is not saved, the setting is restored by reboot.

**Allowed users** admin, operator

## Getting Upper Limit of Digital Zoom from VN-X35/235

**Format** /api/param?camera.motion.zoom.digitallimit

**Example of response** camera.motion.zoom.digitallimit=2&200 OK

**Interpretation** Acquire upper limit of digital zoom. 1, 2, 4 or 8 will be returned. The value is based on angle of QuadVGA. For example, when the limit is 4, x4.00 is upper limit for QuadVGA, and x2.00 is upper limit for VGA because VGA and QuadVGA show same angle at those zoom values. When the limit is 4, x1.00 is upper limit for QVGA.

**Allowed users** admin, operator, user

## Setting Upper Limit of Digital Zoom for VN-X35/235

**Format** /api/param?camera.motion.zoom.digitallimit=data

**Example of Response** camera.motion.zoom.digitallimit&202

Accepted(camera.status=save)

**Interpretation** Change upper limit of digital zoom. Specify 1, 2, 4 or 8. The value is based on angle of QuadVGA.

For example, when the limit is 4, x4.00 is upper limit for QuadVGA, and x2.00 is upper limit for VGA because VGA and QuadVGA show same angle at those zoom values. When the limit is 4, x1.00 is upper limit for QVGA. The change is saved by the API, camera.status=save. If the change is not saved, the setting is restored by reboot.

**Allowed users** admin, operator

## Getting Speed of Going to Preset Position from VN-X35/235

**Format** /api/param?camera.motion.position.speed

**Example of response** camera.motion.position.speed=100&200 OK

**Interpretation** Acquire speed of going to preset position. Value from 0 to 100 is returned. 100 is fastest. The speed is 4 steps internally. The speed is applied also to preset position of auto patrol.

**Allowed users** admin, operator, user

## Setting Speed of Going to Preset Position for VN-X35/235

**Format** /api/param?camera.motion.position.speed=data

**Example to set horizontal** /api/param?camera.motion.position.speed=100

**Example of Response** camera.motion.position.speed&202 Accepted(camera.status=save)

**Interpretation** Set speed of going to preset position. Specify from 0 to 100. 5 is horizontal. 100 is fastest. The speed is 4 steps internally. The speed is applied also to preset position of auto patrol. The change is saved by the API, camera.status=save. If the change is not saved, the setting is restored by reboot.

**Allowed users** admin, operator

## (2) PTZ Control

### Getting Pan Position from VN-X35/235

**Format** /api/param?camera.motion.pan

**Example of response** camera.motion.pan=s100&200 OK

**Interpretation** Acquire current pan position, left edge of current area, in pixels. Value from 0 to 1278 is returned. "s" is added before the value.

**Allowed users** admin, operator, user

### Moving to Specified Pan Position for VN-X35/235

**Format** /api/param?camera.motion.pan=data

**Example to move to absolute 100 pixels** /api/param?camera.motion.pan=s100

**Example to move to relative 45 pixels** /api/param?camera.motion.pan=+s45

**Example of Response** camera.motion.pan&200 OK

**Interpretation** Move to specified pan position, left edge of target area, in pixels. To move to absolute position, specify from 0 to 1278 with "s". Moved position can be adjusted automatically to prevent showing invalid area.

**Allowed users** admin, operator

## Pan Operation for VN-X35/235

**Format** /api/param?camera.motion.pan.status=data

**Example to start pan** /api/param?camera.motion.pan.status=start

**Example of Response** camera.motion.pan.status&200 OK

**Interpretation** Start or stop pan operation. Specify start or stop.

**Allowed users** admin, operator

## Setting Direction of Pan Operation for VN-X35/235

**Format** /api/param?camera.motion.pan.mode=data

**Example to set to left** /api/param?camera.motion.pan.mode=left

**Example of Response** camera.motion.pan.mode&200 OK

**Interpretation** Set direction of pan operation. Specify left or right.

**Allowed users** admin, operator

## Setting Speed of Pan Operation for VN-X35/235

**Format** /api/param?camera.motion.pan.speed=data

**Example to set maximum speed** /api/param?camera.motion.pan.speed=100

**Example of Response** camera.motion.pan.speed&200 OK

**Interpretation** Set speed of pan operation. Specify 0 to 100. The speed is 8 steps internally.

**Allowed users** admin, operator

## Getting Pan Operation Status from VN-X35/235

**Format** /api/param?camera.motion.pan.status

**Example of Response** camera.motion.pan.status=moving&200 OK

**Interpretation** Acquire current pan status. "moving" or "stop" is returned.

**Allowed users** admin, operator, user

## Getting Tilt Position from VN-X35/235

**Format** /api/param?camera.motion.tilt

**Example of response** camera.motion.tilt=s45&200 OK

**Interpretation** Acquire current tilt position, top edge of current area, in pixels. Value from 0 to 958 is returned. "s" is added before the value.

**Allowed users** admin, operator, user

## Moving to Specified Tilt Position for VN-X35/235

**Format** /api/param?camera.motion.tilt=data

**Example to move to absolute 100 pixels** /api/param?camera.motion.tilt=s100

**Example to move to relative 45 degrees** /api/param?camera.motion.tilt=+s45

**Example of Response** camera.motion.tilt&200 OK

**Interpretation** Move to specified tilt position, top edge of target area, in pixels. To move to absolute position, specify from 0 to 958 with "s". Moved position can be adjusted automatically to prevent showing invalid area.

**Allowed users** admin, operator

## Tilt Operation for VN-X35/235

**Format** /api/param?camera.motion.tilt.status=data

**Example to start pan** /api/param?camera.motion.tilt.status=start

**Example of Response** camera.motion.tilt.status&200 OK

**Interpretation** Start or stop tilt operation. Specify start or stop.

**Allowed users** admin, operator

## Setting Direction of Tilt Operation for VN-X35/235

**Format** /api/param?camera.motion.tilt.mode=data

**Example to set to up** /api/param?camera.motion.tilt.mode=up

**Example of Response** camera.motion.tilt.mode&200 OK

**Interpretation** Set direction of tilt operation. Specify up or down.

**Allowed users** admin, operator

## Setting Speed of Tilt Operation for VN-X35/235

**Format** /api/param?camera.motion.tilt.speed=data

**Example to set maximum speed** /api/param?camera.motion.tilt.speed=100

**Example of Response** camera.motion.tilt.speed&200 OK

**Interpretation** Set speed of tilt operation. Specify 0 to 100. The speed is 8 steps internally.

**Allowed users** admin, operator

## Getting Tilt Operation Status from VN-X35/235

**Format** /api/param?camera.motion.tilt.status

**Example of Response** camera.motion.tilt.status=moving&200 OK

**Interpretation** Acquire current tilt status. "moving" or "stop" is returned.

**Allowed users** admin, operator, user

## Getting Zoom Position from VN-X35/235

**Format** /api/param?camera.motion.zoom

**Example of response** camera.motion.zoom=x2.00&200 OK

**Interpretation** Acquire current zoom multiple. Value from 0.25 to 8.00 is returned with "x". Max/min value depends on current resolution. When resolution is QuadVGA, zoom multiple is from 1.00 to 8.00. When resolution is VGA, zoom multiple is from 0.50 to 4.00. When resolution is QVGA, zoom multiple is from 0.25 to 2.00.

**Allowed users** admin, operator, user

## Moving to Specified Zoom Position for VN-X35/235

**Format** /api/param?camera.motion.zoom=data

**Example to move to absolute multiple, x2.0** /api/param?camera.motion.zoom=x2.00

**Example to move to relative multiple, 1.5 Tele** /api/param?camera.motion.zoom=+x1.5

**Example to move to relative multiple, 1.5 Wide** /api/param?camera.motion.zoom=-x1.5

**Example of Response** camera.motion.zoom&200 OK

**Interpretation** Move to specified zoom. To move to absolute multiple, specify from 0.25 to 8.00 with "x" or absolute value, specify from 0.00 to 99.99. When specifying multiple, Max/min value depends on current resolution. When resolution is QuadVGA, zoom multiple is from 1.00 to 8.00. When resolution is VGA, zoom multiple is from 0.50 to 4.00. When resolution is QVGA, zoom multiple is from 0.25 to 2.00. Moved position can be adjusted automatically to prevent showing invalid area. To show same angle after changing resolution, change zoom multiple as followings.

Resolution change from VGA to QVGA: Double zoom multiple

Resolution change from QVGA to QuadVGA: Quarter zoom multiple

When specifying from 0.00 to 99.99, resolution does not have to be cared.

**Allowed users** admin, operator

## Zoom Operation for VN-X35/235

**Format** /api/param?camera.motion.zoom.status=data

**Example to start zoom** /api/param?camera.motion.zoom.status=start

**Example of Response** camera.motion.zoom.status&200 OK

**Interpretation** Start or stop zoom operation. Specify start or stop.

**Allowed users** admin, operator

## Setting Direction of Zoom Operation for VN-X35/235

**Format** /api/param?camera.motion.zoom.mode=data

**Example to set to Tele** /api/param?camera.motion.zoom.mode=in

**Example of Response** camera.motion.zoom.mode&200 OK

**Interpretation** Set direction of zoom operation. Specify in or out.

**Allowed users** admin, operator

## Setting Speed of Zoom Operation for VN-X35/235

**Format** /api/param?camera.motion.zoom.speed=data

**Example to set maximum speed** /api/param?camera.motion.zoom.speed=100

**Example of Response** camera.motion.zoom.speed&200 OK

**Interpretation** Set speed of zoom operation. Specify 0 to 100. The speed is 4 steps internally.

**Allowed users** admin, operator

## Getting Zoom Operation Status from VN-X35/235

**Format** /api/param?camera.motion.zoom.status

**Example of Response** camera.motion.zoom.status=moving&200 OK

**Interpretation** Acquire current zoom status. "moving" or "stop" is returned.

**Allowed users** admin, operator, user

## Moving Specified Position to Center for VN-X35/235

**Format** /api/param?camera.motion.clickoncenter=X-Y

**Example of Response** camera.motion.clickoncenter&200 OK

**Example to move (320, 240) to center (pixel)**

/api/param?camera.motion.clickoncenter=s160-s120

**Example to move (320, 240) to center (percentage)**

/api/param?camera.motion.clickoncenter=25.00-25.00

**Interpretation** Moving specified position to center of image. To move to X position, specify from s0 to s1279 or 0.00 to 100.00. To move to Y position, specify from s0 to s959 or 0.00 to 100.00.

**Allowed users** admin, operator

### (3) Preset Position

## Getting Current Preset Position from VN-X35/235

**Format** /api/param?camera.status

**Example of response** `camera.status=3&200 OK`

**Interpretation** Acquire current preset position after moving to preset position. "none" is returned after moved from preset position.

**Allowed users** admin, operator, user

## Getting Status of Specified Preset Position from VN-X35/235

**Format** `/api/param?camera.position(number).status`

**Example of response** `camera.position(3).status=unregistered&200 OK`

**Interpretation** Acquire current status of specified preset position. Specify from 0 to 19 as position number. "unregistered" or "registered" is returned.

**Allowed users** admin, operator, user

## Register Current Position as Preset Position for VN-X35/235

**Format** `/api/param?camera.position(number).status=save`

**Example of Response** `camera.position(3).status&200 OK`

**Interpretation** Save current position as preset position. Specify from 0 to 19 as position number.

**Allowed users** admin, operator

## Initialize Preset Position for VN-X35/235

**Format** `/api/param?camera.position(number).status=initialize`

**Example of Response** `camera.position(3).status&200 OK`

**Interpretation** Initialize specified preset position. Specify from 0 to 19 as position number. Position number 0 is home position and it is registered with default settings when initialized. Other positions are unregistered by initializing.

**Allowed users** admin, operator

## Moving to Preset Position for VN-X35/235

**Format** `/api/param?camera.position(number).status=goto`

**Example of Response** `camera.position(3).status&200 OK`

**Interpretation** Move to specified preset position. Specify from 0 to 19 as position number.

**Allowed users** admin, operator

## Getting Title of Preset Position from VN-X35/235

**Format** `/api/param?camera.position(number).comment`

**Example of response** `camera.position(3).comment=entrance&200 OK`

**Interpretation** Acquire title of specified preset position. Specify from 0 to 19 as position number.

**Allowed users** admin, operator, user

## Setting Title to Preset Position for VN-X35/235

**Format** `/api/param?camera.position(number).comment=data`

**Example of Response** `camera.position(3).status&200 OK`

**Interpretation** Set title to specified preset position. Specify from 0 to 19 as position number. Maximum characters is 32. To erase title, specify %00, i.e. 0x25 0x30 0x30 in binary data. Use %20 to set space.

**Allowed users** admin, operator

## 6.8. Auto Patrol

The APIs below are related to Auto Patrol. These are equivalent to the features on the AutoPatrol page of the WEB setting page. Refer to the instruction manual for details on the AutoPatrol page page.

### Start/Stop of Auto Patrol for VN-X35/235

**Format** `/api/param?camera.motion.auto_patrol(0).status=data`

**Example to start auto patrol** `/api/param?camera.motion.auto_patrol(0).status=start`

**Example of Response** `camera.motion.auto_patrol(0).status&200 OK`

**Interpretation** Start/stop a mode of auto patrol. Specify start or stop.

**Allowed users** admin, operator

### Getting Status of Auto Patrol from VN-X35/235

**Format** `/api/param?camera.motion.auto_patrol(0).status`

**Example of response** `camera.motion.auto_patrol(0).status=moving&200 OK`

**Interpretation** Acquire current status of auto patrol. "moving" or "stop" is returned.

**Allowed users** admin, operator, user

### Getting Preset Postion Number of Auto Patrol from VN-X35/235

**Format** `/api/param?camera.motion.auto_patrol(0).position(number)`

**Example to get preset position number of patrol nuber 3**

`/api/param?camera.motion.auto_patrol(0).position(3)`

**Example of response** `camera.motion.auto_patrol(0).position(3)=5&200 OK`

**Interpretation** Acquire preset position number of specified patrol number of auto patrol. Patrol number is from 0 to 19. Preset position number from 0 to 19 is returned.

**Allowed users** admin, operator, user

### Setting Preset Postion Number of Auto Patrol for VN-X35/235

**Format** `/api/param?camera.motion.auto_patrol(0).position(number)=data`

**Example of Response** `camera.motion.auto_patrol(0).position(3)&202`

`Accepted(camera.motion.auto_patrol.status=save)`

**Interpretation** Set preset position number of specified patrol number of auto patrol. Patrol number is from 0 to 19. Specify preset position number from 0 to 19. The change is saved by the API, `camera.motion.auto_patrol.status=save`. If the change is not saved, the setting is restored by reboot.

**Allowed users** admin, operator

## Getting Duration of Auto Patrol from VN-X35/235

**Format** `/api/param?camera.motion.auto_patrol(0).position(number).duration`

**Example to get duration of patrol nuber 3**

`/api/param?camera.motion.auto_patrol(0).position(3).duration`

**Example of response** `camera.motion.auto_patrol(0).position(3).duration=30&200 OK`

**Interpretation** Acquire duration of specified patrol number of auto patrol. Patrol number is from 0 to 19. 0, 10, 20, 30, 45, 60, or 120 is returned. 0 means skip. 10 means 10 seconds.

**Allowed users** admin, operator, user

## Setting Duarion of Auto Patrol for VN-X35/235

**Format** `/api/param?camera.motion.auto_patrol(0).position(number).duration=data`

**Example of Response** `camera.motion.auto_patrol(0).position(3).duration&202`

`Accepted(camera.motion.auto_patrol.status=save)`

**Interpretation** Set duration of specified patrol number of auto patrol. Patrol number is from 0 to 19. Specify 0, 10, 20, 30, 45, 60, or 120. 0 means skip. 10 means 10 seconds. The change is saved by the API, `camera.motion.auto_patrol.status=save`. If the change is not saved, the setting is restored by reboot.

**Allowed users** admin, operator

## Getting Speed of Auto Patrol from VN-X35/235

**Format** `/api/param?camera.motion.auto_patrol(0).position(number).speed`

**Example to get speed of patrol nuber 3**

`/api/param?camera.motion.auto_patrol(0).position(3).speed`

**Example of response** `camera.motion.auto_patrol(0).position(3).speed=30.00&200 OK`

**Interpretation** Acquire speed of specified patrol number of auto patrol. Patrol number is from 0 to 19.

**Allowed users** admin, operator, user

## Setting Speed of Auto Patrol for VN-X35/235

**Format** `/api/param?camera.motion.auto_patrol(0).position(number).speed=data`

**Example to set maximum speed from patrol nuber 3 to 4**

`/api/param?camera.motion.auto_patrol(0).position(3).speed=100.00`

**Example of Response** `camera.motion.auto_patrol(0).position(3).speed&202`

`Accepted(camera.motion.auto_patrol.status=save)`

**Interpretation** Set speed of specified patrol number of auto patrol. Patrol number is from 0 to 19. Specify from 0.00 to 100.00. 0 means skip. The change is saved by the API, camera.motion.auto\_patrol.status=save. If the change is not saved, the setting is restored by reboot.

**Allowed users** admin, operator

## Saving Preset Position Number/Duration of Auto Patrol for VN-X35/235

**Format** `/api/param?camera.motion.auto_patrol(0).status=save`

**Example of Response** `camera.motion.auto_patrol(0).status&202`

`Accepted(camera.motion.auto_patrol.status=save)`

**Interpretation** Save preset position number and duration of auto patrol.

**Allowed users** admin, operator

## 6.9. Privacy Masking

The APIs below are related to privacy masking. These are equivalent to the features on the Privacy Masking page of the WEB setting page. Refer to the instruction manual for details on the Privacy Masking page.

### Getting Privacy Masking On/Off Status from VN-X35/235

**Format** `/api/param?camera.private_mask.status`

**Example of response** `camera.private_mask.status=on&200 OK`

**Interpretation** Acquire the on/off status of privacy masking.

**Allowed users** admin, operator, user

### Setting Privacy Masking to On/Off for VN-X35/235

**Format** `/api/param?camera.private_mask.status=data`

**Example of Response** `camera.private_mask.status&202 Accepted(camera.status=save)`

**Interpretation** Change the on/off status of privacy masking. The change is saved by the API, camera.status=save. If the change is not saved, the setting is restored by reboot.

**Allowed users** admin, operator

### Getting Privacy Masking Color from VN-X35/235

**Format** `/api/param?camera.private_mask.color`

**Example of response** `camera.private_mask.color=ffffff&200 OK`

**Interpretation** Acquire the color of privacy masking. RGB values are returned as hexadecimal number. For example, ffffff is white, ff0000 is red, 00ff00 is green, and 0000ff is blue.

**Allowed users** admin, operator, user

## Setting Privacy Masking Color for VN-X35/235

**Format** /api/param?camera.private\_mask.color=data

**Example of Response** camera.private\_mask.color&202 Accepted(camera.status=save)

**Interpretation** Change the color of privacy masking. Specify RGB values by hexadecimal number. For example, ffffff for white, ff0000 for red, 00ff00 for green, and 0000ff for blue. The change is saved by the API, camera.status=save. If the change is not saved, the setting is restored by reboot.

**Allowed users** admin, operator

## 6.10. Motion Detect

The APIs below are related to motion detection. These are equivalent to the features on the Motion Detection page of the WEB setting page. Refer to the instruction manual for details on the Motion Detection page.

### Getting Motion Detect On/Off Status from VN-X35/235

**Format** /api/param?camera.detection.status

**Example of response** camera.detection.status=on&200 OK

**Interpretation** Acquire the on/off status of motion detect.

**Allowed users** admin, operator, user

### Setting Motion Detect to On/Off for VN-X35/235

**Format** /api/param?camera.detection.status=data

**Example of Response** camera.detection.status&202 Accepted(camera.status=save)

**Interpretation** Change the on/off status of motion detect. The change is saved by the API, camera.status=save. If the change is not saved, the setting is restored by reboot.

**Allowed users** admin, operator

### Getting Motion Detect Sensitivity from VN-X35/235

**Format** /api/param?camera.detection.level

**Example of response** camera.detection.level=20&200 OK

**Interpretation** Acquire the motion detect sensitivity. A value between 0 to 100 will be returned. The larger the value, the higher will be the sensitivity.

**Allowed users** admin, operator, user

## Setting Motion Detect Sensitivity for VN-X35/235

**Format** /api/param?camera.detection.level=data

**Example of response** camera.detection.level&202 Accepted(camera.status=save)

**Interpretation** Change the motion detect sensitivity. Specify a value between 0 to 100. The larger the value, the higher will be the sensitivity. The change is saved by the API, camera.status=save. If the change is not saved, the setting is restored by reboot.

**Allowed users** admin, operator

## Getting Motion Detect Mask from VN-X35/235

**Format** /api/param?camera.detection.area

**Example of response** camera.detection.area=00010203040506070809&200 OK

**Interpretation** Acquire the mask of motion detect. 20 ASCII characters will be returned.

The screen of VN-X35/235 is made up of  $10 \times 8 = 80$  blocks, and mask can be set to on/off for each block. This information can be represented in 80 bits = 10-byte hexadecimal. (Response is returned in ASCII character strings. Therefore, 20 characters will be returned.) The bit string will appear as follows when mask is set to off for the top left block only.

10000000 00000000 00000000 ,,,

Storage in bytes will begin from the LSB and represented in a hexadecimal value as shown below.

01 00 00 00 00 00 00 00 00 00

The hexadecimal value denotes the 20 ASCII characters acquired via this API that are expressed in ASCII codes. For example, the following character string will be returned when only the top left and bottom right blocks are masked.

camera.detection.area=0100000000000000000080

**Allowed users** admin, operator, user

## Setting Motion Detect Mask for VN-X35/235

**Format** /api/param?camera.detection.area=data

**Example** /api/param?camera.detection.area=00010203040506070809

**Example of response** camera.detection.area&202 Accepted(camera.status=save)

**Interpretation** Change the motion detect mask. Specify using a 20 ASCII character string. Refer to the item on "Getting Motion Mask from VN-X35/235" on the interpretation of this character string. To mask all blocks, specify all zeros in the ASCII character string. The change is saved by the API, camera.status=save. If the change is not saved, the setting is restored by reboot.

**Allowed users** admin, operator

## 6.11. Network Basics

The APIs below are related to the basics of networks. These are equivalent to the features on the Basic page of the WEB setting page. Refer to the instruction manual for details on the Basic page.

### Enabling Network Setting Changes

**Format** `/api/param?network.interface.status=restart`

**Example of Response** `network.interface.status&200 OK`

**Interpretation** Changes of following network parameters become valid by this API.

DHCP, IP Address, Subnet Mask, TTL, MTU, TOS, Negotiation, IPv6

Changes are not reflected in the actions until this API is used. APIs to get settings of those parameters return previous values until this API is used. When this API is issued, VN-X35/235 reboots in about 1 minute.

**Allowed user** admin

### Getting DHCP Setting from VN-X35/235

**Format** `/api/param?network.interface.dhcp.status`

**Example of Response** `network.interface.dhcp.status=off&200 OK`

**Interpretation** Acquire the current DHCP setting.

**Allowed users** admin, operator, user

### Setting DHCP for VN-X35/235

**Format** `/api/param?network.interface.dhcp.status=data`

**Example** `/api/param?network.interface.dhcp.status=on`

**Example of Response**

`network.interface.dhcp.status&202 Accepted(network.interface.status=restart)`

**Interpretation** Change the DHCP setting. Specify "on" or "off". To validate the change, use

"network.interface.status=restart" API that reboots VN-X35/235 in about 1 minute.

**Allowed user** admin

### Getting IP Address from VN-X35/235

**Format** `/api/param?network.interface.ip`

**Example of Response** `network.interface.ip=192.168.0.2&200 OK`

**Interpretation** Acquire the current IP address.

**Allowed users** admin, operator, user

### Setting IP Address for VN-X35/235

**Format** `/api/param?network.interface.ip=data`

**Example** `/api/param?network.interface.ip=192.168.0.2`

**Example of Response**

`network.interface.ip&202 Accepted(network.interface.status=restart)`

**Interpretation** Change the IP address. To validate the change, use "network.interface.status=restart" API that reboots VN-X35/235 in about 1 minute. Set appropriate combination of IP address, subnet mask and default gateway before "network.interface.status=restart".

**Allowed user** admin

## Getting Subnet Mask from VN-X35/235

**Format** `/api/param?network.interface.subnetmask`

**Example of Response** `network.interface.subnetmask=255.255.255.0&200 OK`

**Interpretation** Acquire the current subnet mask.

**Allowed users** admin, operator, user

## Setting Subnet Mask for VN-X35/235

**Format** `/api/param?network.interface.subnetmask=data`

**Example** `/api/param?network.interface.subnetmask=255.0.0.0`

**Example of Response**

`network.interface.subnetmask&202 Accepted(network.interface.status=restart)`

**Interpretation** Change the subnet mask. To validate the change, use "network.interface.status=restart" API that reboots VN-X35/235 in about 1 minute. Set appropriate combination of IP address, subnet mask and default gateway before "network.interface.status=restart".

**Allowed user** admin

## Getting Default Gateway from VN-X35/235

**Format** `/api/param?network.gateway(version)`

**Example to get default gateway of IPv4** `/api/param?network.gateway(ipv4)`

**Example of Response** `network.gateway(ipv4)=192.168.0.254&200 OK`

**Interpretation** Acquire the current default gateway. Specify ipv4 or ipv6.

**Allowed users** admin, operator, user

## Setting Default Gateway for VN-X35/235

**Format** `/api/param?network.gateway(ipv4)=data`

**Example** `/api/param?network.gateway(ipv4)=192.168.0.254`

**Example of Response** `network.gateway&200 OK`

**Interpretation** Change the default gateway. To set static default gateway, disable DHCP. Default gateway can not be

changed when DHCP is enabled. Specify IP address in same segment with VN-X35/235's IP address. Specify 0.0.0.0 to delete default gateway setting. Default gateway of IPv6 can not be set.

**Allowed user** admin

## Getting Host Name from VN-X35/235

**Format** /api/param?network.hostname

**Example of Response** network.hostname=localhost&200 OK

**Interpretation** Acquire the current host name.

**Allowed users** admin, operator, user

## Setting Host Name for VN-X35/235

**Format** /api/param?network.hostname=data

**Example** /api/param?network.hostname=somename

**Example of Response** network.hostname&200 OK

**Interpretation** Change the host name. Characters that may be used for the host name are alphanumerics, hyphens (-) and period. Maximum size is 63 bytes.

Specify as %00 when the host name setting is to be left blank.

**Example when leaving field blank** /api/param?network.hostname=%00

**Allowed user** admin

## Getting DNS Server On/Off Status from VN-X35/235

**Format** /api/param?network.dns.status

**Example of Response** network.dns.status=off&200 OK

**Interpretation** Acquire the on/off status of the DNS server. Either on or off will be returned.

**Allowed users** admin, operator, user

## Setting DNS Server Status to On/Off, or Validate Changes for VN-X35/235

**Format** /api/param?network.dns.status=data

**Example** /api/param?network.dns.status=on

**Example of Response** network.dns.status&200 OK

**Interpretation** Change status of DNS server setting, or validate changes to DNS server settings. Specify "on", "off" or "restart". Changes of DNS server settings become valid by "restart".

**Allowed users** admin, operator

## Getting DNS Server IP Address from VN-X35/235

**Format** /api/param?network.dns.ip

**Example of Response** `network.dns.ip=10.0.0.150&200 OK`

**Interpretation** Acquire IP address of DNS server.

**Allowed users** admin, operator, user

## Setting DNS Server IP Address for VN-X35/235

**Format** `/api/param?network.dns.ip=data`

**Example** `/api/param?network.dns.ip=10.0.0.150`

**Example of Response**

`network.dns.ip&202 Accepted(network.dns.status=restart)`

**Interpretation** Change IP address of DNS server. To validate the change, use "network.dns.status=restart" API.

**Allowed users** admin, operator

## Getting IPv6 status from VN-X35/235

**Format** `/api/param?network.interface.ipv6.status`

**Example of Response** `network.interface.ipv6.status=off&200 OK`

**Interpretation** Acquire IPv6 status. "on" or "off" is returned.

**Allowed users** admin, operator, user

## Setting IPv6 status for VN-X35/235

**Format** `/api/param?network.interface.ipv6.status=data`

**Example** `/api/param?network.interface.ipv6.status=on`

**Example of Response**

`network.interface.ipv6.status&202 Accepted(network.dns.status=restart)`

**Interpretation** Change IPv6 status. To validate the change, use "network.interface.status=restart" API that reboots VN-X35/235 in about 1 minute.

**Allowed users** admin, operator

## Getting Link Local Address of IPv6 from VN-X35/235

**Format** `/api/param?network.interface.ipv6.link_local(Number)`

**Example** to get first link local address

`/api/param?network.interface.ipv6.link_local(1)`

**Example of Response**

`network.interface.ipv6.link_local(1)=fe80::280:88ff:fe41:400c&200 OK`

**Interpretation** Acquire the link local address of IPv6. Specify from 1 to 8 for Number, and get addresses from 1 till vacant address is returned. There is no API for setting link local address of IPv6.

**Allowed users** admin, operator, user

## Getting Global Address of IPv6 from VN-X35/235

**Format** /api/param?network.interface.ipv6.global(Number)

**Example** to get first global address /api/param?network.interface.ipv6.global(1)

**Example of Response when no global address is set** network.interface.ipv6.global(1)=&200  
OK

**Interpretation** Acquire the global address of IPv6. Specify from 1 to 8 for Number, and get addresses from 1 till vacant address is returned. There is no API for setting global address of IPv6.

**Allowed users** admin, operator, user

## Getting MAC Address from VN-X35/235

**Format** /api/param?network.interface.mac

**Example of Response** network.interface.mac=008088001AEF&200 OK

**Interpretation** Acquire the MAC address. A 12-byte ASCII character string will be returned. There is no API for setting MAC address.

**Allowed users** admin, operator, user

## 6.12. Network Details

The APIs below are related to network details. These are equivalent to the features on the Details page of the WEB setting page. Refer to the instruction manual for details on the Details page.

### Getting TOS Value of JPEG from VN-X35/235

**Format** /api/param?network.interface.dscp.video.jpeg

**Example of Response** network.interface.dscp.video.jpeg=56&200 OK

**Interpretation** Acquire TOS that includes DHCP field for JPEG.

**Allowed users** admin, operator, user

### Setting TOS Value of JPEG for VN-X35/235

**Format** /api/param?network.interface.dscp.video.jpeg=data

**Example** /api/param?network.interface.dscp.video.jpeg=56

**Example of Response**

network.interface.dscp.video.jpeg&202

Accepted(network.interface.status=restart)

**Interpretation** Change TOS that includes DHCP field for JPEG. The range of set value is between 0 to 255 though MSB 6 bits in the value is valid. To validate the change, use "network.interface.status=restart" API.

**Allowed user** admin

### Getting TOS Value of MPEG-4 from VN-X35/235

**Format** /api/param?network.interface.dscp.video.mpeg

**Example of Response** network.interface.dscp.video.mpeg=56&200 OK

**Interpretation** Acquire TOS that includes DHCP field for MPEG-4.

**Allowed users** admin, operator, user

### Setting TOS Value of MPEG-4 for VN-X35/235

**Format** /api/param?network.interface.dscp.video.mpeg=data

**Example** /api/param?network.interface.dscp.video.mpeg=56

**Example of Response**

```
network.interface.dscp.video.mpeg&202
```

```
Accepted(network.interface.status=restart)
```

**Interpretation** Change TOS that includes DHCP field for MPEG-4. The range of set value is between 0 to 255 though MSB 6 bits in the value is valid. To validate the change, use "network.interface.status=restart" API.

**Allowed user** admin

### Getting TOS Value of Audio from VN-X35/235

**Format** /api/param?network.interface.dscp.audio

**Example of Response** network.interface.dscp.audio=56&200 OK

**Interpretation** Acquire TOS that includes DHCP field for Audio.

**Allowed users** admin, operator, user

### Setting TOS Value of Audio for VN-X35/235

**Format** /api/param?network.interface.dscp.audio=data

**Example** /api/param?network.interface.dscp.audio=56

**Example of Response**

```
network.interface.dscp.audio&202 Accepted(network.interface.status=restart)
```

**Interpretation** Change TOS that includes DHCP field for Audio. The range of set value is between 0 to 255 though MSB 6 bits in the value is valid. To validate the change, use "network.interface.status=restart" API.

**Allowed user** admin

### Getting Unicast TTL Value from VN-X35/235

**Format** /api/param?network.interface.ttl.unicast

**Example of Response** network.interface.ttl.unicast=16&200 OK

**Interpretation** Acquire TTL of unicast. 1-255 is returned.

**Allowed users** admin, operator, user

## Setting Unicast TTL for VN-X35/235

**Format** /api/param?network.interface.ttl.unicast=data

**Example** /api/param?network.interface.ttl.unicast=56

**Example of Response**

```
network.interface.ttl.unicast&202 Accepted(network.interface.status=restart)
```

**Interpretation** Change TTL of unicast. The range of set value is between 1 to 255. To validate the change, use "network.interface.status=restart" API.

**Allowed user** admin

## Getting Multicast TTL Value from VN-X35/235

**Format** /api/param?network.interface.ttl.multicast

**Example of Response** network.interface.ttl.multicast=16&200 OK

**Interpretation** Acquire TTL of multicast. 1-255 is returned.

**Allowed users** admin, operator, user

## Setting Multicast TTL for VN-X35/235

**Format** /api/param?network.interface.ttl.multicast=data

**Example** /api/param?network.interface.ttl.multicast=56

**Example of Response**

```
network.interface.ttl.multicast&202 Accepted(network.interface.status=restart)
```

**Interpretation** Change TTL of multicast. The range of set value is between 1 to 255. To validate the change, use "network.interface.status=restart" API.

**Allowed user** admin

## Getting MTU Value VN-X35/235

**Format** /api/param?network.interface.mtu

**Example of Response** network.interface.mtu=1420&200 OK

**Interpretation** Acquire the MTU value.

**Allowed users** admin, operator, user

## Setting MTU Value for VN-X35/235

**Format** /api/param?network.interface.mtu=data

**Example** /api/param?network.interface.mtu=1500

### Example of Response

`network.interface.mtu&202 Accepted(network.interface.status=restart)`

**Interpretation** Change the MTU value. The range of set value is between 1280 to 1500. To validate the change, use

"network.interface.status=restart" API.

**Allowed user** admin

## Getting Network Negotiation Setting from VN-X35/235

**Format** `/api/param?network.interface.negotiation`

**Example of Response** `network.interface.negotiation=auto&200 OK`

**Interpretation** Acquire the network Negotiation setting. Either auto, 100full, 100half, 10full or 10half will be returned.

**Allowed users** admin, operator, user

## Setting Network Negotiation for VN-X35/235

**Format** `/api/param?network.interface.negotiation=data`

**Example** `/api/param?network.interface.negotiation=auto`

### Example of Response

`network.interface.negotiation&202 Accepted(network.interface.status=restart)`

**Interpretation** Change the network Negotiation setting. Specify auto, 100full, 100half, 10full or 10half. To validate the change, use "network.interface.status=restart" API.

**Allowed user** admin

## 6.13. Protocol

The APIs below are related to protocol. These are equivalent to the features on the Protocol page of the WEB setting page. Refer to the instruction manual for details on the Protocol page.

## Getting Port Number of HTTP from VN-X35/235

**Format** `/api/param?network.http.port`

**Example of Response** `network.http.port=80&200 OK`

**Interpretation** Acquire port number of HTTP server in VN-X35/235.

**Allowed users** admin, operator

## Setting Port Number of HTTP for VN-X35/235

**Format** `/api/param?network.http.port=data`

**Example of Response** `network.http.port&202`

`Accepted(network.http(configuration).status=restart)`

**Interpretation** Change port number of HTTP server in VN-X35/235. Default value is 80. To validate the change, use "network.http(configuration).status=restart" or "network.http.status=restart" API.

**Allowed users** admin, operator

## Getting Status of VSIP from VN-X35/235

**Format** `/api/param?network.vsip_server.status`

**Example of Response** `network.vsip_server.status=on&200 OK`

**Interpretation** Acquire status of VSIP server in VN-X35/235. "on" or "off" is returned.

**Allowed users** admin, operator

## Setting Status of VSIP for VN-X35/235

**Format** `/api/param?network.vsip_server.status=data`

**Example** `/api/param?network.vsip_server.status=on`

**Example of Response** `network.vsip_server.status&200 OK`

**Interpretation** Change status of VSIP server in VN-X35/235. Specify "on" for interoperability with Nextiva products from Verint Systems Inc.

**Allowed users** admin, operator

## Getting Port Number of VSIP from VN-X35/235

**Format** `/api/param?network.vsip_server.port`

**Example of Response** `network.vsip_server.port=5510&200 OK`

**Interpretation** Acquire port number of VSIP server in VN-X35/235.

**Allowed users** admin, operator

## Setting Port Number of VSIP for VN-X35/235

**Format** `/api/param?network.vsip_server.port=data`

**Example of Response** `network.vsip_server.port&202`

`Accepted(network.vsip_server.status=restart)`

**Interpretation** Change port number of VSIP server in VN-X35/235. Default value is 5510. To validate the change, use "network.vsip\_server.status=restart".

**Allowed users** admin, operator

## Getting Status of AMX Discovery Protocol from VN-X35/235

**Format** `/api/param?network.amx.beacon.status`

**Example of Response** `network.amx.beacon.status=on&200 OK`

**Interpretation** Acquire status of AMX Discovery Protocol in VN-X35/235. "on" or "off" is returned.

**Allowed users** admin, operator

### Setting Status of AMX Discovery Protocol for VN-X35/235

**Format** /api/param?network.amx.beacon.status=data

**Example** /api/param?network.amx.beacon.status=on

**Example of Response** network.amx.beacon.status&200 OK

**Interpretation** Change status of AMX Discovery Protocol in VN-X35/235. Specify "on" for interoperability with AMX products.

**Allowed users** admin, operator

### Getting Mode of JPEG streaming from VN-X35/235

**Format** /api/param?network.http(streaming).priority

**Example of Response** network.http(streaming).priority=clientnumber&200 OK

**Interpretation** Acquire mode of JPEG streaming. This API is available for VN-X35(version 2.00 or later) and VN-X235. "framerate" or "clientnumber" is returned.

**Allowed users** admin, operator

### Setting Mode of JPEG streaming for VN-X35/235

**Format** /api/param?network.http(streaming).priority=data

**Example** /api/param?network.http(streaming).priority=clientnumber

**Example of Response** network.http(streaming).priority&202

Accepted(network.http(configuration).status=restart)

**Interpretation** Change mode of JPEG streaming. This API is available for VN-X35(version 2.00 or later) and VN-X235. Specify "framerate" or "clientnumber". In case of "clientnumber", VN-X35/235 accepts many clients though requested JPEG framerate from clients is not kept. In case of "framerate", VN-X35/235 keeps JPEG framerate as clients requested though number of clients is limited. Refer to the "Network Requirements" of instruction manual(Setting) for details the limit of streaming.

**Allowed users** admin, operator

## 6.14. Multicast Streaming

The APIs below are related to manual streaming. These are equivalent to the features on the Streaming page of the WEB setting page. Refer to the instruction manual for details on the Streaming page.

### Getting Status of JPEG Multicast Streaming from VN-X35/235

**Format** /api/param?network.destination(1).status

**Example of Response** network.destination(1).status=off&200 OK

**Interpretation** Acquire status of JPEG multicast streaming. Either on or off will be returned.

**Allowed users** admin, operator

## Setting Status of JPEG Multicast Streaming, or Save Changes for VN-X35/235

**Format** /api/param?network.destination(1).status=data

**Example** /api/param?network.destination(1).status=start

**Example of Response** network.destination(1).status&200 OK

**Interpretation** Start/stop JPEG multicast streaming, or save changes to multicast streaming settings. Specify "start", "stop" or "save". Changes of multicast streaming settings become valid by "save".

Multicast stream is RTP compliant.

If power becomes off during multicast streaming, the streaming starts automatically after power on.

**Allowed users** admin, operator

## Getting JPEG Multicast Address from VN-X35/235

**Format** /api/param?network.destination(1).host

**Example of Response** network.destination(1).host=225.0.1.1&200 OK

**Interpretation** Acquire JPEG multicast address.

**Allowed users** admin, operator

## Setting JPEG Multicast Address for VN-X35/235

**Format** /api/param?network.destination(1).host=data

**Example** /api/param?network.destination(1).host=225.0.1.1

**Example of Response**

network.destination(1).host&202 Accepted(network.destination(1).host=save)

**Interpretation** Change JPEG multicast address. Specify from 224.0.0.0 to 239.255.255.255 or IPv6 address beginning with the ff\*\*. Refer to RFC 3513 for specification of IPv6 multicast address. To validate the change, use "network.destination(1).host=save" API. After the save, start streaming by "network.destination(1).host=start" API.

**Allowed user** admin

## Getting JPEG Multicast Port Number from VN-X35/235

**Format** /api/param?network.destination(1).port

**Example of Response** network.destination(1).port=49152&200 OK

**Interpretation** Acquire JPEG multicast port number.

**Allowed users** admin, operator

## Setting JPEG Multicast Port Number for VN-X35/235

**Format** /api/param?network.destination(1).port=data

**Example** /api/param?network.destination(1).port=49152

### Example of Response

```
network.destination(1).port&202 Accepted(network.destination(1).host=save)
```

**Interpretation** Change JPEG multicast port number. Specify from 2 to 65534. To validate the change, use "network.destination(1).host=save" API. After the save, start streaming by "network.destination(1).host=start" API.

**Allowed user** admin

## Getting Frame Rate of JPEG Multicast from VN-X35/235

**Format** /api/param?network.destination(1).framerate

**Example of Response** network.destination(1).framerate=10&200 OK

**Interpretation** Acquire JPEG multicast frame rate.

**Allowed users** admin, operator

## Setting Frame Rate of JPEG Multicast for VN-X35/235

**Format** /api/param?network.destination(1).framerate=data

**Example** /api/param?network.destination(1).framerate=30

### Example of Response

```
network.destination(1).framerate&202
```

```
Accepted(network.destination(1).host=save)
```

**Interpretation** Change JPEG multicast frame rate. Specify 15, 10, 7.5, 6, 5, 3, 2, 1, -2, -3, -5, -10, -15, -20, or -30. -5 means 1/5fps for example. To validate the change, use "network.destination(1).host=save" API. After the save, start streaming by "network.destination(1).host=start" API.

**Allowed user** admin

## Getting Status of MPEG-4 Multicast Streaming from VN-X35/235

**Format** /api/param?network.destination(2).status

**Example of Response** network.destination(2).status=off&200 OK

**Interpretation** Acquire status of MPEG-4 multicast streaming. Either on or off will be returned.

**Allowed users** admin, operator

## Setting Status of MPEG-4 Multicast Streaming, or Save Changes for VN-X35/235

**Format** /api/param?network.destination(2).status=data

**Example** /api/param?network.destination(2).status=start

**Example of Response** network.destination(2).status&200 OK

**Interpretation** Start/stop MPEG-4 multicast streaming, or save changes to multicast streaming settings. Specify "start", "stop" or "save". Changes of multicast streaming settings become valid by "save".

MPEG-4 is not available when current resolution pattern does not include MPEG-4.

Multicast stream is RTP compliant. Marker bit of RTP header is 1 when the RTP packet has last data of VOP.

If power becomes off during multicast streaming, the streaming starts automatically after power on.

**Allowed users** admin, operator

## Getting MPEG-4 Multicast Address from VN-X35/235

**Format** /api/param?network.destination(2).host

**Example of Response** network.destination(2).host=225.0.1.2&200 OK

**Interpretation** Acquire MPEG-4 multicast address.

**Allowed users** admin, operator

## Setting MPEG-4 Multicast Address for VN-X35/235

**Format** /api/param?network.destination(2).host=data

**Example** /api/param?network.destination(2).host=225.0.1.2

**Example of Response**

network.destination(2).host&202 Accepted(network.destination(2).host=save)

**Interpretation** Change MPEG-4 multicast address. Specify from 224.0.0.0 to 239.255.255.255 or IPv6 address beginning with the ff\*\*. Refer to RFC 3513 for specification of IPv6 multicast address. To validate the change, use "network.destination(2).host=save" API. After the save, start streaming by "network.destination(2).host=start" API.

**Allowed user** admin

## Getting MPEG-4 Multicast Port Number from VN-X35/235

**Format** /api/param?network.destination(2).port

**Example of Response** network.destination(2).port=59152&200 OK

**Interpretation** Acquire MPEG-4 multicast port number.

**Allowed users** admin, operator

## Setting MPEG-4 Multicast Port Number for VN-X35/235

**Format** /api/param?network.destination(2).port=data

**Example** /api/param?network.destination(2).port=59152

**Example of Response**

`network.destination(2).port&202 Accepted(network.destination(2).host=save)`

**Interpretation** Change MPEG-4 multicast port number. Specify from 2 to 65534. To validate the change, use "network.destination(2).host=save" API. After the save, start streaming by "network.destination(2).host=start" API.

**Allowed user** admin

## Getting Status of Audio Multicast Streaming from VN-X35/235

**Format** `/api/param?network.destination(3).status`

**Example of Response** `network.destination(3).status=off&200 OK`

**Interpretation** Acquire status of audio multicast streaming. Either on or off will be returned.

**Allowed users** admin, operator

## Setting Status of Audio Multicast Streaming, or Save Changes for VN-X35/235

**Format** `/api/param?network.destination(3).status=data`

**Example** `/api/param?network.destination(3).status=start`

**Example of Response** `network.destination(3).status&200 OK`

**Interpretation** Start/stop audio multicast streaming, or save changes to multicast streaming settings. Specify "start", "stop" or "save". Changes of multicast streaming settings become valid by "save".

Multicast stream is RTP compliant. If power becomes off during multicast streaming, the streaming starts automatically after power on.

**Allowed users** admin, operator

## Getting Audio Multicast Address from VN-X35/235

**Format** `/api/param?network.destination(3).host`

**Example of Response** `network.destination(3).host=225.0.1.3&200 OK`

**Interpretation** Acquire audio multicast address.

**Allowed users** admin, operator

## Setting Audio Multicast Address for VN-X35/235

**Format** `/api/param?network.destination(3).host=data`

**Example** `/api/param?network.destination(3).host=225.0.1.3`

**Example of Response**

`network.destination(3).host&202 Accepted(network.destination(3).host=save)`

**Interpretation** Change audio multicast address. Specify from 224.0.0.0 to 239.255.255.255 or IPv6 address beginning with the ff\*\*. Refer to RFC 3513 for specification of IPv6 multicast address. To validate the change, use "network.destination(3).host=save" API. After the save, start streaming by "network.destination(3).host=start" API.

**Allowed user** admin

### Getting Audio Multicast Port Number from VN-X35/235

**Format** /api/param?network.destination(3).port

**Example of Response** network.destination(3).port=39152&200 OK

**Interpretation** Acquire audio multicast port number.

**Allowed users** admin, operator

### Setting Audio Multicast Port Number for VN-X35/235

**Format** /api/param?network.destination(3).port=data

**Example** /api/param?network.destination(3).port=39152

**Example of Response**

network.destination(3).port&202 Accepted(network.destination(31).host=save)

**Interpretation** Change audio multicast port number. Specify from 2 to 65534. To validate the change, use "network.destination(3).host=save" API. After the save, start streaming by "network.destination(3).host=start" API.

**Allowed user** admin

## 6.15. Access Restrictions

The APIs below are related to access restrictions. These are equivalent to the features on the Access Restrictions page of the WEB setting page. Refer to the instruction manual for details on the Access Restrictions page.

### Getting Deny/Allow Setting of Client Restrictions from VN-X35/235

**Format** /api/param?network.access\_control(stream\_out).logic

**Example of Response** network.access\_control(stream\_out).logic=deny&200 OK

**Interpretation** Acquire the deny/allow setting of client restrictions. Either deny or allow will be returned. These restrictions are applied to getting JPEG/MPEG-4 and bidirectional Audio.

**Allowed users** admin, operator

### Setting Client Restriction to Deny/Allow for VN-X35/235

**Format** /api/param?network.access\_control(stream\_out).logic=data

**Example** /api/param?network.access\_control(stream\_out).logic=deny

**Example of Response** network.access\_control(stream\_out).logic&200 OK

**Interpretation** Change the deny/allow setting of client restrictions. Specify as deny or allow. These restrictions are applied to getting JPEG/MPEG-4 and bidirectional Audio.

**Allowed user** admin

## Getting IP Address Setting of Restricted Client from VN-X35/235

**Format** `/api/param?network.access_control(stream_out).host(Number)`

**Example** When Getting the first IP address

```
/api/param?network.access_control(stream_out).host(1)
```

**Example of Response** `network.access_control(stream_out).host(1)=10.0.0.100&200 OK`

**Interpretation** Acquire the IP address setting of the restricted client. Setting is possible up to 10 items. Specify a value between 1 to 10 for the number. The following will be returned if subnet mask was specified.

### Example of Response 2

```
network.access_control(stream_out).host(1)=10.0.0.0/24&200 OK
```

The above example indicates that the range is between 10.0.0.0 to 10.0.0.255. There are also cases when FQDN instead of IP address is set.

### Example of Response 3

```
network.access_control(stream_out).host(1)=somedivision.somecompany.com&200 OK
```

**Allowed users** admin, operator

## Setting IP Address of Restricted Client for VN-X35/235

**Format** `/api/param?network.access_control(stream_out).host(Number)=data`

**Example** When setting the first IP address

```
/api/param?network.access_control(stream_out).host(1)=10.0.0.100
```

**Example of Response** `network.access_control(stream_out).host(1)&200 OK`

**Interpretation** Change the IP address setting of client restriction. Setting is possible up to 10 items. Specify a value between 1 to 10 for the number. A range of IP address may be specified if the subnet mask is also specified. For example, set as follows to specify a range between 10.0.0.0 to 10.0.0.255.

**Example** `/api/param?network.access_control(stream_out).host(1)=10.0.0.0/24`

It is also possible to set using FQDN instead of IP address. Set as follows if the setting is to be left blank.

**Example** `/api/param?network.access_control(stream_out).host(1)=%00`

**Allowed user** admin

## 6.16. Time

The APIs below are related to time. These are equivalent to the features on the Time page of the WEB setting page.

Refer to the instruction manual for details on the Time page.

## Getting On/Off of SNTP Client from VN-X35/235

**Format** `/api/param?network.ntp.status`

**Example of Response** `network.ntp.status=off&200 OK`

**Interpretation** Acquire the on/off status of SNTP client. Either on or off will be returned.

**Allowed users** admin, operator, user

## Setting On/Off of SNTP Client, or Validate Changes for VN-X35/235

**Format** `/api/param?network.ntp.status=data`

**Example** `/api/param?network.ntp.status=on`

**Example of Response** `network.ntp.status&200 OK`

**Interpretation** Change the on/off status of SNTP client, or validate changes to settings. Specify "on", "off" or "restart". as on or off. IP address of NTP server and access interval are validated by "restart".

**Allowed users** admin, operator

## Getting NTP Server Address from VN-X35/235

**Format** `/api/param?network.ntp.host`

**Example of Response** `network.ntp.host=10.0.0.100&200 OK`

**Interpretation** Acquire IP address of NTP server. Either the IP address or FQDN will be returned.

**Allowed users** admin, operator, user

## Setting NTP Server Address for VN-X35/235

**Format** `/api/param?network.ntp.host=data`

**Example** `/api/param?network.ntp.host=10.0.0.100`

**Example of Response** `network.ntp.host&202 Accepted(network.ntp.status=restart)`

**Interpretation** Change IP address of NTP server. Specify IP address or FQDN. To validate the change, use "network.ntp.status=restart " API.

**Allowed users** admin, operator

## Getting Access Interval to NTP Server from VN-X35/235

**Format** `/api/param?network.ntp.interval`

**Example of Response** `network.ntp.interval=10&200 OK`

**Interpretation** Acquire the interval for accessing the NTP server. Unit can be gotten by "network.ntp.unit" API.

**Allowed users** admin, operator, user

## Setting Access Interval to NTP Server for VN-X35/235

**Format** `/api/param?network.ntp.interval=data`

**Example** `/api/param?network.ntp.interval=60`

**Example of Response**

`network.ntp.interval&202 Accepted(network.ntp.status=restart)`

**Interpretation** Change the interval for accessing the NTP server. Unit can be set by "network.ntp.unit" API. Specify 1-60 when the unit is min/hour, 1-31 when the unit is day. To validate the change, use "network.ntp.status=restart" API.

**Allowed users** admin, operator

## Getting Access Interval Unit of NTP from VN-X35/235

**Format** `/api/param?network.ntp.unit`

**Example of Response** `network.ntp.unit=hour&200 OK`

**Interpretation** Acquire the unit of interval for accessing the NTP server. "min", "hour" or "day" is returned.

**Allowed users** admin, operator, user

## Setting Access Interval Unit of SNTP for VN-X35/235

**Format** `/api/param?network.ntp.unit=data`

**Example** `/api/param?network.ntp.unit=day`

**Example of Response**

`network.ntp.unit&202 Accepted(network.ntp.status=restart)`

**Interpretation** Change the unit of interval for accessing the NTP server. Specify "min", "hour" or "day". To validate the change, use "network.ntp.status=restart" API.

**Allowed users** admin, operator

## Getting Time from VN-X35/235

**Format** `/api/param?system.date`

**Example of Response** `system.date=20050614171537&200 OK`

**Interpretation** Acquire the time from the built-in clock of VN-X35/235. Time is arranged in the order of year, month, day, hour, minute and second. Year is denoted in a 4-digit decimal number, and month, day, hour, minute and second are denoted in 2-digit decimal numbers.

**Allowed users** admin, operator, user

## Setting Time for VN-X35/235

**Format** `/api/param?system.date=data`

**Example** `/api/param?system.date=20050614171537`

**Example of Response** `system.date&200 OK`

**Interpretation** Change the time of the built-in clock in VN-X35/235. Specify in the order of year, month, day, hour, minute and second. Specify year in a 4-digit decimal number, and month, day, hour, minute and second in 2-digit decimal numbers.

**Allowed user** admin

## Getting Timezone from VN-X35/235

**Format** /api/param?system.timezone

**Example of Response** system.timezone=Pacific&200 OK

**Interpretation** Acquire the timezone from VN-X35/235. Character strings in the following table will be returned.

Timezone Character String	Description
GMT-12	Timezone that is 12 hours earlier than the Greenwich Mean Time.
GMT-11	Timezone that is 11 hours earlier than the Greenwich Mean Time.
GMT-10	Timezone that is 10 hours earlier than the Greenwich Mean Time.
Hawaii	Same timezone as GMT-10
GMT-9:30	Timezone that is 9 hours and 30 minutes earlier than the Greenwich Mean Time.
GMT-9	Timezone that is 9 hours earlier than the Greenwich Mean Time.
Alaska	Same timezone as GMT-9
GMT-8	Timezone that is 8 hours earlier than the Greenwich Mean Time.
Pacific	(GMT-8:00) US/Pacific Time
GMT-7	Timezone that is 7 hours earlier than the Greenwich Mean Time.
Arizona	Same timezone as GMT-7
Mountain	Same timezone as GMT-7
GMT-6	Timezone that is 6 hour earlier than the Greenwich Mean Time.
Central	Same timezone as GMT-6
GMT-5	Timezone that is 5 hour earlier than the Greenwich Mean Time.
East-Indiana	Same timezone as GMT-5.
Eastern	Same timezone as GMT-5.
GMT-4	Timezone that is 4 hour earlier than the Greenwich Mean Time.
Atlantic	Same timezone as GMT-4.
GMT-3:30	Timezone that is 3 hours and 30 minutes earlier than the Greenwich Mean Time.
GMT-3	Timezone that is 3 hour earlier than the Greenwich Mean Time.
GMT-2	Timezone that is 2 hour earlier than the Greenwich Mean Time.
GMT-1	Timezone that is 1 hour earlier than the Greenwich Mean Time.
UTC	Greenwich Mean Time
London	Same timezone as UTC.
GMT+1	Timezone that is 1 hour later than the Greenwich Mean Time.
Berlin	Same timezone as GMT+1.
Rome	Same timezone as GMT+1.
Madrid	Same timezone as GMT+1.
Paris	Same timezone as GMT+1.
CET	Same timezone as GMT+1.
GMT+2	Timezone that is 2 hours later than the Greenwich Mean Time.
EET	Same timezone as GMT+2
GMT+3	Timezone that is 3 hours later than the Greenwich Mean Time.
GMT+3:30	Timezone that is 3 hours and 30 minutes later than the Greenwich Mean Time.
GMT+4	Timezone that is 4 hours later than the Greenwich Mean Time.
GMT+4:30	Timezone that is 4 hours and 30 minutes later than the Greenwich Mean Time.
GMT+5	Timezone that is 5 hours later than the Greenwich Mean Time.
GMT+5:30	Timezone that is 5 hours and 30 minutes later than the Greenwich Mean Time.
Calcutta	Same timezone as GMT+5:30
GMT+5:45	Timezone that is 5 hours and 45 minutes later than the Greenwich Mean Time.
GMT+6	Timezone that is 6 hours later than the Greenwich Mean Time.
GMT+6:30	Timezone that is 6 hours and 30 minutes later than the Greenwich Mean Time.
GMT+7	Timezone that is 7 hours later than the Greenwich Mean Time.

GMT+8	Timezone that is 8 hours later than the Greenwich Mean Time.
GMT+8:45	Timezone that is 8 hours and 45 minutes later than the Greenwich Mean Time.
GMT+9	Timezone that is 9 hours later than the Greenwich Mean Time.
GMT+9:30	Timezone that is 9 hours and 30 minutes later than the Greenwich Mean Time.
Japan	Same timezone as GMT+9.
GMT+10	Timezone that is 10 hours later than the Greenwich Mean Time.
GMT+10:30	Timezone that is 10 hours and 30 minutes later than the Greenwich Mean Time.
GMT+11	Timezone that is 11 hours later than the Greenwich Mean Time.
GMT+11:30	Timezone that is 11 hours and 30 minutes later than the Greenwich Mean Time.
GMT+12	Timezone that is 12 hours later than the Greenwich Mean Time.
GMT+12:45	Timezone that is 12 hours and 45 minutes later than the Greenwich Mean Time.

**Allowed users** admin, operator, user

## Setting Timezone for VN-X35/235

**Format** /api/param?system.timezone=data

**Example** /api/param?system.timezone=Pacific

**Example of Response** system.timezone&202 Accepted(system.status=restart)

**Interpretation** Change the timezone of VN-X35/235. Refer to "Getting Timezone from VN-X35/235" on the character string to specify. To validate the change, use "system.status=restart" API.

**Allowed user** admin

## 6.17. Password

The APIs below are related to passwords. These are equivalent to the features on the Password page of the WEB setting page. Refer to the instruction manual for details on the Password page.

### Setting Password for VN-X35/235

**Format** /api/param?system.password.data1=data2

**Example** /api/param?system.password.admin=someword

**Example of Response** system.password.admin&200 OK

**Interpretation** Change the VN-X35/235 password. Different passwords may be set for the 3 user name types, namely admin, operator and user. Set a password between 4 to 16 characters.

Example when setting admin password: /api/param?system.password.admin=word1

Example when setting operator password: /api/param?system.password.operator=word2

Example when setting user password: /api/param?system.password.user=word3

There is no API for Getting passwords.

**Allowed user** admin

## 6.18. Maintenance

The APIs below are related to maintenance. These are equivalent to the features on the Maintenance page of the WEB setting page. Refer to the instruction manual for details on the Maintenance page.

### Restart VN-X35/235

**Format** `/api/param?system.status=restart`

**Example of Response** `system.status&200 OK`

**Interpretation** Restarts VN-X35/235.

**Allowed users** admin

### Initialization

**Format** `/api/param?system.status=initialize`

**Example of Response** `system.status&200 OK`

**Interpretation** Restore all VN-X35/235 settings to factory defaults. Upon doing so, all transmission services that are in progress will be terminated. Initializing takes a few minutes. Response is returned after initializing. Do not power off during initializing.

**Allowed user** admin

### Firmware Update

Version upgrading is not possible using API. To do so, use the Version Upgrade feature on the Maintenance page of the WEB setting page.

## 6.19. LED Setting

The APIs below are related to LED. These are equivalent to the features on the LED page of the WEB setting page. Refer to the instruction manual for details on the LED page.

### Getting LED mode from VN-X35/235

**Format** `/api/param?camera.stealth`

**Example of Response** `camera.stealth=off&200 OK`

**Interpretation** Acquire LED setting. "on" or "off" is returned. If this is "on", LED becomes off after restarting.

**Allowed users** admin, operator, user

### Setting LED mode for VN-X35/235

**Format** `/api/param?camera.stealth=data`

**Example** `/api/param?camera.stealth=on`

**Example of Response**

```
camera.stealth&202 Accepted(camera.status=save)
```

**Interpretation** Change LED setting. Specify "on" or "off". If "on" is set, LED becomes off after restarting. To validate the change, use "camera.status=save" API.

**Allowed users** admin, operator

## Getting LED blinking mode from VN-X35/235

**Format** /api/param?camera.identify

**Example of Response** camera.identify=off&200 OK

**Interpretation** Acquire LED blinking setting. "on" or "off" is returned. If this is "on", LED is blinking.

**Allowed users** admin, operator, user

## Setting LED blinking mode for VN-X35/235

**Format** /api/param?camera.identify=data

**Example** /api/param?camera.identify=on

**Example of Response**

```
camera.identify&202 Accepted(camera.status=save)
```

**Interpretation** Change LED blinking setting. Specify "on" or "off". If "on" is set, LED starts blinking. To validate the change, use "camera.status=save" API.

**Allowed users** admin, operator

## 6.20. Getting Status

The APIs below are related to status acquisition. These are equivalent to the features on the Operation page of the WEB setting page. Refer to the instruction manual for details on the Operation page.

### Getting Sending Status

**Format** /api/param?system.session

**Response** Return the total transmission bit rate, and status of each sending operation. Transmission is not carried out in the following examples.

```
system.session=&200 OK
```

```
system.session.total_bitrate=0k&200 OK
```

```
system.session.sending_count=0&200 OK
```

```
system.session.sending_max=20&200 OK
```

In the examples below, 1 JPEG stream of TCP is being sent.

```
system.session=&200 OK
```

```

system.session.total_bitrate=388k&200 OK
system.session.sending_count=2&200 OK
system.session.sending_max=5&200 OK
system.session.sending(01).bitrate=326k&200 OK
system.session.sending(01).to.ip=10.0.0.100&200 OK
system.session.sending(01).to.port=1536&200 OK
system.session.sending(01).to.protocol=tcp_passive&200 OK
system.session.sending(01).to.session=http&200 OK
system.session.sending(01).from.encode=jpeg&200 OK
system.session.sending(01).from.framerate=1&200 OK
system.session.sending(01).from.framesize=vga&200 OK

```

In case of MPEG-4, system.session.sending(01).from.encode=mpeg4 is returned. In case of multicast, system.session.sending(01).to.ip becomes multicast IP address.

**Interpretation** Acquire the sending status of VN-X35/235. Starting and stopping stream can be occurred in random order, so it can happen that sending(01) is vacant though sending(02) has information.

**Allowed users** admin, operator, user

## Getting Log

**Format** /api/param?system.log

**Response** Return the following information. These information will be initialized upon turning off the power of VN-X35/235.

Number of seconds after startup, Alarm input, Motion detect, Error

Response examples of VN-X35

```
system.log=&200 OK
```

```
system alive time: 2142sec <---- No. of seconds after startup
```

```
Dec 19 14:35:32 vn-x35 user.info evman: Motion Detect <---- Motion detect
```

```
Dec 19 14:36:03 vn-x35 user.info evman: Alarm Detect (m1) <---- Alarm input 1ch (make)
```

```
Dec 19 14:36:04 vn-x35 user.info evman: Alarm Detect (b2) <---- Alarm input 2ch (break)
```

```
Dec 19 14:35:18 vn-x35 user.info evman: Motion Detect <---- Motion detect
```

**Interpretation** Acquire the VN-X35/235 log. Maximum size is 10KB.

**Allowed user** admin

## 6.21. Getting Settings

The APIs below are related to the acquisition of settings. These are equivalent to the features on the Settings page of the

WEB setting page. Refer to the instruction manual for details on the Settings page.

## Getting Model Name

**Format** /api/param?system.model

**Example of Response** system.model=VN-X35U&200 OK

**Interpretation** Acquire the model name.

**Allowed users** admin, operator, user

## Getting Firmware Revisions

**Format** /api/param?system.software.revision

**Example of Response** system.software.revision=1.00&200 OK

**Interpretation** Acquire revisions of the firmware.

**Allowed users** admin, operator, user

## 6.22. Others

These are APIs of features not found on the WEB setting page.

### Getting Alarm Input Status from VN-X35/235

**Format** /api/param?peripheral.input\_pin.pin(Number).status

**Example of Response** peripheral.input\_pin.pin(1).status=make&200 OK

**Interpretation** Acquire the current alarm input status. Specify 1 or 2 to Number. Either make or break will be returned.

**Allowed users** admin, operator, user

### Getting Mode of FTP Server from VN-X35/235

**Format** /api/param?application.ftp.mode

**Example of Response** application.ftp.mode=active&200 OK

**Interpretation** Acquire the mode of FTP server that is used by alarm action. Either active or passive is returned.

active mode: Standard mode of FTP server. Also called PORT mode. TCP connection for data is established from 20 port of FTP server to 10020 port of VN-X35/235.

passive mode: TCP connection for data is established from VN-X35/235 to FTP server. Port number depends on FTP server.

**Allowed users** admin, operator, user

### Setting Mode of FTP Server for VN-X35/235

**Format** /api/param?application.ftp.mode=data

**Example** /api/param?application.ftp.mode=active

**Example of Response** application.ftp.mode&200 OK

**Interpretation** Change the mode of FTP server that is used by alarm action. Set active or passive. Default is active.

active mode: Standard mode of FTP server. Also called PORT mode. TCP connection for data is established from 20 port of FTP server to 10020 port of VN-X35/235.

passive mode: TCP connection for data is established from VN-X35/235 to FTP server. Port number depends on FTP server.

**Allowed user** admin, operator

## Getting Control Port Number of FTP Server from VN-X35/235

**Format** /api/param?application.ftp.port

**Example of Response** application.ftp.port=21&200 OK

**Interpretation** Acquire port number for control of FTP server that is used by alarm action. Port number for data plus one is the port number for control.

**Allowed users** admin, operator, user

## Setting Control Port Number of FTP Server for VN-X35/235

**Format** /api/param?application.ftp.port=data

**Example** /api/param?application.ftp.port=21

**Example of Response** application.ftp.port&200 OK

**Interpretation** Change port number for control of FTP server that is used by alarm action. Default is 21. Port number for data plus one is the port number for control.

**Allowed user** admin, operator

# 7. Getting Audio from VN-X35/235 via HTTP

## 7.1. Basic Procedures

- 1) The client establishes a TCP connection to port number 80.
- 2) The client sends out API.

### Example

```
GET /api/audio?lowdelay=1 HTTP/1.1<CRLF>
```

```
Host: 192.168.0.2<CRLF><CRLF>
```

**Note** <CRLF> denotes the line feed code (0x0D, 0x0A).

3) VN-X35/235 returns HTTP response.

**Example of VN-X35**

**HTTP/1.1 200 OK<CRLF>**

**Connection: close<CRLF>**

**Content-type: audio/ulaw<CRLF>**

**Date: Tue, 02 Oct 2007 07:33:12 GMT<CRLF>**

**Server: JVC VN-X35 Network Camera<CRLF>**

**x-vnx35\_response: encode=ulaw&lowdelay=1&assured=1<CRLF><CRLF>**

4) VN-X35/235 sends out audio data after returning HTTP response.

Audio data with 12 bytes header will be sent out continuously after HTTP response. HTTP Response and audio data sent out by VN-X35/235 are as follows.

HTTP Response
header (12 bytes)
u-Law data (512 bytes)
header (12 bytes)
u-Law data (512 bytes)
...

Structure of 12 bytes header is as below. First 4 bytes is payload type for u-Law.

0x00000080
Volume of payload (512 for u-Law)
Time stamp in 8kHz

5) When the client wants to stop current audio transmission, the client disconnects TCP80.

VN-X35/235 does not accept further API via current TCP that is used for audio transmission. To change parameter, disconnect current TCP to stop the audio transmission, connect new TCP, and send API with new parameter.

**7.2. API Format**

## Structure

GET	space	API	space	HTTP/1.1	0x0D 0x0A
Host:	space	IP Address of VN-X35/235	0x0D 0x0A 0x0D 0x0A		

Unlike APIs for getting/setting parameters, Accept line is not required. Basic authentication is also not necessary.

### Example

```
GET /api/audio?assured=1&lowdelay=1 HTTP/1.1<CRLF>
```

```
Host: 192.168.0.2<CRLF><CRLF>
```

Parameter value is indicated using =. Do not insert space before and after =.

Example assured=1

Parameters are segmented using &. Do not insert space before and after &.

Example assured=1&lowdelay=0

There is no need to specify all parameters. Default values will be used for parameters that are not specified.

## Parameter Description

**assured** Recent audio data is stored in internal buffer of the camera. Specify as assured=0 to request for the newest data in the buffer and assured=1 to request for the oldest data in the buffer. Specify as assured=0 to shorten the audio delay time. To enable stable playback in a network where jitter occurs, it is recommended that this be specified as assured=1. Default value is 1.

**lowdelay** Specifying as lowdelay=1 disables the Nagle algorithm of TCP, and audio delay time will be shortened. When lowdelay=0 is specified, the Nagle algorithm is enabled and audio delay time will be prolonged. However, transmission overhead will be enhanced. Default value is 1.

## 7.3. Response

### When API is successfully received

VN-X35/235 will return 200 OK. There is no Content-length field in the HTTP response. The x-vnx35\_response or x-vnx235\_response line indicates actual parameter.

#### Example of VN-X35

```
HTTP/1.1 200 OK<CRLF>
```

```
Connection: close<CRLF>
```

```
Content-type: audio/ulaw<CRLF>
Date: Tue, 02 Oct 2007 07:33:12 GMT<CRLF>
Server: JVC VN-X35 Network Camera<CRLF>
x-vnx35_response: encode=ulaw&lowdelay=1&assured=1<CRLF><CRLF>
```

## 7.4. Restrictions

### Access restriction

VN-X35/235 has access restriction feature that enables to deny access from a specific IP address. If audio is requested from the IP address of access restriction, VN-X35/235 disconnects the TCP connection after API is sent.

### Restriction by maximum bitrate of VN-X35/235

The maximum bitrate of VN-X35/235 is about 20 Mbps.

### Number of clients

The maximum number of audio stream is 2, 2 TCP streams or 1 TCP stream and 1 multicast stream. When 2 streams are sent from VN-X35/235, new request for audio is disconnected.

## 8. Sending Audio to VN-X35/235

This section describes APIs for audio sending from a client to VN-X35/235. Make use of the APIs explained in this section in the way as mentioned in Section 5.

### 8.1. Procedures

1) The client establishes a TCP connection to port number 80.

2) The client sends out API.

API has following structure.

GET	space	API Characters	space	HTTP/1.1	0x0D 0x0A
Accept:	space	text/plain (or text/html)	0x0D 0x0A		
Host:	space	IP Address of VN-X35/235	0x0D 0x0A		
Authorization: Basic	space	Encoded User Name and Password	0x0D 0x0A 0x0D 0x0A		

Refer to Section 5 on details of the Accept and Authorization lines.

The API characters are as follows.

/api/receive?from=network&from.ip=data1&from.protocol=tcp\_passive&from.ip\_translate=on&to=audio

### Example

/api/receive?from=network&from.ip=10.0.0.100&from.protocol=tcp\_passive&from.ip\_translate=on&to=audio

Specify the client IP address for from.ip=. When from.ip\_translate is set to off, VN-X35/235 will standby to receive audio data from the IP address specified at from.ip. When from.ip\_translate is set to on, VN-X35/235 will ignore from.ip and standby to receive audio data from the source IP address of this API.

2) VN-X35/X235 returns a response.

Example of VN-X35 :

HTTP/1.1 200 OK<CRLF>

Connection: Keep-Alive<CRLF>

Content-type: text/plain<CRLF>

Date: Fri, 13 MAY 2005 07:33:12 GMT<CRLF>

Server: VN-X35 Network Camera/1.0.0<CRLF>

x-vnx35\_response:

from=network&from.ip=10.0.0.100&from.protocol=tcp\_passive&from.ip\_translate=on&to=audio<CRLF><CRLF>

200 OK<CRLF>

The client may disconnect the TCP80 at this point of time.

3) The client establishes a TCP connection to port number 49298.

4) The client continues to send 512 bytes of u-Law data with a 12-byte header.

0x00000080
Volume of payload (512 for u-Law)
Time stamp in 8kHz
u-Law data (512 bytes)

5) To end, disconnect TCP49298.

## 8.2. Restrictions

### Restrictions on Number of Clients

Only 1 client is allowed to send audio data to VN-X35/235. VN-X35/235 will return an error for this API and TCP will be disconnected when this function is currently in use by another client.

### Timing of Data Sending

512 bytes, or in other words, 64 msec of audio data may be sent during each transmission. Send audio data at intervals as evenly as possible. A part of the data may be lost if audio data exceeding 2 seconds are sent to VN-X35/235 at one time.

## 9. List of Protocols and Port Numbers Used with VN-X35/235

VN-X35/235 uses the following protocols and port numbers.

Protocol / Port Number	Use
TCP 20, 21	FTP
TCP 25	SMTP (Mail by Alarm Action)
TCP 80	WEB setting page, API for Getting status and changing settings, acquisition of JPEG/MPEG-4 from VN-X35/235 by client, acquisition audio from VN-X35/235 by client
UDP 80	Search for VN-X35/235
TCP 110	POP (Mail by Alarm Action)
UDP 123	SNTP
TCP 5510	VSIP (Proprietary Protocol of Verint Systems Inc)
UDP 5510	VSIP (Proprietary Protocol of Verint Systems Inc)
UDP 9131	AMX Device Discovery Protocol
UDP 9541	VSIP (Proprietary Protocol of Verint Systems Inc)
TCP 10020, 10021, 10023	reserved for internal use
TCP 32040	Alarm server
TCP 49298	Audio sending from a client to VN-X35/235
TCP User Setting	Alarm on TCP
UDP User Setting	Alarm on UDP
UDP User Setting	Multicast Streaming

## 10. Customizing VN-X35/235's Built-in Viewer

The built-in viewer of VN-X35/235 consists of five ActiveX controls. These ActiveX controls are available for customized viewer.

### 10.1. List of ActiveX

- JPEG Viewer                      It can show JPEG video, and save still image.
- MPEG-4 Viewer                    It can show MPEG-4 video.
- Audio Monitor                      It can playback audio.
- Audio Sending Client              It can send audio from PC to VN-X35/235.
- PTZ Control Client                It can control digital ptz.

How to download ActiveX controls:

i) Please input URL below in Internet Explorer's url form.

VN-X35 "http://(IP Address)/x35.cab"

VN-X235 "http://(IP Address)/x235.cab"

Ex.) When IP address of VN-X35 is "192.168.0.2":

http://192.168.0.2/x35.cab

ii) Download dialog box is showed. Please click save button and copy to some folder in the PC.

## 10.2. Properties of ActiveX

### JPEG Viewer/MPEG-4 Viewer

Property	Meaning
IP	IP Address of VN-X35/235: Required when RcvMode is TCP. Default: 192.168.0.2
HttpPort	Port Number of VN-X35/235: Required when RcvMode is TCP. (1 - 65535) Default: 80
MultiIP	IP Address of multicast: Required when RcvMode is multicast. Default: 225.0.2.1 (JPEG), 225.0.3.1 (MPEG-4)
MultiPort	Port Number of multicast: Required when RcvMode is multicast. (1 - 65535) Default: 49152 (JPEG), 59152 (MPEG-4)
RcvMode	Desired stream (0: TCP, 1: multicast)
FrameRate *JPEG only	Frame Rate of JPEG To specify a frame rate lower than 1fps, use "-". For example, specify -5 for 1/5 fps. (15, 10, 7.5, 6, 5, 3, 2, 1, -2, -3, -5, -10, -15, -20, -30, -60) Default: 5
DispWidth	Width of Display When the size is different from original frame size, the image is scaled. Default: 640
DispHeight	Height of Display When the size is different from original frame size, the image is scaled. Default: 480
DispTitle	Display of Camera ID (0: hide, 1: display) Default: 0
DispMotion *JPEG only	Display of Motion Detection (0: hide, 1: display) Default: 0
DispPosTitle	Display of Position Title (0: hide, 1: display) Default: 0
DispTimeCode	Display of Time Code (0: hide, 1: display) Default: 0
TimeFormat	Format of Time Code ( 0: YYYY/MM/DD HH:MM:SS.mmm 1: YYYY/MM/DD HH:MM:SS 2: DD/MM/YYYY HH:MM:SS 3: MM/DD/YYYY HH:MM:SS 4: MM/DD HH:MM:SS 5: HH:MM:SS 6: HH:MM) *Y: Year M: Month D: Day H: Hour M: Minute S: Second m: milli second Default: 1
FolderName *JPEG only	Folder Name of saving still images. This folder is created in WindowsXP : MyDocuments WindowsVista : Documents

	Default: VN-X35 or VN-X235
OpPassword	Operator Password of VN-X35/235
Resolution	Current frame size of receiving stream (1: VGA, 2: QVGA, 3: QuadVGA) *This property is read only, cannot be set.

#### Audio Monitor/Audio Sending Client

Property	Meaning
IP	[Audio Monitor] IP address of VN-X35/235 in case of TCP receiving IP multicast address in case of multicast receiving [Audio Sending Client] IP address of VN-X35/235 Default: 192.168.0.2
Port *Audio Monitor only	Port number of VN-X35/235 in case of TCP receiving Port number of multicast in case of multicast receiving (1 – 65535) Default: 80
ApiPort *Audio Sending Client only	HTTP port number of VN-X35/235 (1 – 65535) Default: 80
SoundPort *Audio Sending Client only	Destination port number of audio stream from PC to VN-X35/235 (1 – 65535) Default: 49298
Result *Audio Sending Client only	Result of starting audio stream to VN-X35/235 by “Play()” method. (0: failed, 1: success)
Password	Operator password of VN-X35/235

#### PTZ Control Client

Property	Meaning
IP	IP address of VN-X35/235 Default: 192.168.0.2
HttpPort	Port number of VN-X35/235 (1 - 65535) Default: 80
DispLang	Language of error messages (0: Japanese, 1: English) Default: 0
OpPassword	Operator password of VN-X35/235
PanTiltSpeed	Speed of manual pan/tilt control (1 – 8) Default: 4
FocusZoomSpeed	Speed of manual zoom control (1 – 4) Default: 2
BlackAndWhiteMode	Easy Day and Night (VN-X35)/ True Day and Night (VN-X235) VN-X35 (0: Auto, 3: Color, 4: Black and White) VN-X235 (0: Auto-Low, 1: Auto-Mid, 2: Auto-High 3: Color, 4: Black and White)
WhiteBalance	White Balance (0: ATW, 2: AWC)
BLC	Back Light Compensation (0: Off, 1: Area1, 2: Area2, 3: Area3, 4: Area4)
AutoFunctionStatus	Status of current auto function (0: stop, 1: auto patrol is working)
PositionTitle(n)	Getting the position title of registered preset position n: Position Number (0 – 19)
FocusAssistMode	Focus Assist Mode (0: stopped, 1: working)

## 10.3. Method of ActiveX Control

### JPEG Viewer/MPEG-4 Viewer

Method	Meaning
Play()	Start playback
Stop()	Stop playback
Capture() *JPEG only	Save still image of JPEG (Saved folder is specified by "Folder Name" of property")
ResizeTo() *MPEG-4 only	Activate settings of "DispWidth" and "DispHeight" of property This is required for MPEG-4 viewer. JPEG viewer does not need the method.

### Audio Monitor/Audio Sending Client

Method	Meaning
Play()	[Audio Monitor] Start playback [Audio Sending Client] Start audio stream *Result of starting audio stream is stored in "Result" of property
Stop()	[Audio Monitor] Stop playback [Audio Sending Client] Stop audio stream
Destroy() *Audio Sending Client only	Finalize Audio Sending Client *It must be called when the application using ActiveX control is closed.

### PTZ Control Client

Method	Meaning												
Initialize()	Initialize PTZ Control Client *It must be called before using ptz control												
Destroy()	Finalizing PTZ Control Client *It must be called when the application using ActiveX control is closed.												
ManualCtrl(n)	Start Pan/Tilt according to specified direction <table border="0" style="margin-left: 20px;"> <tr> <td colspan="2"><b>Direction</b></td> <td><b>Number of "n"</b></td> </tr> <tr> <td>upper-left</td> <td>up    upper-right</td> <td>7 8 9</td> </tr> <tr> <td>left</td> <td>right</td> <td>4 5 6</td> </tr> <tr> <td>under-left</td> <td>down    under-right</td> <td>1 2 3</td> </tr> </table>	<b>Direction</b>		<b>Number of "n"</b>	upper-left	up    upper-right	7 8 9	left	right	4 5 6	under-left	down    under-right	1 2 3
<b>Direction</b>		<b>Number of "n"</b>											
upper-left	up    upper-right	7 8 9											
left	right	4 5 6											
under-left	down    under-right	1 2 3											
ZoomCtrl(n)	Start Zoom-In/Zoom-Out (n = 0: Zoom-In, n = 1: Zoom-Out)												
Stop()	Stop Pan/Tilt/Zoom												
SetAutoFunction(n)	Control Auto Patrol (n = 0: stop auto patrol, n = 2: start auto patrol)												
OnePushAWC()	Issue one push AWC												
SetPosition(n, str)	Register current position as preset position n: Position Number (0 – 19) str: Position Title (0 - 32 characters)												
DeletePosition(n)	Unregister specified preset position n: Position Number (1 – 19) *Cannot unregister Home Position												
MovePosition(n)	Move to specified preset position n: Position Number (0 – 19)												

## 10.4. How to use ActiveX Control by HTML

To use the ActiveX, insert the code below in <BODY> of HTML file.

These are examples for VN-X35.

### JPEG Viewer

```
<OBJECT ID="JPEGViewer"
  WIDTH = 1280
  HEIGHT= 960
  CLASSID="CLSID:C8AAA802-A053-4384-9975-0D0307745F18"
  CODEBASE="/x35.cab#version=1,0,2,2"
  <PARAM NAME="IP"           VALUE="192.168.0.2">
  <PARAM NAME="HttpPort"    VALUE="80">
  <PARAM NAME="DispWidth"   VALUE="1280">
  <PARAM NAME="DispHeight"  VALUE="960">
  <PARAM NAME="FrameRate"   VALUE="15">
  <PARAM NAME="RcvMode"     VALUE="0">
  <PARAM NAME="OpPassword"  VALUE="jvc">
</OBJECT>
```

### MPEG-4 Viewer

```
<OBJECT ID="MPEG4Viewer"
  WIDTH = 640
  HEIGHT= 480
  CLASSID="CLSID:A66693C8-5A5E-4D44-B6C9-A6803CE6B4B5"
  CODEBASE="/x35.cab#version=1,0,1,6"
  <PARAM NAME="IP"           VALUE="192.168.0.2">
  <PARAM NAME="HttpPort"    VALUE="80">
  <PARAM NAME="DispWidth"   VALUE="640">
  <PARAM NAME="DispHeight"  VALUE="480">
  <PARAM NAME=" RcvMode "   VALUE="0">
  <PARAM NAME="OpPassword"  VALUE="jvc">
</OBJECT>
```

### Audio Monitor

```
<OBJECT ID="AudioMonitor"
  WIDTH = 1
  HEIGHT= 1
  CLASSID="CLSID:EEF1E8CA-D887-4530-97F9-4C79ABCAE520"
  CODEBASE="/x35.cab#version=1,0,0,4"
  <PARAM NAME="IP"           VALUE="192.168.0.2">
  <PARAM NAME="Port"        VALUE="80">
  <PARAM NAME="StreamType"  VALUE="0">
</OBJECT>
```

### Audio Sending Client

```
<OBJECT ID="AudioSender"
  WIDTH = 1
  HEIGHT= 1
  CLASSID="CLSID:CAA77F3F-FADA-48d6-A9F3-C4B1D74C0E77"
  CODEBASE="/x35.cab#version=1,0,0,3"
  <PARAM NAME="IP"           VALUE="192.168.0.2">
  <PARAM NAME="ApiPort"     VALUE="80">
  <PARAM NAME="SoundPort"   VALUE="49298">
  <PARAM NAME="Password"    VALUE="jvc">
</OBJECT>
```

### PTZ Control Client

```

<OBJECT ID="PTZCtrl"
  WIDTH = 1
  HEIGHT= 1
  CLASSID="CLSID:5506B06A-9FED-4dc0-99E1-9AEF2F2B0509"
  CODEBASE="/x35.cab#version=1,0,1,0"
  <PARAM NAME="IP"           VALUE="192.168.0.2">
  <PARAM NAME="HttpPort"    VALUE="80">
  <PARAM NAME="OpPassword"  VALUE="jvc">
</OBJECT>

```

For VN-X235, use CLASSID and CODEBASE below.

	CLASSID CODEBASE
JPEG Viewer	C8AAA802-A053-4384-9975-0D0307745F18 ./x235.cab#version=1,0,2,4
MPEG-4 Viewer	A66693C8-5A5E-4D44-B6C9-A6803CE6B4B5 ./x235.cab#version=1,0,1,8
Audio Monitor	EEF1E8CA-D887-4530-97F9-4C79ABCAE520 ./x235.cab#version=1,0,0,6
Audio Send Client	CAA77F3F-FADA-48d6-A9F3-C4B1D74C0E77 ./x235.cab#version=1,0,0,4
PTZ Control Client	02A76DDA-8659-4c06-8C13-61015970DAEF ./x235.cab#version=1,0,0,1

**How to know CLASSID and CODEBASE**

(1) CLASSID

CLASSID of ActiveX is described in the set up information file (\*.inf) stored in the cabinet file (\*.cab) that can be downloaded from the camera. (See Chapter 10.1.)

To get the \*.inf file, decompress the \*.cab file by some utility tool.

(2) CODEBASE

The CODEBASE includes cabinet file name and version number. The cabinet file is the \*.cab that can be downloaded from the camera.

The version is the version of the ActiveX (\*.ocx) stored in the cabinet file. To know the version number, read "FileVersion" in the set up information file, \*.inf. Or right-click the ActiveX (\*.ocx), select property, and read version information.

**Sample code**

```

<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML4.0 Transitional//EN">
<HTML>
<HEAD>

```

```

<META http-equiv="Content-Type" content="text/html;charset=euc-jp">
<TITLE>VN-X35/235 Sample Client</TITLE>
</HEAD>

<SCRIPT LANGUAGE=JAVASCRIPT>
// ***** JPEG Viewer *****
function play_click(play_btn, ip, http_port)
{
    if(play_btn.value == "Play"){
        JPEGViewer.IP = ip.value;
        JPEGViewer.HttpPort = http_port.value;
        JPEGViewer.Play();
        play_btn.value = "Stop";
    }
    else{
        JPEGViewer.Stop();
        play_btn.value = "Play";
    }
}

function capture_click()
{
    JPEGViewer.Capture();
}

// ***** Audio Monitor *****
function receive_click(rcv_btn, ip, http_port)
{
    if(rcv_btn.value == "Receive"){
        AudioMonitor.IP = ip.value;
        AudioMonitor.Port = http_port.value;
        AudioMonitor.Play();
        rcv_btn.value = "Stop";
    }
    else{
        AudioMonitor.Stop();
        rcv_btn.value = "Receive";
    }
}

// ***** Audio Sender *****
function send_click(send_btn, ip, http_port)
{
    if(send_btn.value == "Send"){
        AudioSender.IP = ip.value;
        AudioSender.Port = http_port.value;
        AudioSender.Play();
        send_btn.value = "Stop";
    }
    else{
        AudioSender.Stop();
        send_btn.value = "Send";
    }
}

// ***** PTZ Control *****
var f_init = 0;
function PTControl(num){
    if (f_init == 0)
        InitPTZCtrl();

    PTZCtrl.ManualCtrl(num);
}

```

```

function ZoomControl(num){
    if (f_init == 0)
        InitPTZCtrl();

    PTZCtrl.ZoomCtrl(num);
}

function InitPTZCtrl(){
    PTZCtrl.OpPassword = "jvc";
    PTZCtrl.IP = myForm.IP.value;
    PTZCtrl.HttpPort = myForm.HTTP_PORT.value;
    PTZCtrl.Initialize();
    f_init = 1;
}

function mouse_up(){
    PTZCtrl.Stop();
}

function close_window(){
    AudioSender.Destroy();
    PTZCtrl.Destroy();
}

</SCRIPT>

<BODY STYLE="font-size:12px;font-family:arial;color:#ffffff" bgcolor="#000000"
        onunload="close_window()">

<!-- JPEG Viewer ActiveX -->
<OBJECT ID="JPEGViewer"
    WIDTH = 640
    HEIGHT= 480
    CLASSID="CLSID:C8AAA802-A053-4384-9975-0D0307745F18"
    STYLE="border-style:solid;border:1px;border-color:#ffffff;">
    <PARAM NAME="IP"           VALUE="192.168.0.2">
    <PARAM NAME="HttpPort"     VALUE="80">
    <PARAM NAME="DispWidth"    VALUE="640">
    <PARAM NAME="DispHeight"   VALUE="480">
    <PARAM NAME="FolderName"   VALUE="VN-XSeries">
    <PARAM NAME="FrameRate"    VALUE="15">
    <PARAM NAME="RcvMode"      VALUE="0">
</OBJECT>

<!-- Audio Monitor ActiveX -->
<OBJECT ID="AudioMonitor"
    WIDTH = 1
    HEIGHT= 1
    CLASSID="CLSID:EEF1E8CA-D887-4530-97F9-4C79ABCAE520">
    <PARAM NAME="IP"           VALUE="192.168.0.2">
    <PARAM NAME="Port"         VALUE="80">
    <PARAM NAME="StreamType"   VALUE="0">
</OBJECT>

<!-- Audio Sender ActiveX -->
<OBJECT ID="AudioSender"
    WIDTH = 1
    HEIGHT= 1
    CLASSID="CLSID:CAA77F3F-FADA-48d6-A9F3-C4B1D74C0E77">
    <PARAM NAME="IP"           VALUE="192.168.0.2">
    <PARAM NAME="ApiPort"      VALUE="80">
    <PARAM NAME="SoundPort"    VALUE="49298">

```

```

    <PARAM NAME="Password"          VALUE="jvc">
</OBJECT>

<!-- PTZ Control ActiveX -->
<OBJECT ID="PTZCtrl"
  WIDTH = 1
  HEIGHT= 1
  CLASSID="CLSID:5506B06A-9FED-4dc0-99E1-9AEF2F2B0509">
  <PARAM NAME="IP"                VALUE="192.168.0.2">
  <PARAM NAME="HttpPort"         VALUE="80">
</OBJECT>

<FORM NAME="myForm">
<table>
  <tr>
    <td>
      VN-X35/235 IP Address
      <INPUT TYPE="TEXT" NAME="IP" VALUE="192.168.0.2">
      HTTP Port
      <INPUT TYPE="TEXT" NAME="HTTP_PORT" VALUE="80">
    </td>
  </tr>
  <tr>
    <td>
      JPEG Viewer
      <INPUT TYPE="BUTTON" NAME="PLAY_BTN" style="width:70px"
        VALUE="Play" onclick="play_click(PLAY_BTN, IP, HTTP_PORT)">
      <INPUT TYPE="BUTTON" NAME="CAPTURE_BTN" style="width:70px"
        VALUE="Capture" onclick="capture_click()">
    </td>
  </tr>
  <tr>
    <td>
      Audio
      <INPUT TYPE="BUTTON" NAME="RCV_BTN" style="width:70px"
        VALUE="Receive" onclick="receive_click(RCV_BTN, IP, HTTP_PORT)">
      <INPUT TYPE="BUTTON" NAME="SEND_BTN" style="width:70px"
        VALUE="Send" onclick="send_click(SEND_BTN, IP, HTTP_PORT)">
    </td>
  </tr>
  <tr>
    <td>
      PTZ Control
    </td>
  </tr>
</table>

<INPUT TYPE="BUTTON" VALUE="Up"
  STYLE="width:40px;top:630px;left:61px;position:absolute"
  onmousedown="PTControl(8)" onmouseup="mouse_up()" onmouseout="mouse_up()">
<INPUT TYPE="BUTTON" VALUE="Left"
  STYLE="width:40px;top:650px;left:41px;position:absolute"
  onmousedown="PTControl(4)" onmouseup="mouse_up()" onmouseout="mouse_up()">
<INPUT TYPE="BUTTON" VALUE="Right"
  STYLE="width:40px;top:650px;left:81px;position:absolute"
  onmousedown="PTControl(6)" onmouseup="mouse_up()" onmouseout="mouse_up()">
<INPUT TYPE="BUTTON" VALUE="Down"
  STYLE="width:40px;top:670px;left:61px;position:absolute"
  onmousedown="PTControl(2)" onmouseup="mouse_up()" onmouseout="mouse_up()">

<INPUT TYPE="BUTTON" NAME="TELE_BTN" VALUE="+"
  STYLE="width:40px;top:635px;left:134px;position:absolute"
  onmousedown="ZoomControl(0)" onmouseup="mouse_up()" onmouseout="mouse_up()">

```

```
<INPUT TYPE="BUTTON" NAME="WIDE_BTN" VALUE="-"
  STYLE="width:40px;top:665px;left:134px;position:absolute"
  onmousedown="ZoomControl(1)" onmouseup="mouse_up()" onmouseout="mouse_up()">
</FORM>
</BODY>
</HTML>
```

## 10.6. Notes

- Enable the JPEG/MPEG-4 frame size that you want in “Basic Settings2” or “Encoding” page of VN-X35/235.
- Start Multicast stream on VN-X35/235 Web page to use Multicast. The ActiveX control does not send request to VN-X35/235 for starting Multicast stream.
- Set unique Multicast address and port number to each Multicast stream if multiple multicast streams are required in the system.
- Reload of ActiveX control is required to change Multicast property.
- Please execute “Play()” method at interval of 100msec when two or more viewer ActiveX is used by one application. In case of execution at the same time, the stream might not be able to get correctly.

## 11. FAQ

(1) Low Frame rate due to long delay of network

- Causes of Low Frame Rate

During transmission via TCP, VN-X35/235 sends out the following data by receiving the Ack of TCP. When network delay is long, reception of Ack will be delayed and sending rate will drop. This therefore leads to a drop in the frame rate.

- Countermeasure

This problem can be avoided by receiving via multicast. Multicast uses UDP and Ack does not exist. As such, the sender will be able to continue sending without being affected by network delays.