Network Video Server CGI Application Programming Interface (NVSCGI API)

Compatible with EVxx8x Product Series (EV1180)

For Firmware v1.0.7(b5) or above

Ver. 1.4

Document History

Version	Date	Comment
1.0 (beta)	2010/11/5	initial version.
1.1	2010/11/10	Added RTSP Stream Video Section; removed HTTP examples applicable to CGI for EVxx5x series; added explanation of grey text (Future Functionality)
1.2	2010/11/15	Modify values in 3.3.5 (sensor config) Added JSON example Updated 3.3.3 (get video config) and 3.3.4 (set video config)
1.3	2011/02/10	Add Notification API, Notify_Stream.cgi Add User Account Management CGI interface
1.4	2011/04/27	**Add** action_mail.cgi event.cgi event_log.cgi httpport.cgi nas.cgi record_prepost.cgi remote_log.cgi sdcard.cgi sdcard_del.cgi sdcard_download.cgi sdcard_format.cgi sdcard_list.cgi system_log.cgi system_reboot.cgi user_del.cgi

		web_reboot.cgi **Modify** Video.cgi
1.4a	2011/06/09	**Add** video_info.cgi

Contents

1 Overview

Network Video Server CGI Application Programming Interface (NVSCGI-API) is an HTTP-based API for network video server and IP camera products. Users can write program easily by calling this API to access all functionalities provided by our IP cameras including configuration and control facilities.

The API uses the same format in transporting HTTP-based message. We will describe the command HTTP request format in the next chapter.

We also provide the RTSP interface for our IP cameras.

1.1 Support Platform

This document is solely intended for the EVxx8x series CGI API. Please refer to the NVS CGI API version 1.5 document for the EVxx5x series.

This document is based on firmware version 1.0.7 build 005 or above.

1.2 Future Functionality

Below in the interface description are parameters/functions in gray text. This represents parameters/functions that are currently not available, but will be available in the future. While these parameters need not be included in CGI requests, they will be present in CGI responses; these values can be ignored.

1.3 API versions

Though we provide a common API for all IP camera models, it may not apply to some older models which were produced before the first version of this API was published. We may also publish the further versions of this API in the future. So there may be some difference between different versions of the API. However, all our products shall provide the API version information with every firmware version for each model.

1.4 Valid values

The following valid values are used in this document:

Values	Description
An integer	Any number between -2147483647 (-2^{31}-1) and 2147483647 (2^{31}-1).
m ... n	Any number between number m and number n.
#	A number equal to or greater than 0
A string	Any string encoded by UTF-8
An IP address	A string limited to contain an IP address of the format xxx.xxx.xxx.xxx, where xxx is a number between 0 to 255. Example: 192.168.0.90
A MAC Address	A string limited to contain a MAC address of the format xx:xx:xx:xx:xx:xx, where xx is a hexadecimal value. Example: 00:40:8c:cd:00:00
A time	A string limited to contain a time of the format hh:mm:ss. Example: 23:01:14

A date	A string limited to contain a date of the format yyyy-mm-dd. Example: 2004-02-16
<value 1>, <value 2>, <value 3>, ...	Enumeration, only the given values are valid.
<*italic string*>	Every italic strings inside brackets including the brackets should be replaced by proper values.

2 HTTP Interface

An HTTP-based protocol always includes two kinds of message, request and response. An IP camera has a service to wait and accept a TCP connection request with a specified port and to process the request message from a user defined application. In this chapter, we will describe the common format comprising all the different request and response messages. You may also refer to the RFC 1945 HTTP/1.0.

2.1 Request messages

To query information for an IP camera, use the syntax

GET http://*<camera name>*/*<CGI-URL>*?*<parameter>*=*<value>* HTTP/1.0<CRLF> Authorization: Basic

<basic-cookie><CRLF>

<CRLF>

where,

<CGI-URL> is a URL of a CGI. For example, get basic information is "/config/info.cgi".

Authorization is optional for some CGIs.

<basic-cookie> is the base64 encoding of userid:password.

<CRLF> is Carriage Return and Line Feed (\r\n).

To set values in the IP camera, you may use HTTP GET method, the syntax is

GET http://*<camera name>*/*<CGI-URL>*

?*<parameter>*=*<value>*[&*<parameter>*=*<value>*...] HTTP/1.0<CRLF> Authorization: Basic

<basic-cookie><CRLF>

<CRLF>

or HTTP method POST, the syntax is

POST http://*<camera name>*/*<CGI-URL>* HTTP/1.0<CRLF> Authorization:

Basic *<basic-cookie>*<CRLF>

Content-Type: application/x-www-form-urlencoded<CRLF>

Content-Length: *<body length>*<CRLF>

<CRLF>

<parameter>=*<value>*[&*<parameter>*=*<value>*]

where,

<body length> is the length of the entity body.

<parameter> will be described in the following chapters. Valid characters only include letters ([A-Za-z]), digits ([0-9]) and underline (_). There is no such restriction for *<value>*. The content part of the post message should be encoded with "url- encoding" function.

2.2 Response messages

After the <CGI-URL> call, it will be processed and the default output will be transmitted as response message in JSON (JavaScript Object Notation) format:

HTTP/1.0 <HTTP code> <HTTP text><CRLF>

Content-Type: text <CRLF>

Content-Length: <body length><CRLF>

<CRLF>

<json format>

...

Below is an example of the JSON format:

{"profile_id_1":[{"resolution":"1920x1080", "bitrate":"8000", "codec":"H264", "framerate":"25", "gopsize":"30", "quality":"good", "mode":"full", "roistartx":"1", "roistarty":"0", "audioout":"on", "record":"Disable", "rate_control":"CBR"}], "profile_id_2":[{"resolution":"640x480", "bitrate":"1000", "codec":"H264", "framerate":"15", "gopsize":"30", "quality":"good", "mode":"resize", "roistartx":"1", "roistarty":"0", "audioout":"off", "record":"Disable", "rate_control":"CBR"}]}

2.3 Response status codes

The API status codes are defined here.

Table 1: HTTP status codes

HTTP code	HTTP text	Description
200	OK	The request has succeeded, but an application error may occur, please refer to each CGI response.
400	Bad Request	You used invalid or unsupported parameters or values for this IP camera.
401	Unauthorized	The request requires user authentication or the authorization was refused.
404	Not Found	This API is not supported for this IP camera.
500	Internal Error	The IP camera encountered an internal error or the API can not get the correct status.
503	Service Unavailable	The IP camera is unable to handle the request due to temporary overload.

2.4 Restart Web server

2.4.1 Set web server to be restarted

request:

POST /config/web_restart.cgi

※ The web server will temporarily stopped for about 5 seconds.

3 Configuration API

The CGIs under /config can only be accessed by users who have 'config' privilege.

3.1 device information

3.1.1 get basic information

request:

GET /config/info.cgi

No authentication required. response:

Name	Value	Description
model	A string	model name
product	A string	product name of camera
brand	A string	brand name
version	A string	version number
build	A string	firmware build number
sn		product serial no
nipca	A string	version number of NIPCA supported
name	A string	camera name
location	A string	camera location
macaddr	A MAC address	the MAC address
ipaddr	An IP address	IP address
netmask	An IP address	Subnet mask
gateway	An IP address	Default router/gateway used for connecting devices attached to different networks and networks segment.
wireless	yes	Only displayed if has wireless
ptz	P, T, Z	Only show supported Pan or Tilt or Zoom. For example, ptz=P,T
inputs	#	The number of inputs
outputs	#	The number of outputs
speaker	yes, no	Only displayed if the IP camera has speaker.
videoout	yes, no	Only displayed if the IP camera has video out connector
dns		DNS server address
dns1		alternative DNS server address
hiddenmod	A string	Display the model name mapped from.

3.1.2 get system date and time

request:

GET /config/datetime.cgi

response:

Name	Value	Description
method	0, 1	0: disable ntpd (manual sync) 1: enable ntpd
timeserver	A host or IP address	NTP time server host name or IP address.
timezone	#	time zone ID, see Time zone
date	A date	yyyy-mm-dd
time	A time	hh:mm:ss
dstenable	no, yes	disable or enable the DST (Daylight Saving Time)

dstauto	no, yes	set DST automatically
offset	A time	The amount of time the clock should be turned back/forward (hh:mm), due to DST.
starttime		The time when DST should be enabled in the format m.w.d/hh:mm:ss day d(0…6) of week w(1…5) of month m(1…12).
stoptime		Stop time when DST should be disabled in the same format as above

3.1.3 set system date and time

request:

GET/POST /config/datetime.cgi

parameters:

response:

see above table

3.2 users and groups

3.2.1 get users

Request

GET /config/user_list.cgi

Parameters:

None or name=<username>

Response:

If no request parameter

Name	Value	Description
users	#	The total number of users
<username> …		For example, admin=admin It will display all user names line by line.

If request parameters is name

Name	Value	Description
password	A string	Base 64 encoded password
group	A string	Group name
privilege	A string	(optional) the permission of this user

※ Each User Access Management modification should also execute web_restart.cgi to refresh the record.

3.2.2 add or modify a user

Request

GET/POST /config/user_mod.cgi

Parameters:

Name	Value	Description
name	A string	User name
password	A string	Base 64 encoded password

group	A string	Group name
privilege	A string	(optional) the permission of this user

※ Each User Access Management modification should also execute web_restart.cgi to refresh the record.

3.2.3 delete users

Request

GET/POST /config/user_del.cgi

Parameters:

Name=<username1>,<username2>,...

You can delete more than one user account via one command

Response:

Name=<username1>,<username2>,....

※ Each User Access Management modification should also execute web_restart.cgi to refresh the record.

3.2.4 get groups

Request

GET/POST /config/group_list.cgi

Parameters:

None or name=<username>

Response:

If no request parameters,

Name	Value	Description
groups	An integer	The total number of groups
<groupname>	<user1>,...	For example, admin=admin,root

Response:

If request parameters,

Name	Value	Description
groups	An integer	The total number of groups
privilege	Ptz, outputs, video, config	The permission list for this group

3.2.5 query support privileges

Request

GET/POST /config/privilege_info.cgi

Response:

Name	Value	Description
privilege	Ptz, outputs, video, config	Available privileges.

3.3 video, sensor, audio

3.3.1 get stream config

Request:

GET /config/stream.cgi

response:

Name	Value	Description
auth	Enable,Disable	Stream auth
stream_name	string	Stream url name
rtsp_port	Integer	The port of rtsp
rtp_video_port	Integer	The video port of rtp
rtp_audio_port	Integer	The audio port of rtp
multicast	On,off	Stream Support multicast
multicast_ip	String (ipv4 format)	Multicast ip address
multicast_port	Integer	Multicast port
multicast_ttl	Integer (1-255)	Multicast ttl number
max_client	Integer (0-20)	Max connect client number

3.3.2 set stream config

request:

GET/POST /config/stream.cgi

parameters:

see above table

response:

see above table

3.3.3 get video config

request:

GET /config/video.cgi

parameters:

profile_id=<video profile number>; if no profile_id is specified, then all available profiles will be provided

response:

Name	Value	Description
sensor_mode	"5mp" - 5MP mode "3mp" - 3MP mode "1080p" - 1080p mode "1mp" - 1.3MP mode (A models) "720pb" - Minilux 720p mode	Max resolution
profile_id_<n>	1..4	The profile id
resolution	1920x1080/ 640x480/ 320x240	width of resolution
bitrate	An integer (1000-12000)	in kbit/s
codec	MPEG4,MJPEG,H264	a video codec
framerate	1 ... 30	a frame rate in fps
gopsize	30/60/90/120	the MPEG GOP size which means <n> times of framerate. (1-4 fps)
quality	excellent/good/normal/poor/bad	only used when the codec is MJPEG
roistartx	200/(0-1280)	Video cropper start x
roistarty	100/(0-500)	Video cropper start y
audioout	on, off	Video audio out
record	enable, disable	set not available yet
ratecontrol	CBR/VBR	set not available yet
tvout	off, sdtv, hdtv	If enable the TV out (SDTV/HDTV)

3.3.4 set video config

request:

POST /config/video.cgi

In the table below, substitute <n> with the specific profile ID to modify; a group of parameters must all use the specify the same profile ID.

<n>=<video profile number> must be 1/2/4/8

parameters:

Name	Value	Description
sensor_mode	"5mp" - 5MP mode "3mp" - 3MP mode "1080p" - 1080p mode "1mp" - 1.3MP mode (A models) "720pb" - Minilux 720p mode	Max resolution
resolution_p<n>	1920x1080/ 640x480/ 320x240	width of resolution
bitrate_p<n>	An integer (1000-12000)	in kbit/s
codec_p<n>	MPEG4,MJPEG,H264	a video codec
framerate_p<n>	1 ... 30	a frame rate in fps
gopsize_p<n>	30/60/90/120	the MPEG GOP szie which means <n> times of framerate. (1-4 fps)
quality_p<n>	excellent/good/normal/poor/bad	only used when the codec is MJPEG
roistartx_p<n>	200/(0-1280)	Video cropper start x
roistarty_p<n>	100/(0-500)	Video cropper start y
audioout_p<n>	on, off	Video audio out
record_p<n>	enable, disable	set not available yet
ratecontrol _p<n>	CBR/VBR	set not available yet
tvout_p<n>	off, sdtv, hdtv	Set TV out specification

Note: The number of the profile being set must be one, two or four.

WARNING: profile_id 1must be set to H.264, 1920x1080; do not modify profile_1 codec, resolution and mode; changes may result in loss of video

response:

see the above table.

Example 1 (1 profile) :

http://IP_address/config/video.cgi?
sensor_mode=5mp&
framerate_p1=10&ratecontrol_p1=CBR&bitrate_p1=8000&resolution_p1=2592x1920&codec_p1=H264&mode_p1=full&record_p1=off&audioout_p1=on&tvout_p1=off&

Example 2 (2 profiles):

http://IP_address /config/video.cgi?
sensor_mode=1080p&
framerate_p1=20&ratecontrol_p1=CBR&bitrate_p1=4000&resolution_p1=1920x1080&codec_p1=H264&record_p1=off&audioout_p1=on&tvout_p1=off&
framerate_p2=15&ratecontrol_p2=CBR&bitrate_p2=2000&resolution_p2=640x480&codec_p2=MPEG4&record_p2=off&audioout_p2=off&tvout_p2=off&

The tables below shows certain profile resolution/frame rate settings that may have limitations based on profile ID.

sensor mode	Max resolution & frame rate		
	1 profile & 1st profile resolution list(@10fps)	2 profiles & 2nd profile/ resolution list(@10fps)	4 profiles' resolution(@10fps)
5MP	2592x1920	736x480	640x480 only
	1024x768	640x480	
	800x600	320x240	

			160x120	
3MP	1 profile & 1st profile resolution list(@20fps)		2 profiles & 2nd profile/ resolution list(@20fps)	4 profiles' resolution(@20fps)
	2048x1536		736x480	640x480 only
	1024x768		640x480	
	800x600		320x240	
			160x120	
1080p	1st profile resolution list (30fps or 25 fps)		2 profiles & 2nd profile/ resolution list(@20fps)	4 profiles' resolution(@20fps)
	one profile	**two profiles**	736x480	640x480 only
	1920x1080 @ 30fps	1920x1080 @ 25fps	640x480	
	1280x720 @ 30fps	1280x720 @ 25fps	320x240	
			160x120	
1mp (A model)	1 profile & 1st profile resolution list(@30fps)		2 profiles & 2nd profile/ resolution list(@30fps)	4 profiles' resolution(@20fps)
	1280x1024		736x480	640x480 only
	1024x768		640x480	
	800x600		320x240	
			160x120	
720p	1 profile & 1st profile resolution list(@30fps)		2 profiles & 2nd profile/ resolution list(@30fps)	4 profiles' resolution(@20fps)
	1280x720		736x480	640x480 only
			640x480	
			320x240	
			160x120	

※ *If enable the TV out(SDTV or HDTV), the video profile setting should be configured as 1080p with 2 profiles setting ONLY. This is the system resource limitation.*

3.3.5 get valid resolution list

With different sensor modes, we provide various resolutions for users to choose from. Users may query video_info.cgi to know which available resolution can be set for profile 1 and profile 2.

request:

GET /config/video_info.cgi

parameters:

Name	Value	Description
sensor_mode	"5mp" - 5MP mode "3mp" - 3MP mode "1080p" - 1080p mode "1mp" - 1.3MP mode (A models) "720pb" - Minilux 720p mode	Sensor mode has been set.
profile_id_1	A string	Valid resolution list for profile 1
profile_id_2	A string	Valid resolution list for profile 2

※ *Once if the 4 profile (Video/Audio>Video Setting>Profile Mode) is enabled, the only valid resolution for all 4 profiles will be VGA (640x480) only.*

3.3.6 get sensors config

request:

GET /config/sensor.cgi

response: (only supported parameters are displayed.)

Name	Value	Description
brightness	An integer	the brightness (0…255)
Contrast	An integer	the contrast (0…255)
saturation	An integer	the saturation (0…255)
sharpness	An integer	the sharpness (0…255)
max_exposure	An integer	the max exposure level (range 0~4)
man_exposure	An integer	the manual exposure level (range 0~4)
max_gain	An integer	the max gain level (range 0~4)
man_gain	An integer	the manual gain level (range 0~4)
autoexposurelimit	Yes,no	To limit the auto exposure range or not
Limit_upper	An integer	Once the autoexposurelimit is set to YES, limit_upper shoud be set between 0~+2EV,
Limit_lower	An integer	Once the autoexposurelimit is set to YES, limit_lower shoud be set between 0~ -2EV
Aewin	integerMatrix	the AE window matrix
Blc	An integer	the backlight compensation level (range 0~4)
defilicker	An integer	deflicker frequency value.(50 or 60)
noisefilter	An integer	the noise filter value
Hdr	An integer	the high dynamic range level
Lsc	An integer	the len shading correction level
whitebalance	auto,disabled	the white balance
wbsave	off,on	save current white balance value to config
autoexposure	yes,no	enable or disable the auto auto exposure
autogaincontrol	yes,no	enable or disable the auto auto gain control function
nf_mode	auto,manual	Noise Reduction [Auto/Manual]
dn_mode	Auto,manual	Day/Night mode [Auto, Force Day, Force Night, Triggered by DI]
mirror	off,on	disable/enable image mirror horizontally
flip	off,on	disable/enable image flip vertically
color	yes,no	Select color mode or B/W mode
dn_bw	on,off	enable or disable night B/W mode
dn_fps	An integer	the night mode fps type(range 0~3)
dnicr	off,auto	
dnls	auto,day,night	
ext_wdr	enable, disable	WDR

3.3.7 set sensors config

request:

GET/POST /config/sensor.cgi

response:

see the above table.

3.3.8 get audio config

request:

GET /config/audio.cgi

response:

Name	Value	Description
codec	aac,ulaw,alaw	the audio codec
channel	1 (fixed)	Number of audio channel (1, fixed)
bitrate	An integer	The output bitrate. (in kbit/s)
samplerate	8000 (fixed)	Sampling rate (8000, fixed)
vol_in	An integer	Volume of line-in (range 1-10)

vol_out	An integer	Volume of line-out (range 1-10)

3.3.9 set audio config

request:

see the above table

response:

see the above table

3.4 network

3.4.1 get network config

request:

GET /config/network.cgi

response:

Name	Value	Description
dhcp	off, on	disable/Enable dynamic IP address assignment
ip	An IP address	IP address
netmask	An IP address	subnet mask
gateway	An IP address	default gateway
dns1	An IP address	primary DNS server
dns2	An IP address	secondary DNS server
pppoe	off, on	use PPPoE
pppoeuser	A string	PPPoE user name
pppoepass	A string	PPPoE password
ddns	off, on	disable/enable dynamic ddns service
ddnsprovider		ID of the provider
ddnshost	A string	ddns host name
ddnsuser	A string	ddns user name
ddnspass	A string	ddns password
upnp	off, on	disable/enable UPnP
httpport	1 ... 65535	TCP port number for HTTP
httpexternalport	1 ... 65535	The external port number for upnp NAT router to map the HTTP service port of camera
rtspport	1 … 65535	The port number of RTSP service
rtspexternalport	1 … 65535	The external port number for upnp NAT router to map the RTSP service port of camera

3.4.2 set network config

request:

GET/POST /config/network.cgi

parameters:

see the above table.

response:

see the above table.

3.4.3 get DDNS settings

request:
GET /config/ddns.cgi

response:

Name	Value	Description
ddns	off, on	disable/enable dynamic DNS service
provider		ID of the provider
host		DDNS host name
user		DDNS user name
pass		DDNS password

3.4.4 set DDNS

request:
GET/POST /config/ddns.cgi

parameters:

see the above table.

response:
see the above table.

3.4.5 get HTTP port

request:
GET /config/httpport.cgi

response:

Name	Value	Description
httpport	An integer	Port number of HTTP protocol

3.4.6 set HTTP port

request:
GET/POST /config/httpport.cgi

parameters:

see the above table.

response:
see the above table.

※ After setting the http port with a new value, system should restart its web server via /config/web_restart.cgi command to have this configuration taken effect.

3.5 Event handling

3.5.1 get motion detection

request:
GET /config/motion.cgi

<n> = window id max number 3

response:

window type:

Name	Value	Description
totalnum	#	total motion detection window numbers. read-only.
sensitivity__<n>	0 ... 100	sensitivity
specificity__<n>		
enable__<n>	no, yes	disable/enable motion detection window #
mdw__<n>	A string	motion detection window # in the format x,y,w,h x,y is the coordinate. the 0,0 means the left top position. w,h is the width and height of the window.

3.5.2 set motion detection

request:

GET/POST /config/motion.cgi

parameters:

see the above table.

response:

see the above table.

3.5.3 get digital input

request:

GET /config/event_input.cgi

response:

Name	Value	Description
input	#	Digital input 1, 2 (Required)
type	NO NC	Normal Open Normal Close

3.5.4 set digital input

request:

GET/POST /config/event_input.cgi

parameters:

see the above table.

response:

see the above table.

3.5.5 set event rule

request:
GET /config/event.cgi

response:

Name	Value	Description
name	A string	Rule name
event_type	MOTION, DI, NLOSS, TIME	
action_type	RECORD, EMAIL, DO	
schedule	0	0 : disable scheduling
interval	An Integer	Period time
group_id	An integer	0 for default.
event_arg	A string	Arguments about event. **Trigger**: 3 digits, motion area enabled, e.q., 001, enable Area 3 110, enable Area 1 & 2
action_arg	A string	Arguments about action. **TIME**: An integer, action duration

3.6 Event Server

3.6.1 get email Server

request:
GET /config/action_mail.cgi

response: (only supported inputs and outputs are displayed)

Name	Value	Description
sender_user1		Sender Email address
to_user1		Recipient email address
host_user1		Email server address
port_user1		Email server port
user_user1		User name
pass_user1		User password
auth_user1		
enable_user1	yes,no	
timeout_user1	An Integer	Connection Timeout(sec)
ssl_user1	yes,no	Require SSL connection
time		
enable	yes,no	Enable primary email server

3.6.2 set email server

request:
GET/POST /config/action_mail.cgi

parameters:
see the above table.

response:
see the above table.

3.6.3 get NAS server

request:
GET /config/nas.cgi

response:

Name	Value	Description
nas	yes,no	Enable NAS server
protocol	NAS, SMB	Type of NAS server
addr	A string	Server Address
folder	A string	Folder path
user	A string	User account
pass	A string	User password

3.6.4 set NAS server

request:
GET /config/nas.cgi

parameters:
see the above table.

response:
see the above table.

3.7 System tools

3.7.1 get digital input/output

request:
GET /config/io.cgi

response: (only supported inputs and outputs are displayed)

Name	Value	Description
in1	off, on	Digital input set 1
in2	off, on	Digital input set 2
out1	off, on	Digital output set 1

3.7.2 set digital output

You can only set the available digital outputs, inputs are read-only.

request:
GET/POST /config/io.cgi

parameters:

out1	off, on	Digital output set 1

response:

see the above table.

3.7.3 get LED

request:

GET /config/led.cgi

response:

Name	Value	Description
pwrled	on, off	enable or disable the special purpose LED.
netled	on, off	
ir	on, off	

Only get the configuration of LEDs, not the flashing status.

3.7.4 set LED

request:

GET/POST /config/led.cgi

parameters:

see the above table.

response:

see the above table.

3.7.5 reset all configurations to the factory default

request:

GET/POST /config/system_reset.cgi

parameters:

Name	Value	Description
reset	go	Reset the system
keep_net	yes,no	Keep the network setting
keep_user	yes,no	Keep the user account

3.7.6 get RS-485 settings

request:

GET /config/rs485.cgi

response:

Name	Value	description
proto	PelcoD, PelcoP, none, Transparent	protocol type
devid	An integer	device ID of the RS-485 slave device. PelcoD: 1 ... 255 PelcoP: 1 ... 255
baudrate	1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200	custom baud rate
databits	7, 8	custom data bits
parity	None, Even, Odd	custom parity
stopbits	1, 2	custom stop bits
comm	RS484,RS422	custom communication mode

3.7.7 set RS-485 settings

request:

GET/POST /config/rs485.cgi

see the above table.

response:

see the above table.

3.7.8 get event log

request:

GET /config/event_log.cgi

response:

Event logs.

3.7.9 get system log

request:

GET /config/system_log.cgi

response:

System logs.

3.7.10 get remote event log server

If with log server, e.q. KIWI log server, to log information from devices for report output or statistics use, here you may enable the remote log server feature to send those log information to the defined log servers.

request:

GET /config/remote_log.cgi

response:

Name	Value	description
event_enable	0, 1	0: disable; 1: enable remote event log server
event_ip	IP Address	Event log server IP address
sys_enable	0, 1	0: disable; 1: enable remote event log server
sys_ip	IP Address	Sys log server IP address

3.7.11 set remote event log server

request:

GET/POST /config/remote_log.cgi

response:

see the above table.

3.7.12 reboot the camera

request:

GET/POST /config/system_reboot.cgi

response:

OK, for successfully rebooted.

3.8 Local storage

3.8.1 get SD card information

request:

GET /config/sdcard.cgi

response:

Name	Value	description
status	ready, write_protected, invalid, path_invalid	Status of SD card
total	An integer	Total space of SD card (bytes)
used	An integer	Used space of SD card (bytes)
free	An integer	Free space of SD card (bytes)
picture	An integer	Amount of subfolders which stored pictures
video	An integer	Amount of subfolders which stored videos

3.8.2 format SD card

request:

GET /config/ sdcard_format.cgi

parameters:

Name	Value	description
format	go	Do format or query SD status. **Note:** If field 'format' isn't given or SD card is being formatted, the device will report the status of formatting If field 'format' isn't given or SD card is being formatted, the ip camera reports the status of formatting

response:

Name	Value	description
status	none, formatting, ready, unformatted	Stats of SD card

3.8.3 SD card space control

request:

GET /config/sdcard_reserve.cgi

parameters:

Name	Value	description
enable	An integer	0: not recycling the space in used. 1: will recycling the space in used
day	An integer(N)	Valid value(N) is among 0~120 0: Not reserve any recorded files; recycling(delete files) the SD space if needed. N: Keep the recorded files within N days. This setting will cause the recording behavior to be stopped if the action is request to reserve the files in N days and no other space is available.

response:

see the above table.

3.8.4 list files in SD card

request:

GET /config/sdcard_list.cgi

parameters:

Name	Value	description
path	A string	List details under specified folder path
page	An integer	This command would list files of a page. You can indicate which list of page you would like to see.
pagesize	An integer	Amount of files listed in one page

response:

Name	Value	description
status	Available, unavailable	Status of SD Card, if SD Card is not available, the value would be 'unavailable', or it would show 'available'' unavailable', or it would show 'available'

path	A string	Path specified
page	An integer	This command would list files of a page. You can indicate which list of page you would like to see. **For example:** If got 40 files in the 'date' folder and would like to list the files in page 1 where it is assumed the number of files in each page is 20. The request url may be: GET /config/sdcard_list.cgi?type=picture&path=\20080704\00&page=1&pagesize=20 Where: type=picture: list the files in jpg format path=\20080229\10: (see below) page=1: list the files in page 1 pagesize=1: indicate that there are 20 files in each page And the server would response the fist 20 files which snapshoot at 2008/2/29
pagesize	An integer	How many files in a page. See more details in previous parameter
total_num		Total number of these files
total_page		Total page of these files
num		Number of files in indicated page
list		Attributes of this file, format is <timestamp>,<recording type>,<size> where: timestamp: yyyy-mm-dd HH:MM:SS recording type: d (digital input) or m (motion) size: size of file

3.8.5 download file in SD card

request:

GET /config/sdcard_download.cgi

parameters:

Name	Value	description
path	A string	Path of file
file	A string	The file name could be got in command /config/sdcard_list.cgi

response:

HTTP /1.0 200 OK<CRLF>
Content-Type: application/octet-stream<CRLF>
Content-Length: <size of file><CRLF>
<CRLF>
<Binary data of file>

Response when file is not available:

Name	Value	description
Num	An integer	Number of files which in deleting list
Path	A string	Path of file
File_<filename>	Integer	The status of deleting action of indicated file, <filename> 0: File is successfully deleted 1: File does not exist. 2: File is not deleted

3.8.6 delete files in SD card

request:

GET /config/sdcard_del.cgi

parameters:

Name	Value	description
path	A string	Path of file
name	A string	The file name could be got in command /config/sdcard_list.cgi

response:

Name	Value	description
Status	A string	Status of SD card
num	An integer	Number of files which in deleting list
path	A string	Path of file
List	A string	

4 Streaming

4.1 Audio & Video

4.1.1 Get a JPEG image

request:
GET/POST /config/jpeg.cgi

response:
HTTP/1.0 200 OK\r\n
Content-Type: image/jpeg\r\n\r\n
Content-Length: <image size>\r\n
\r\n
<Streaming Data>\r\n

4.1.2 RTSP Stream Video

Video can be streamed to a streaming video player using the rtsp interface.
The URL is in the following format:
rtsp://<**IP ADDRESS**>/rtpvideo<**1…4 or 1…8**>.sdp

Replace with the appropriate IP address.

rtpvideo1-4 represents ROI profiles with different characteristics. Some cameras support up to 8 ROI (e.g. EV8180F).
The default naming prefix is “rtpvideo”, but this is configurable.

Example:
rtsp://192.168.0.2/rtpvideo3.sdp

4.2 Record setting

4.2.1 get pre/post record setting

request:
GET/POST /config/record_prepost.cgi

response:

Name	Value	description
prebuf	An integer	Pre-alarm recording buffer (MB)
postbuf	An integer	Post-alarm recording buffer (MB)
maxbuf	An integer (read only)	Maximum 24 MB.
record_nas	on, off	Recording storage (NAS)
record_sd	on, off	Recording storage (SD Card)

4.2.2 set pre/post record setting

request:
GET/POST /config/record_prepost.cgi

see the above table.

response:

see the above table.

5 Camera Control API

5.1 motor control

5.1.1 add, delete or goto a PTZ preset

request:

GET/POST /config/ptz_preset.cgi

parameters:

Name	Value	Description
name	1…255	preset id name the maximum id depends on the RS485 slave device support
act	add del go	add the current position to the preset delete the preset go to the preset

response:

see the above table.

5.1.2 move PTZ continuously

request:

GET/POST /config/ptz_move_cont.cgi

parameters:

Name	Value	Description
p	-6…6	pan the device continuously. 0: stop >0: pan right <0: pan left
t	-6…6	tilt the device continuously. 0: stop >0: tilt up <0: tilt down
z	-6…6	zoom the device continuously. 0: stop >0: tele <0: wide

response:

see the above table. If the movement is out of boundary, you will get the actual relative p, t, z values it moves.

5.1.3 Focus continuously

request:

GET/POST /config/focus_cont.cgi

parameters:

Name Value Description

Name	Value	Description
f	-6…6	focus the device continuously. 0: stop >0: focus in <0: focus out

response:

see the above table.

6 Notification API

6.1.1 get the notification stream

request:
GET /config/notify_stream.cgi

response:
It will show all available events or status, then send only changed events or status. It will show keep_alive every 5 seconds.

Name	Value	Description
input1	on/off	event input # is triggered or not.
md#	#=1~3, on/off	event motion detection # is triggered or not
sd	invalid, ready, write_protected	status for SD card
vsignal1	on/off	status of video signal is on or lost
night	on/off	night mode status notification for pc client(on=night mode, off = day mode)
reboot	An Integer	A timestamp integer which show the reboot time of system. This event is only showed in the first notification of the connection, the rest notification would not show this event

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7 RTSP API

The Real-Time Streaming Protocol (RTSP) is a protocol to get audio and video streaming data provided by a media server. An IP camera can act as a media server and stream the real time audio and video . By RTSP request, a client application can get streaming data from an IP camera.

The format can be found in section 4.1.2. For additional details about the RTSP protocol please refer to RFC 2326.

8 I/O Ports API

Network cameras and video encoders have integrated digital input and output ports which enable connection to external devices such as detectors, lights, switches and alarm relays. The number of I/O ports is product dependent. In some products, each I/O port can be configured to act as input or output.

9 Appendix

9.1 Time zone

ID	Time zone
1	(GMT-12:00) International Date Line West
2	(GMT-11:00) Midway Island, Samoa
3	(GMT-10:00) Hawaii
4	(GMT-09:00) Alaska
5	(GMT-08:00) Pacific Time (US & Canada)
6	(GMT-08:00) Tijuana, Baja California
7	(GMT-07:00) Chihuahua, La Paz, Mazatlan
8	(GMT-07:00) Mountain Time (US & Canada)
9	(GMT-07:00) Arizona
10	(GMT-06:00) Central America
11	(GMT-06:00) Guadalajara, Mexico City, Monterrey
12	(GMT-06:00) Saskatchewan
13	(GMT-06:00) Central Time (US & Canada)
14	(GMT-05:00) Bogota, Lima, Quito, Rio Branco
15	(GMT-05:00) Eastern Time (US & Canada)
16	(GMT-05:00) Indiana (East)
17	(GMT-04:00) Caracas, La Paz
18	(GMT-04:00) Atlantic Time (Canada)
19	(GMT-04:00) Santiago
20	(GMT-04:00) Manaus
21	(GMT-03:30) Newfoundland
22	(GMT-03:00) Buenos Aires, Georgetown
23	(GMT-03:00) Brasilia
24	(GMT-03:00) Greenland
25	(GMT-03:00) Montevideo
26	(GMT-02:00) Mid-Atlantic
27	(GMT-01:00) Azores
28	(GMT-01:00) Cape Verde Is.
29	(GMT) Greenwich Mean Time : Dublin, Edinburgh, Lisbon, London
30	(GMT) Casablanca, Monrovia, Reykjavik
31	(GMT+01:00) Belgrade, Bratislava, Budapest, Ljubljana, Prague
32	(GMT+01:00) West Central Africa
33	(GMT+01:00) Sarajevo, Skopje, Warsaw, Zagreb
34	(GMT+01:00) Brussels, Copenhagen, Madrid, Paris
35	(GMT+01:00) Amsterdam, Berlin, Bern, Rome, Stockholm, Vienna
36	(GMT+02:00) Helsinki, Kyiv, Riga, Sofia, Tallinn, Vilnius
37	(GMT+02:00) Athens, Bucharest, Istanbul
38	(GMT+02:00) Beirut
39	(GMT+02:00) Harare, Pretoria
40	(GMT+02:00) Cairo
41	(GMT+02:00) Minsk
42	(GMT+02:00) Amman
43	(GMT+02:00) Windhoek
44	(GMT+02:00) Jerusalem
45	(GMT+03:00) Baghdad
46	(GMT+03:00) Moscow, St. Petersburg, Volgograd

ID	Time zone
47	(GMT+03:00) Tbilisi
48	(GMT+03:00) Nairobi
49	(GMT+03:00) Kuwait, Riyadh
50	(GMT+03:30) Tehran
51	(GMT+04:00) Baku
52	(GMT+04:00) Abu Dhabi, Muscat
53	(GMT+04:00) Yerevan
54	(GMT+04:30) Kabul
55	(GMT+05:00) Ekaterinburg
56	(GMT+05:00) Islamabad, Karachi, Tashkent
57	(GMT+05:30) Chennai, Kolkata, Mumbai, New Delhi
58	(GMT+05:30) Sri Jayawardenepura
59	(GMT+05:45) Kathmandu
60	(GMT+06:00) Astana, Dhaka
61	(GMT+06:00) Almaty, Novosibirsk
62	(GMT+06:30) Yangon (Rangoon)
63	(GMT+07:00) Krasnoyarsk
64	(GMT+07:00) Bangkok, Hanoi, Jakarta
65	(GMT+08:00) Beijing, Chongqing, Hong Kong, Urumqi
66	(GMT+08:00) Taipei
67	(GMT+08:00) Irkutsk, Ulaan Bataar
68	(GMT+08:00) Perth
69	(GMT+08:00) Kuala Lumpur, Singapore
70	(GMT+09:00) Yakutsk
71	(GMT+09:00) Osaka, Sapporo, Tokyo
72	(GMT+09:00) Seoul
73	(GMT+09:30) Adelaide
74	(GMT+09:30) Darwin
75	(GMT+10:00) Hobart
76	(GMT+10:00) Brisbane
77	(GMT+10:00) Vladivostok
78	(GMT+10:00) Canberra, Melbourne, Sydney
79	(GMT+10:00) Guam, Port Moresby
80	(GMT+11:00) Magadan, Solomon Is., New Caledonia
81	(GMT+12:00) Fiji, Kamchatka, Marshall Is.
82	(GMT+12:00) Auckland, Wellington
83	(GMT+13:00) Nuku'alofa