IP Camera CGI Interface (IPCamCGI)

Document History

Version	Date	Comment
1.20	2008-10-15	First release version.

Contents

1. Overview

IP Camera CGI Interface (IPCamCGI) is a HTTP-based API for the networked IP camera. Users can write program easily by sending CGI requests to access all functions provided by our IP cameras including: information, configuration, streaming data and the control functions.

We will describe the HTTP command format in the next chapter.

1.1. API versions

Generic CAS-3xx series IP camera models and all its OEM/ODM models support this CGI interface.

1.2. 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 equals 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

A HTTP-based protocol always includes two kinds of message, request and response. IP camera prepares a service to wait and accept TCP connection request with a specified port and to process the requests message from a user defined application. In this chapter, we will describe the common format of 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 of IP camera, use the syntax :

```
GET http://<camera IP address>/<CGI-URL> HTTP/1.0<CRLF>

Authorization: Basic <basic-cookie><CRLF>

<CRLF>
```

where,

`<CGI-URL>` is an URL of a CGI. For example, query device information is "/isystem.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 into IP camera, you may use HTTP GET method, the syntax is :

```
GET http://<camera IP address>/<CGI-URL>

?<parameter>=<value>[&<parameter>=<value>...] HTTP/1.0<CRLF>

Authorization: Basic <basic-cookie><CRLF>

<CRLF>
```

or

use HTTP POST method, the syntax is :

```
POST http://<camera IP address>/<CGI-URL> HTTP/1.0<CRLF>

Authorization: Basic <basic-cookie><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 alphabets([A-Za-z]), digits([0-9]) and underline(_). There is no such restriction for `<value>`.

2.2. Response messages

While IP camera receives request message from user, it will do the related action then output result as response message:

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

Content-Type: text/html<CRLF>

Content-Length: <body length><CRLF>

<CRLF>

<parameter>=<values>

...
```

2.3. Response status codes

The HTTP status codes are defined here.

HTTP status codes table

HTTP code	HTTP text	Description
200	OK	The request has succeeded, but an application error may occur, please refer to each CGI response.
204	No Content	Only reply HTTP head with message data
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.

3.   Configuration API

Only administrators can access this CGI group.

3.1.   device information

3.1.1. get CGI interface version

request:
    GET /cgiversion.cgi

response:

Name	Value	Description
CGIVersion	2	version number of CGI interface

3.1.2. query system information

request:
    GET /isystem.cgi

response:

Name	Value	Description
CameraName	A string	camera name
Location	A string	camera location
Model	A string	model name
FirmwareVersion	A string	firmware version, example : 3.06 (2008-10-06)
MACAddress	A MAC address	the MAC address, example : 00 FF 5C 8A 13 18
IPAddress	An IP address	IP address, example : 192.168.0.20
EthernetLink	Yes, No	Ethernet link status
EthernetSpeed	10M bps, 100M bps	Ethernet link speed
EthernetDuplex	Half Duplex, Full Duplex	Ethernet link duplex mode

3.1.3. get system configuration

request:
    GET /system.cgi

response:

Name	Value	Description
CameraName	A string	camera name (max length is 32)
Location	A string	camera location (max length is 64)
AdminID	A string	admin username (max length is 12)
AdminPassword	A string	admin password (max length is 8)
LEDControl	0,1,2	LED Control (0→Normal, 1→OFF, 2→Dummy)

3.1.4. set system configuration

request:
    GET/POST /system.cgi

response:

Name	Value	Description
CameraName	A string	camera name (Max Length is 32)

Location	A string	camera location (Max Length is 64)
AdminID	A string	admin username (Max Length is 12)
AdminPassword	A string	Admin password (Max Length is 8)
LEDControl	0,1,2	LED Control (0→Normal, 1→OFF, 2→Dummy)
ConfigReboot	Yes, No	No→ Set configuration and no reboot, Yes→Set configuration and reboot

response:
    see the 3.1.3 table.

3.1.5. get system date and time

request:
    GET /datetime.cgi

response:

Name	Value	Description
DateTimeMode	0, 1	0→Synchronized with Time Server, 1→Set Manually
TimeServerIPAddress	A host or IP address	NTP time server host name or IP address (Max Length is 64)
TimeServerProtocol	0, 1	0→NTP, 1→Time
TimeZone	(-12,-11,…,0,+1,…,+13)	time zone.
TimeZoneIndex	0...84	time zone ID, see Table 1: TimeZoneIndex
Date	A date	yyyy-mm-dd
Time	A time	hh:mm:ss

3.1.6. set system date and time

request:
    GET/POST /datetime.cgi

parameters:

Name	Value	Description
DateTimeMode	0, 1	0→Synchronized with Time Server, 1→Set Manually
TimeServerIPAddress	A host or IP address	NTP time server host name or IP address.(Max Length is 64)
TimeServerProtocol	0, 1	0→NTP, 1→Time
TimeZone	-12~+13	time zone
TimeZoneIndex	0...84	time zone ID, see Table 1: TimeZoneIndex
Date	A date	yyyy-mm-dd (Example : 2004-09-01)
Time	A time	hh:mm:ss (Example : 06:12:35)
ConfigReboot	Yes, No	No→Set configuration and no reboot, Yes→Set configuration and reboot

response:
    see the 3.1.5 table.

3.2. users

3.2.1. get user access control

request:
    GET /user.cgi

response:

Name	Value	Description
AccessControlEnable	0,1	0→Enable, 1→Disable

3.2.2. set user access control

request:
    GET/POST /user.cgi

parameters:

Name	Value	Description
AccessControlEnable	0,1	0➔Enable, 1➔Disable
ConfigReboot	Yes, No	No➔Set configuration and no reboot, Yes➔Set configuration and reboot

response:
    see the 3.2.1 table.

3.2.3. get user list

request:
    GET /userlist.cgi

response:
    UserName =<value><CRLF>
    UserPassword =<value><CRLF>
    UserPrivilege =<value><CRLF>
    UserName =<value><CRLF>
    UserPassword =<value><CRLF>
    UserPrivilege =<value><CRLF>

    :

    :

Name	Value	Description
UserName	A string	user name (Max Length is 12)
UserPassword	A string	user password (Max Length is 8)
UserPrivilege	0,1	0➔view only, 1➔view, PanTilt Control and Image Upload/E-mail

3.2.4. add one user

request:
    GET/POST /userlist.cgi

parameters:
    UserName =<value>&UserPassword =<value>&UserPrivilege =<value><CRLF><CRLF>

Name	Value	Description
UserName	A string	user name (Max Length is 12)
UserPassword	A string	user password (Max Length is 8)
UserPrivilege	0,1	0➔view only, 1➔view, PanTilt Control and Image Upload/E-mail
UserAdd	Yes	add one user

response:
    see the 3.2.3 table.

3.2.5. delete one user

request:

GET/POST /userlist.cgi

parameters:

Name	Value	Description
UserName	A string	user name
UserDelete	Yes	delete one user

response:
    see the 3.2.3 table.

3.2.6. get active user

request:
    GET /iactiveuser.cgi

response:
    UserIPAddress =<value><CRLF>
    UserName =<value><CRLF>
    AccessDateTime =<value><CRLF>
    MinisecondPerPacket =<value><CRLF>
    UserIPAddress=<value><CRLF>
    UserName =<value><CRLF>
    AccessDateTime =<value><CRLF>
    MinisecondPerPacket =<value><CRLF>

    :

    :

Name	Value	Description
UserIPAddress	An IP address	IP address of client
UserName	A string	user name
AccessDateTime	A date and time	start time of getting video (Example : 2008-10-01 10:39:46)
MinisecondPerPacket	#	Milliseconds / Packet

3.3. image

3.3.1. query image information

request:
    GET /iimage.cgi

response:

Name	Value	Description
VideoResolution	160 x 120, 320 x 240, 640 x 480	Image Resolution
CompressionRate	Very Low, Low, Medium, High, Very High	Compression Rate
FrameRate	1, 5, 7, 15, 20, Auto	Frame Rate
FrameSize	# Bytes	Frame Size
LightFrequency	# Hz	Light Frequency

3.3.2. get image configuration

request:
    GET /image.cgi

response:

Name	Value	Description

VideoResolution	0, 1, 2	0→160 x 120, 1→320 x 240, 2→640 x 480
CompressionRate	0, 1, 2, 3, 4	0→Very Low, 1→Low, 2→Medium, 3→High, 4→Very High
FrameRate	0, 1, 5, 7, 15, 20	0→Auto, 1→1, 5→5, 7→7, 15→15, 20→20
BrightnessControl	1...128	Brightness Control
ContrastControl	1...128	Contrast Control
SaturationControl	1...128	Saturation Control
LightFrequency	0, 1	0→50 Hz, 1→60 Hz
Mirror	0...3	Bit0→Horizontal Mirror (0: Disable, 1: Enable) Bit1→Vertical Mirror (0: Disable, 1: Enable)
AntiFlickerEnable	0, 1	0→Anti-Flicker Disable, 1→Anti-Flicker Enable

3.3.3. set image configuration

request:
GET/POST /image.cgi

parameters:

Name	Value	Description
VideoResolution	0, 1, 2	0→160 x 120, 1→320 x 240, 2→640 x 480
CompressionRate	0, 1, 2, 3, 4	0→Very Low, 1→Low, 2→Medium, 3→High, 4→Very High
FrameRate	0, 1, 5, 7, 15, 20	0→Auto, 1→1, 5→5, 7→7, 15→15, 20→20
BrightnessControl	1...128	Brightness Control
ContrastControl	1...128	Contrast Control
SaturationControl	1...128	Saturation Control
LightFrequency	0, 1	0→50 Hz, 1→60 Hz
Mirror	0...3	Bit0→Horizontal Mirror (0: Disable, 1: Enable) Bit1→Vertical Mirror (0: Disable, 1: Enable)
AntiFlickerEnable	0, 1	0→Anti-Flicker Disable, 1→Anti-Flicker Enable
ConfigReboot	Yes, No	No→Set configuration and no reboot, Yes→Set configuration and reboot

response:
see the 3.3.2 table.

3.4. network

3.4.1. query network information

request:
GET /inetwork.cgi

response:

Name	Value	Description
IPAddress	An IP address	IP address
SubnetMask	An IP address	subnet mask
DefaultGateway	An IP address	default gateway
PrimaryDNSAddress	An IP address	primary DNS server
SecondaryDNSAddress	An IP address	secondary DNS server
DynamicDNS	A string	status of dynamic DNS [Example : Disable]
SecondaryHTTPPort	A string	status of secondary HTTP port [Example : Disable (Port : 81)]
UpnP	A string	status of UPnP [Example : Enable (IP : 2.66.78.51)]

3.4.2. get network configuration

request:
    GET /network.cgi

response::

Name	Value	Description
IPAddressMode	1, 4, 5	1→Fixed IP, 4→DHCP, 5→PPPoE
IPAddress	An IP address	IP address
SubnetMask	An IP address	subnet mask
DefaultGateway	An IP address	default gateway
PPPoEUserID	A string	PPPoE user name (Max Length is 64)
PPPoEPassword	A string	PPPoE password (Max Length is 32)
DNSIPAddress1	An IP address	primary DNS server
DNSIPAddress2	An IP address	Secondary DNS server
DDNSEnable	0, 1	0→Disable, 1→Enable
DDNSProvider	A string	see Table 2:dynamic DNS service providers (different support for each OEM model, please reference web page)
DDNSHostName	A string	ddns host name (Max Length is 64)
DDNSUserName	A string	ddns user name (Max Length is 64)
DDNSPassword	A string	ddns password (Max Length is 32)
SecondHTTPPortEnable	0,3	0→Disable, 3→Enable
SecondHTTPPort	1… 65535	TCP port number for HTTP
UPnPEnable	0,1	0→Disable, 1→Enable

3.4.3. set network configuration

request:
    GET/POST /network.cgi

parameters:

Name	Value	Description
IPAddressMode	1, 4, 5	1→ Fixed IP, 4→DHCP, 5→PPPoE
IPAddress	An IP address	IP address
SubnetMask	An IP address	subnet mask
DefaultGateway	An IP address	default gateway
PPPoEUserID	A string	PPPoE user name (Max Length is 64)
PPPoEPassword	A string	PPPoE password (Max Length is 32)
DNSIPAddress1	An IP address	primary DNS server
DNSIPAddress2	An IP address	secondary DNS server
DDNSEnable	0, 1	0→Disable, 1→Enable
DDNSProvider	A string	see Table 2:dynamic DNS service providers (different support for each OEM model, please reference web page)
DDNSHostName	A string	ddns host name (Max Length is 64)
DDNSUserName	A string	ddns user name (Max Length is 64)
DDNSPassword	A string	ddns password (Max Length is 32)
SecondHTTPPortEnable	0,3	0→Disable, 3→Enable
SecondHTTPPort	1… 65535	TCP port number for HTTP
UPnPEnable	0,1	0→Disable, 1→Enable
ConfigReboot	Yes, No	No→Set configuration and no reboot, Yes→Set configuration and reboot

response:
    see the 3.4.2 table.

3.4.4. query wireless information

request:
    GET /iwireless.cgi

response:

Name	Value	Description
ConnectionMode	Infrastructure, Adhoc	wireless connect mode
WirelessLink	No, Yes, Disable	Wireless link status
SSID	A string	Attached AP name and MAC address [Example : DI-624 (MAC : 00 0F 3D 3D 90 0E)]
WirelessChannel	1..14	Wireless using channel
TransmissionRate	Fully Automatic, 1, 2, 5.5, 11, 6, 9, 12, 18, 24, 36, 48, 54 M bps	wireless using tramitssion rate
WEPEncryption	WEP, WPA-PSK, WPA-PSK / WPA2-PSK, WPA-PSK (TKIP), WPA-PSK (AES) , WPA2-PSK (TKIP) , WPA2-PSK (AES), Disable, Enable	If WPA supported→WEP, WPA-PSK, WPA-PSK / WPA2-PSK, WPA-PSK (TKIP), WPA-PSK (AES), WPA2-PSK (TKIP), WPA2-PSK (AES) If WPA not supported→Disable, Enable

3.4.5. get wireless configuration

request:
    GET /wireless.cgi

response:

Name	Value	Description
ConnectionMode	0, 1	0→Infrastructure, 1→Ad-Hoc
SSID	A string	ESSID (Max Length is 32)
WirelessChannel	1..14	Wireless selected channel
TransmissionRate	Fully Automatic, 1 Mb, 2 Mb, 5.5 Mb, 11 Mb, 6 Mb, 9 Mb, 12 Mb, 18 Mb, 24 Mb, 36 Mb, 48 Mb, 54 Mb	wireless selected tramitssion rate
WEPEncryption	0, 2, 3, 4	0→ Disable, 2→64 bits, 3→128 bits, 4→WPA-PSK / WPA2-PSK
WEPKeyFormat	0, 1	0→ASCII, 1→HEX
Key1	A string	When WEPKeyFormat is ASCII, Length is 5 or 13 When WEPKeyFormat is HEX, Length is 10 or 26
Key2	A string	see the above
Key3	A string	see the above
Key4	A string	see the above
TxKey	Key 1, Key 2, Key 3, Key 4	Selected using key
BeaconInterval	1…65535	Beacon Interval
Preamble	0, 1	0→Long, 1→Short
AuthenticationType	0, 1, 2	0→Open System, 1→Shared Key, 2→Both
PreSharedKey	8…63 ASCII or 64 HEX characters	Pre-Shared Key for WPA-PSK / WPA2-PSK

3.4.6. set wireless configuration

request:
    GET/POST /wireless.cgi

parameters:

Name	Value	Description
ConnectionMode	0, 1	0→Infrastructure, 1→Ad-Hoc
SSID	A string	ESSID (Max Length is 32)
WirelessChannel	1..14	Wireless selected channel

TransmissionRate	Fully Automatic, 1 Mb, 2 Mb, 5.5 Mb, 11 Mb, 6 Mb, 9 Mb, 12 Mb, 18 Mb, 24 Mb, 36 Mb, 48 Mb, 54 Mb	wireless selected tramitssion rate
WEPEncryption	0, 2, 3, 4	0→ Disable, 2→64 bits, 3→128 bits, 4→WPA-PSK / WPA2-PSK
WEPKeyFormat	0, 1	0→ASCII, 1→HEX
Key1	A string	WEPKeyFormat→ASCII, Length is 5(64 bits) or 13(128b its) WEPKeyFormat→HEX, Length is 10(64 bits) or 26(128 bits)
Key2	A string	see the above
Key3	A string	see the above
Key4	A string	see the above
TxKey	Key 1, Key 2, Key 3, Key 4	Selected using key
BeaconInterval	1…65535	Beacon Interval
Preamble	0, 1	0→Long, 1→Short
AuthenticationType	0, 1, 2	0→Open System, 1→Shared Key, 2→Both
PreSharedKey	8…63 ASCII or 64 HEX characters	Pre-Shared Key for WPA-PSK / WPA2-PSK
ConfigReboot	Yes, No	No→Set configuration and no reboot, Yes→Set configuration and reboot

response:
    see the 3.4.5 table.

3.5. event handling

3.5.1. get FTP upload configuration

request:
    GET /upload.cgi

response:

Name	Value	Description
FTPHostAddress	A host or IP address	FTP server host name or IP address (Max Length is 64)
FTPPortNumber	1 ... 65535	FTP server port number
FTPUserName	A string	FTP login user name (Max Length is 32)
FTPPassword	A string	FTP login password (Max Length is 32)
FTPDirectoryPath	A string	FTP initial path (Max Length is 64)
FTPPassiveMode	0, 1	0→No, 1→Yes
FTPScheduleEnable	0, 1	0→Disable, 1→Enable
FTPScheduleMode	0, 1	0→Always, 1→ Schedule
FTPScheduleDay	#	Bit0→Sun (0: Disable, 1: Enable), Bit1→Mon (0: Disable, 1: Enable), Bit2→Tue (0: Disable, 1: Enable), Bit3→Wed (0: Disable, 1: Enable), Bit4→Thu (0: Disable, 1: Enable), Bit5→Fri (0: Disable, 1: Enable), Bit6→Sat (0: Disable, 1: Enable)
FTPScheduleTimeStart	A time	hh:mm:ss (Example : 06:12:35)
FTPScheduleTimeStop	A time	hh:mm:ss (Example : 18:12:35)
FTPScheduleVideoFrequencyMode	0, 1	0→Frames/Second, 1→Seconds/Frame
FTPScheduleFramePerSecond	1, 2, 3, Auto	When FTPScheduleVideoFrequencyMod is Frames/Second.
FTPScheduleSecondPerFrame	1…65535	When FTPScheduleVideoFrequencyMod is Seconds/Frame,
FTPScheduleBaseFileName	A string	Max Length is 32
FTPScheduleFileMode	0, 1, 2	0→Overwrite, 1→Date/Time, 2→Sequence Number
FTPScheduleMaxFileSequenceNumber	1…65535	Max file sequence number
FTPManualEnable	0, 1	0→ Disable, 1→ Enable
FTPManualBaseFileName	A string	Max Length is 32
FTPManualFileMode	0, 1, 2	0→Overwrite, 1→Date/Time, 2→Sequence Number
FTPManualMaxFileSequenceNumber	1…65535	Max file sequence number

3.5.2. set FTP upload configuration

request:
>   GET/POST /upload.cgi

parameters:

Name	Value	Description
FTPHostAddress	A host or IP address	FTP server host name or IP address (Max Length is 64)
FTPPortNumber	1 ... 65535	FTP server port number
FTPUserName	A string	FTP login user name (Max Length is 32)
FTPPassword	A string	FTP login password (Max Length is 32)
FTPDirectoryPath	A string	FTP initial path (Max Length is 64)
FTPPassiveMode	0, 1	0→No, 1→Yes
FTPScheduleEnable	0, 1	0→Disable, 1→Enable
FTPScheduleMode	0, 1	0→Always, 1→ Schedule
FTPScheduleDay	#	Bit0→Sun (0: Disable, 1: Enable), Bit1→Mon (0: Disable, 1: Enable), Bit2→Tue (0: Disable, 1: Enable), Bit3→Wed (0: Disable, 1: Enable), Bit4→Thu (0: Disable, 1: Enable), Bit5→Fri (0: Disable, 1: Enable), Bit6→Sat (0: Disable, 1: Enable)
FTPScheduleTimeStart	A time	hh:mm:ss (Example : 06:12:35)
FTPScheduleTimeStop	A time	hh:mm:ss (Example : 18:12:35)
FTPScheduleVideoFrequencyMode	0, 1	0→Frames/Second, 1→Seconds/Frame
FTPScheduleFramePerSecond	1, 2, 3, Auto	When FTPScheduleVideoFrequencyMod is Frames/Second.
FTPScheduleSecondPerFrame	1…65535	When FTPScheduleVideoFrequencyMod is Seconds/Frame,
FTPScheduleBaseFileName	A string	Max Length is 32
FTPScheduleFileMode	0, 1, 2	0→Overwrite, 1→Date/Time, 2→Sequence Number
FTPScheduleMaxFileSequenceNumber	1…65535	Max file sequence number
FTPManualEnable	0, 1	0→ Disable, 1→ Enable
FTPManualBaseFileName	A string	Max Length is 32
FTPManualFileMode	0, 1, 2	0→Overwrite, 1→Date/Time, 2→Sequence Number
FTPManualMaxFileSequenceNumber	1…65535	Max file sequence number
ConfigReboot	Yes, No	No→Set configuration and no reboot, Yes→Set configuration and reboot

response:
    see the 3.5.1 table.

3.5.3. get e-mail configuration

request:
    GET /email.cgi

response:

Name	Value	Description
EmailSMTPServerAddress	A host or IP address	SMTP Server Address (Max Length is 64)
EmailSenderAddress	A host or IP address	Sender E-mail Address (Max Length is 64)
EmailReceiverAddress	A host or IP address	Receiver E-mail Address (Max Length is 64)
EmailUserName	A string	User Name (Max Length is 64)
EmailPassword	A string	User Password (Max Length is 32)
EmailScheduleEnable	0, 1	0→ Disable, 1→ Enable
EmailScheduleMode	0, 1	0→Always, 1→ Schedule
EmailScheduleDay	#	Bit0→Sun (0: Disable, 1: Enable), Bit1→Mon (0: Disable, 1: Enable), Bit2→Tue (0: Disable, 1: Enable), Bit3→Wed (0: Disable, 1: Enable), Bit4→Thu (0: Disable, 1: Enable), Bit5→Fri (0: Disable, 1: Enable), Bit6→Sat (0: Disable, 1: Enable)
EmailScheduleTimeStart	A time	hh:mm:ss (Example : 06:12:35)
EmailScheduleTimeStop	A time	hh:mm:ss (Example : 18:12:35)
EmailScheduleInterval	1…65535	seconds
EmailManualEnable	0, 1	0→ Disable, 1→ Enable
EmailManualInterval	1…65535	seconds

3.5.4. set e-mail configuration

request:
GET/POST /email.cgi

parameters:

Name	Value	Description
EmailSMTPServerAddress	A host or IP address	SMTP Server Address (Max Length is 64)
EmailSenderAddress	A host or IP address	Sender E-mail Address (Max Length is 64)
EmailReceiverAddress	A host or IP address	Receiver E-mail Address (Max Length is 64)
EmailUserName	A string	User Name (Max Length is 64)
EmailPassword	A string	User Password (Max Length is 32)
EmailScheduleEnable	0, 1	0→ Disable, 1→ Enable
EmailScheduleMode	0, 1	0→Always, 1→ Schedule
EmailScheduleDay	#	Bit0→Sun (0: Disable, 1: Enable), Bit1→Mon (0: Disable, 1: Enable), Bit2→Tue (0: Disable, 1: Enable), Bit3→Wed (0: Disable, 1: Enable), Bit4→Thu (0: Disable, 1: Enable), Bit5→Fri (0: Disable, 1: Enable), Bit6→Sat (0: Disable, 1: Enable)
EmailScheduleTimeStart	A time	hh:mm:ss (Example : 06:12:35)
EmailScheduleTimeStop	A time	hh:mm:ss (Example : 18:12:35)
EmailScheduleInterval	1…65535	seconds
EmailManualEnable	0, 1	0→ Disable, 1→ Enable
EmailManualInterval	1…65535	seconds
ConfigReboot	Yes, No	No→Set configuration and no reboot, Yes→Set configuration and reboot

response:
see the 3.5.3 table.

3.6. system tools

3.6.1. restart the camera

request:
    GET/POST /reset.cgi

parameters:

    Reset=Yes

response:

  No response. (204 No Content)

3.6.2. reset all configurations to the factory default

request:
    GET/POST /reset.cgi

parameters:

    FactoryReset=Yes

response:

  No response. (204 No Content)

4. Streaming

4.1. JPEG Image

4.1.1. get a JPEG image

Returns a JPEG image with the default resolution and compression as defined in the configuration.

request:
    GET /image.jpg

response:
```
HTTP/1.0 200 OK<CRLF>
…
…
Content-Length: <image size><CRLF>
Content-Type: image/jpeg<CRLF>
<CRLF>
<JPEG image data><CRLF><CRLF>
```

4.1.2. get motion JPEG image stream

Returns a multipart image stream with the default resolution and compression as defined in the configuration. The content type is "multipart/x-mixed-replace" and each image ends with a boundary string <boundary>.

request:
    GET /mjpeg.cgi

response:
```
HTTP/1.0 200 OK<CRLF>
…
…
```
Content-Type: multipart/x-mixed-replace;boundary=--video boundary--`<CRLF>`
`<CRLF>`
--video boundary--`<CRLF>`
Content-Length: `<image size><CRLF>`
Date: yyyy-mm-dd hh:mm:ss IO_xxxxxxxx_PT_ppp_ttt`<CRLF>`
Content-Type: image/jpeg`<CRLF>`
`<CRLF>`
`<JPEG image data><CRLF><CRLF>`
--video boundary--`<CRLF>`
Content-Length: `<image size><CRLF>`
Date: yyyy-mm-dd hh:mm:ss IO_xxxxxxxx_PT_ppp_ttt`<CRLF>`
Content-Type: image/jpeg`<CRLF>`
`<CRLF>`
`<JPEG image data><CRLF><CRLF>`
…
…
…

parameters:

Name	Value	Description
yyyy-mm-dd	A date	Date of `<JPEG image data> got.`
hh:mm:ss	A time	Time of `<JPEG image data> got.`
IO_xxxxxxxx_PT_ppp_ttt	xxxxxxxx	each x value may 0 (Off), 1 (On) 1st is Trigger1, 2nd is Trigger2, 3rd is Image Upload, 4th is Image Email,

		5th… 8th Reserved
	ppp - Pan Location	000…340
	ttt - Tilt Locatopn	000…135

5. Camera Control

5.1. Remote control

5.1.1. get Trigger/FTP upload/E-mail image status

request:
> GET /iocontrol.cgi

```
response:
```
> Trigger1= <value>&Trigger2= <value>&ImageUpload= <value>&ImageEmail= <value>&CurrentTime= <value>

parameters:

Name	Value	Description
Trigger1	0, 1	0→Off, 1→On
Trigger2	0, 1	0→Off, 1→On
ImageUpload	0, 1	0→Off, 1→On
ImageEmail	0, 1	0→Off, 1→On
CurrentTime	A date/time string	(Example : 2008-10-01 15:37:53)

5.1.2. control I/O trigger

request:
> POST /iocontrol.cgi

parameters:

Name	Value	Description
Trigger1	0, 1	0→Off, 1→On
Trigger2	0, 1	0→Off, 1→On

response:
> No response. (204 No Content)

5.1.3. control FTP upload

request:
> POST /iocontrol.cgi

parameters:

Name	Value	Description
ImageUpload	0, 1	0→Off, 1→On

response:
> No response. (204 No Content)

5.1.4. control e-mail

request:
> POST /iocontrol.cgi

parameters:

Name	Value	Description
ImageEmail	0, 1	0→Off, 1→On

response:
> No response. (204 No Content)

5.1.5. PanTilt Single Move

request:
POST /pantiltcontrol.cgi

parameters:

Name	Value	Description
PanSingleMoveDegree	1…10	pan movement degree in a step
TiltSingleMoveDegree	1…10	tilt movement degree in a step
PanTiltSingleMove	0…8	0➔Reserved 1➔Up 2➔Reserved 3➔Left 4➔Home 5➔Right 6➔Reserved 7➔Down 8➔Reserved

response:
No response. (204 No Content)

5.1.6. PanTilt Preset Position Move

request:
POST /pantiltcontrol.cgi

parameters:

Name	Value	Description
PanTiltPresetPositionMove	0…24	0➔Home Position 1➔Preset 1 Position 2➔Preset 2 Position ... ... 24➔Preset 24 Position

response:
No response. (204 No Content)

5.1.7. PanTilt Set Preset Position

request:
POST /pantiltcontrol.cgi

parameters:

Name	Value	Description
PanTiltHorizontal	0…340	Horizontal position
PanTiltVertical	0…135	Vertical position
SetPosition	0…24	0➔Home Position (Can't modify) 1➔Preset 1 Position 2➔Preset 2 Position ... ... 24➔Preset 24 Position
SetName	A string	(max length=12 chars)

response:
No response. (204 No Content)

5.1.8. PanTilt Clear Preset Position

request:
    POST /pantiltcontrol.cgi

parameters:

Name	Value	Description
ClearPosition	0…24	0➔Home Position (Can't modify) 1➔Preset 1 Position 2➔Preset 2 Position … … 24➔Preset 24 Position

response:
    No response. (204 No Content)

5.1.9. PanTilt Swing Mode

request:
    POST /pantiltcontrol.cgi

parameters:

Name	Value	Description
PanTiltSwingMode	0, 1, 2	0➔Disable 1➔Reserved 2➔Preset Position Swing

response:
    No response. (204 No Content)

5.1.10.　　PanTilt Move Position

request:
    POST /pantiltcontrol.cgi

parameters:

Name	Value	Description
PanTiltHorizontal	0…340	Horizontal position
PanTiltVertical	0…135	Vertical position
PanTiltPositionMove	true	Move to position

response:
    No response. (204 No Content)

5.1.11.　　output com port

request:
    POST /comport.cgi

response:

Name	Value	Description
ComOut	data.	Output data
ComSend	Yes	Set com port to send data

response:

  No response. (204 No Content)

6. Appendix

Table 1: TimeZoneIndex

ID	Time zone
0	Unused timezone table
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) Arizona
8	(GMT-07:00) Chihuahua, La Paz, Mazatlan
9	(GMT-07:00) Mountain Time (US & Canada)
10	(GMT-06:00) Central America
11	(GMT-06:00) Central Time (US & Canada)
12	(GMT-06:00) Guadalajara, Mexico City, Monterrey
13	(GMT-06:00) Saskatchewan
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-04:30) Caracas
18	(GMT-04:00) Atlantic Time (Canada)
19	(GMT-04:00) La Paz
20	(GMT-04:00) Manaus
21	(GMT-04:00) Santiago
22	(GMT-03:30) Newfoundland
23	(GMT-03:00) Brasilia
24	(GMT-03:00) Buenos Aires, Georgetown
25	(GMT-03:00) Greenland
26	(GMT-03:00) Montevideo
27	(GMT-02:00) Mid-Atlantic
28	(GMT-01:00) Azores
29	(GMT-01:00) Cape Verde Is.
30	(GMT) Casablanca, Monrovia, Reykjavik
31	(GMT) Greenwich Mean Time : Dublin, Edinburgh, Lisbon, London
32	(GMT+01:00) Amsterdam, Berlin, Bern, Rome, Stockholm, Vienna
33	(GMT+01:00) Belgrade, Bratislava, Budapest, Ljubljana, Prague
34	(GMT+01:00) Brussels, Copenhagen, Madrid, Paris
35	(GMT+01:00) Sarajevo, Skopje, Warsaw, Zagreb
36	(GMT+01:00) West Central Africa
37	(GMT+02:00) Amman
38	(GMT+02:00) Athens, Bucharest, Istanbul
39	(GMT+02:00) Beirut
40	(GMT+02:00) Cairo
41	(GMT+02:00) Harare, Pretoria
42	(GMT+02:00) Helsinki, Kyiv, Riga, Sofia, Tallinn, Vilnius
43	(GMT+02:00) Jerusalem
44	(GMT+02:00) Minsk
45	(GMT+02:00) Windhoek

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

Table 2: dynamic DNS service providers

ID	provider URIs
www.dlinkddns.com	members.dyndns.org
WWW.ORAY.NET	NEWPH002.ORAY.NET
corede.net	Corede.net
www.DynDNS.org(Custom)	members.dyndns.org
www.DynDNS.org(Free)	members.dyndns.org
DynDNS.org(Custom)	members.dyndns.org
DynDNS.org(Free)	members.dyndns.org
DynDNS	members.dyndns.org
Cn99	www.3322.org

DyNS	www.dyns.cx
TZO.com	cgi.tzo.com
dhs.org	members.dhs.org
Ivy Network	dp-21.net
@Net DDNS	atddns.hs.home.ne.jp
Sharella	ns.sharella.com
51Wireless	ns.ca.51wireless.com
PLANEX CyberGate	ddns.cybergate.planex.co.jp
Address.net	www.address.net