

Supported CGI Commands

CE Mini v1.4

Technical Note

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1. Introduction

1.1. About This Document

This document defines the CGI commands supported by the CE Mini (Full HD HEVC/H.264 Real-time Encoder System Module).

1.2. Introduction

The CE Mini is a small, lightweight, low power video processing engine featuring HEVC and H.264 encoding features. It allows users to capture live video up to 4K/UHD resolution from either 12G-SDI or HDMI 2.0 as an input source. CE Mini adopts Ambarella's H2 processor to encode the video content and then transmit it to the end users or content delivery networks by either selecting Ethernet or wireless network (using USB network access "dongles") as a transmitting interface. CE Mini can create multiple output streams from a single video input and encode it individually using different codecs with different parameters.

The CE Mini offers a user friendly interface across HTTP, and can be remotely controlled using a CGI-style API as defined in this document. The software package also implements the streaming protocols used by most of the CDNs, making it straightforward for user to upload the video content to the network.

1.3. Features

- 4Kp60 audio/video capture (1 x 12G inputs or HDMI 2.0 input)
- Real time 4K HEVC Main8/10 encode up to 60fps
- Real time 4K H.264 8 bit encode up to 60fps
- Streaming output via Gigabit Ethernet or USB
- Auxiliary HDMI 1.4 output for local console
- Light weight, small size & low power consumption (under 15W)
- Easy to use API

2. Set/Inquiry CGI Commands

2.1. Set Command

The **Set** command is used for changing configuration of the module. When using these commands, the syntax is as described below. It is possible to transmit several parameters at one time to the same CGI name (The part of <cgi> of Syntax). In this case, it is necessary to insert "&" between each <parameter>=<value>.

Method

GET/POST

Syntax

```
http://<CEMINI-ip-address>/command/<cgi>?<parameter>=<value>[&<parameter>=<value>...]
```

or

```
http://<CEMINI-ip-address>/command/<cgi>?<parameter>=<value1,value2,..., valueN>
```

Parameters

Refer to Section 3, "CGI Commands" for details.

NOTE: Angle brackets in the table in the "3. CGI Commands", "<" and ">", mean that a string between one pair of angle brackets is just a symbol for numbers, but not parameter name itself. For example, if a parameter name is described as SampleParam<n>, for actual usage, SampleParam1, SampleParam2, ... are valid expressions.

2.2. Inquiry Command

The **Inquiry** command is used for getting current status of the module. Any item with "INQ" in the supported parameter list (See Section 3) can be inquired as to its current status. As a "response format", "standard format" and "JS parameter format" can be selected by using a slightly different syntax as described below.

Syntax

```
http://<CEMINI-ip-address>/command/inquiry.cgi?inqjs=<Inquiry>[&inqjs=<Inquiry>...]
```

The response is as follows in the case of "JS parameter format".

```
HTTP/1.0 200 OK\r\n
Content-Type: text/plain\r\n
Content-Length: <len>\r\n
\r\n
var <parameter>="<value>"\r\n
var <parameter>="<value>"\r\n
var <parameter>="<value>"\r\n
:
:
:
```

3. CGI Commands

In this chapter, the default value of the parameter is highlighted for your reference.

3.1. System

SetCGI : command/video.cgi?Parameter=Value

InqParam : command/inquiry.cgi?inqjs=system

Examples:

```
http://<CEMINI-ip-address>/command/system.cgi?NtpEnable=on&NtpAuto=off&TimeZone
http://<CEMINI-ip-address>/command/inquiry.cgi?inqjs=system
```

Parameter	Set/Inq	Value	Description
Model Name	Inq	CE MINI	Return the model name of the module.
Serial Number	Inq	1234567890	Return the serial number of the module.
Software Version	Inq	1.4.23b19041	Return the software version.

3.2. Video Encoding

SetCGI : command/video.cgi?Parameter=Value

InqParam : command/inquiry.cgi?inqjs=video

Examples:

```
http://<CEMINI-ip-address>/command/video.cgi?ImageCodec1=h265&FrameRate=30&.....
http://<CEMINI-ip-address>/command/inquiry.cgi?inqjs=video
```

Parameter	Set/Inq	Value	Description
ImageCodec1	Set/Inq	h265 h264	Set the video codec of stream1. h265: H.265 (default value for ImageCodec1) h264: H.264 <i>Note: ImageCodec1 does not support "off"</i>
ImageCodec<n> (n:1,2)	Set/Inq	h265 h264 off	Set the video codec of stream<n>. h265: H.265 h264: H.264 off: disable (default value for ImageCodec2)

Parameter	Set/Inq	Value	Description
ImageSize <n> (n:1,2)	Set/Inq	352,288 640,480 720,480 720,576 1280,720 1920,1080 3840,2160	Set image size of the encoded video stream corresponding to the ImageCodec<n>. The input will be scaled to meet the required output size before encoding. Image size expressed as <Value1,Value2>: Value1 is horizontal pixel, Value2 is vertical pixel of the output image. (stream 1 default is 3840x2160)
FrameRate <n> (n:1,2)	Set/Inq	-1,1	1 : Frame rate is the same as the input source -1 : Frame rate is half of input source
IFrameInterval <n> (n:1,2)	Set/Inq	X,Y,Z	X: M Y: N, N=0 will be infinite N, the I pic period, or GOP length. It will be an integer. Z: IDR_INTERVAL e.g. idr_interval = 3, and N = 60, then you will see an IDR, followed by an I pic (60 pics later), followed by another I pic (60 pics later), followed by an IDR.
CBR <n> (n:1,2)	Set/Inq	On off	Enables or disables the CBR function of ImageCodec<n>. on: enable (default) off: disable, means VBR is used
BitRate <n> (n:1,2)	Set/Inq	64 to 64000	Set the target bit rate of ImageCodec<n> in kbps. This parameter is effective only when CBR<n> is set to 'on'. 8000: 8Mbps (stream1 default) 3000: 3Mbps (stream2 default)
H264Profile <n> (n:1,2)	Set/Inq	high low baseline	Set the profile of H.264 for ImageCodec<n>. This parameter is effective only when ImageCodec<n> is set to 'h264'. high: High profile (default) low: Main profile baseline: Baseline profile

3.3. Audio Encoding

SetCGI : command/av_input.cgi?Parameter=Value

InqParam : command/inquiry.cgi?inqjs=av_input

Examples:

```
http://<CEMINI-ip-address>/command/av_input.cgi? AudCodec1=aac_lc&.....
http://<CEMINI-ip-address>/command/av_input.cgi? AudSrcStereo=1&AudBitRate1=64000&
http://<CEMINI-ip-address>/command/inquiry.cgi?inqjs=av_input
```

Parameter	Set/Inq	Value	Description
AudCodec <n> (n:1,2,3)	Set/Inq	aac_lc aac_he aac_hev2 ac3 mp2	Set the codec of audio for AudCodec<n>. Note: The codec1 only supports aac_lc and aac_he and aac_hev2
AudSrcStereo <n> (n:1,2,3)	Set/Inq	1 2 3 4	Select the stereo of audio source for encoding. 1 : channel 1 & 2 2 : channel 3 & 4 3 : channel 5 & 6 4 : channel 7 & 8
AudBitRate <n> (n:1,2,3)	Set/Inq	16000 24000 28000 32000 40000 48000 56000 64000 80000 96000 112000 128000 144000 160000 180000 192000 200000 220000 224000 240000 256000 260000 280000 300000 320000 384000	Set the sample rate of audio for encoding. aac_lc : 32000 ~ 160000 aac_he : 28000 ~ 128000 aac_hev2 : 16000 ~ 64000 ac3 : 16000 ~ 320000 mp2 : 32000, 48000, 56000, 64000, 80000, 96000, 112000, 128000, 160000, 192000, 224000, 256000, 320000, 384000

3.4. Audio and Video Input

SetCGI : command/av_input.cgi?Parameter=Value

InqParam : command/inquiry.cgi?inqjs=av_input

Examples:

```
http://<CEMINI-ip-address>/command/av_input.cgi?VideoInput=sdi&EncIdx=1&AncEnable=on&...
http://<CEMINI-ip-address>/command/av_input.cgi? AudSampleRate1=44100&
http://<CEMINI-ip-address>/command/inquiry.cgi?inqjs=av_input
```

Parameter	Set/Inq	Value	Description
VideoInput	Set/Inq	sdi hdmi	Set the active video source for the encoder ⁽¹⁾ . hdmi : hdmi sdi : sdi
AncEnable <n> (n:1)	Set/Inq	on off	Enable or disable ancillary data. EncIdx=1 parameter must be added
AncDID1 <n> (n:1)	Set/Inq		Set did to get the data you need. EncIdx=1 must be added. Set did=353 and sdid=257 will get CC data
AncSDID1 <n> (n:1)	Set/Inq		Set sdid to get the data you need. EncIdx=1 parameter must be added. Set did=353 and sdid=257 will get CC data
force_i2p	Set/Inq	0 1 2	Enable or disable de-interlace. re_pipeline=on must be added. 0 : off 1 : Enable, full frames mode 2 : Enable, half frames mode
AudSampleRate1	Set/Inq	32000 44100 48000	Set the sample rate of audio. Only AudIn=external is valid. 32000: 32 KHz 44100: 44.1 KHz 48000: 48 KHz
AudIn	Set/Inq	internal external	Set the active audio source for the encoder. internal : HDMI/SDI external : mic/line
MicLineSelect	Set/Inq	mic line	Set the input of audio source. mic: microphone line: line-in

Note 1: If User plugs in both SDI and HDMI, the parameter of Video Input can be selected between both active inputs (SDI input will be selected as default)

If User plugs in only SDI or HDMI, CE Mini will select the active Video Input automatically.

3.5. Video Input Status

InqParam : command/inquiry.cgi?inqjs=video_input_status

Example:

```
http://<CEMINI-ip-address>/command/inquiry.cgi?inqjs=video_input_status
```

Parameter	Set/Inq	Value	Description
VideoInputStatus	Inq	NoSignal SDI HDMI Both	Return the status of the video input. NoSignal : no input HDMI : hdmi SDI : SDI Both : HDMI + SDI
VideoInputPreference	Inq	SDI HDMI	Return to preference SDI or HDMI.
VideoInputActive	Inq	SDI HDMI	Return to Active SDI or HDMI.
Input	Inq		Return the resolution and fps of the video input.
VideoDetect	Inq	0 1	Return the video is detected or not. 0 : not 1 : detect
FrameWidth	Inq		Return the video width.
FrameHeight	Inq		Return the video height.
FrameInterval	Inq		Return the video Interval.
Interlaced	Inq	0 1	Return video interlace or not.
psf_detected	Inq	0 1	Return the video PSF or not.
PayloadID_Byte1	Inq		Return the video payload id.
Transfer_Characteristics	Inq		Return the video transfer characteristics.
link_type	Inq	Single Quad None	Return the video link type.
method_type	Inq	SQD 2SI None	Return the video method.
level	Inq	A B None	Return the video level.
NumAudioCHs	Inq	4 8	Return total audio channel.
AudioSampleRate	Inq	32000 44100 48000	Return the audio sample rate.

3.6. Network

3.6.1. Status

InqParam : command/inquiry.cgi?inqjs=network

Example:

```
http://<CEMINI-ip-address>/command/inquiry.cgi?inqjs=network
```

Parameter	Set/Inq	Value	Description
MacAddress	Inq	0 to 17 characters	Return the MAC Address of the CE Mini.
PhyStat	Inq	10half 10full 100half 100full	Return the transmission status of the Ethernet. 10half : 10Mbps, Half duplex 10full : 10Mbps, Full duplex 100half : 100Mbps, Half duplex 100full : 100Mbps, Full duplex
PhyMdi	Inq	AutoMDI MDI-x	Return the status of MDI type.
CurrentIP	Inq	IPv4 address	Shows the current IPv4 address of the CE Mini. When DHCP is 'off', the value of IP is applied.
CurrentSubnetmask	Inq	IPv4 address	Shows the current IPv4 subnet mask. When DHCP is 'off', the value of Subnet mask is applied.
CurrentGateway	Inq	IPv4 address	Shows the current IPv4 address of the default gateway. Note: When DHCP is 'off', the value of Gateway is applied.
CurrentPrimaryDns	Inq	IPv4 address	Shows the current IP address of the primary DNS server.
CurrentSecondaryDns	Inq	IPv4 address	Shows the current IP address of the secondary DNS server.

3.6.2. IPv4 Setting

SetCGI : command/network.cgi?Parameter=Value

InqParam : command/inquiry.cgi?inqjs=network

Examples:

```
http://<CEMINI-ip-address>/command/network.cgi?Dhcp=off&Ip=192.168.0.100&Subnetmask=255.255.255.0&Gateway=.....
http://<CEMINI-ip-address>/command/inquiry.cgi?inqjs=network
```

Parameter	Set/Inq	Value	Description
Dhcp	Set/Inq	on off	Enable or disable DHCP function. on : enable off : disable When DHCP is disabled, the values of IP, Subnet mask and Gateway should be required at the same time like: <code>\command/network.cgi?Dhcp=off&Ip=192.168.0.100&Subnetmask=255.255.255.0&Gateway= \.</code>
Ip	Set/Inq	IPv4 address	Set the static IPv4 address of the CE Mini.
Subnetmask	Set/Inq	IPv4 subnet mask	Set the static IPv4 subnet mask of the CE Mini.
Gateway	Set/Inq	IPv4 address of default Gateway	Set the static IPv4 address of the default Gateway.
DomainSuffix	Set Inq	0 to 127 characters	Set the domain suffix.
HostName	Set Inq	0 to 63 characters	Set the host name.
DnsAuto	Set/Inq	on off	Enable or disable DNS service.
PrimaryDns	Set	IPv4 address	Set the current IP address of the primary DNS server.
SecondaryDns	Set	IPv4 address	Set the current IP address of the secondary DNS server.

3.7. Record

SetCGI : command/record.cgi?Parameter=Value

InqParam : command/inquiry.cgi?inqjs=video

Examples:

```
http://<CEMINI-ip-address>/command/record.cgi?Recording=2&RecordingPath=/media/sda1
http://<CEMINI-ip-address>/command/inquiry.cgi?inqjs=video
http://<CEMINI-ip-address>/command/inquiry.cgi?inqjs=storage_status
```

Parameter	Set/Inq	Value	Description
Recording	Set/Inq	0 1 2 3	Set the record channels. 0 : stop to record 1: record ch1 2: record ch2 3: record ch1 & ch2
RecordingPath	Set/Inq	get from storage_status inquiry command	Set recording path. ex: /media/sda1 or /media/sdb1
FileSize	Set	100M to 4000M	Set the file size for recording. Default file size is 2G. ex1: 100M to 4000M ex2: 100 to 4000 ex3: 1G, 2G, 3G, 4G
SnapshotPath	Set/Inq	get from storage_status inquiry command	Set snapshot path. ex: /media/sda1 or /media/sdb1
storage_status	Inq		[{"Filesystem": "/dev/sda1", "Size": "1.9G", "Used": "892.8M", "Available": "1014.2M", "Use%": "47%", "MountedOn": "/media/sda1"}]

3.8. Stream Protocol

SetCGI : command/stream.cgi?Parameter=Value

InqParam : command/inquiry.cgi?inqjs=stream

Examples:

```
http://<CEMINI-ip-address>/command/stream.cgi?Channel2Protocol1=TSoverIP&Channel2TS
protocol1=udp&Channel2TSclientIP1=172.17.14.8&Channel2TSclientPort1=1500
http://<CEMINI-ip-address>/command/stream.cgi?Channel1Protocol1=HLS&Channel1HLSduration=5
http://<CEMINI-ip-address>/command/stream.cgi?Channel1Protocol3=RTMP&Channel1RTMPurl3=
rtmp://a.rtmp.youtube.com/live2&Channel1RTMPkey3=7r4b-vxuv-j3uz-c9wq
http://<CEMINI-ip-address>/command/inquiry.cgi?inqjs=stream
```

Parameter	Set/Inq	Value	Description
Channel<x>Protocol<y> x: 1;2(channel) y: 1;2(protocol)	Set/Inq	TSoverIP HLS RTP RTMP SRT ZIXI off	Set stream protocol. TSoverIP : TS over IP HLS : HLS RTP : RTP RTMP : RTMP/RTMPS SRT : SRT ZIXI : ZIXI off : disable stream protocol
Channel<x>TSprotocol<y> x: 1;2(channel) y: 1;2;3(TSprotocol)	Set/Inq	udp tcp	Set TS protocol udp : UDP tcp : TCP
Channel<x>TSclientIP<y> x: 1;2(channel) y: 1;2;3(TSclientIP)	Set/Inq	TSclientIP	Set clientIP of TS. [NOTE 4]
Channel<x>TSclientPort<y> x: 1;2(channel) y: 1;2;3(TSclientPort)	Set/Inq	TSclientPort	Set clientport of TS
Channel<x>TSVideoPid<y> x: 1;2(channel) y: 1;2;3(TSVideoPid)	Set/Inq	Payload id of video	Set video PID of TS. Default is 100.
Channel<x>TSAudioPid<y> x: 1;2(channel) y: 1;2;3(TSAudioPid)	Set/Inq	Payload is of audio	Set audio PID of TS. Default is 101.
Channel<x>TSPcrPid<y> x: 1;2(channel) y: 1;2;3(TSPcrPid)	Set/Inq	Payload is of pcr	Set PCR PID of TS. Default is the same as the video PID.
Channel<x>TSAudioEncId<y> x: 1;2(channel) y: 1;2;3(TSAudioEncId)	Set/Inq	1 2 3	Select the encoder of audio.
Channel<x>RTPclientIP<y> x: 1;2(channel) y: 1;2;3(RTPclientIP)	Set/Inq	TSclientIP	Set clientIP of RTP.

Parameter	Set/Inq	Value	Description
Channel<x>RTPClientPort<y> x: 1;2(channel) y: 1;2;3(RTPClientPort)	Set/Inq	TSCientPort	Set clientport of RTP
Channel<x>RTPVideoPid<y> x: 1;2(channel) y: 1;2;3(RTPVideoPid)	Set/Inq	Payload id of video	Set video PID of RTP. Default is 100.
Channel<x>RTPAudioPid<y> x: 1;2(channel) y: 1;2;3(RTPAudioPid)	Set/Inq	Payload is of audio	Set audio PID of RTP. Default is 101.
Channel<x>RTPPcrPid<y> x: 1;2(channel) y: 1;2;3(RTPPcrPid)	Set/Inq	Payload is of audio	Set PCR PID of RTP. Default is the same as the video PID.
Channel<x>RTPAudioEncId<y> > x: 1;2(channel) y: 1;2;3(RTPAudioEncId)	Set/Inq	1 2 3	Select the encoder of audio.
Channel<x>HLSduration x: 1;2(channel)	Set/Inq	2 to 10	Set the duration of HLS 2: the lowest 10: the highest(default)
Channel<x>HLSsegment x: 1;2(channel)	Set/Inq	mpegt fmp4	Set the segment format of HLS. mpegt: MPEG-2 transport stream fmp4: fragmented MP4
Channel<x>HLSsrvurl x: 1;2(channel)	Set/Inq		Set the URL of video server
Channel<x>HLSuser x: 1;2(channel)	Set/Inq		Set the username for login
Channel<x>HLSpassword x: 1;2(channel)	Set/Inq		Set the password for login
Channel<x>RTMPurl<y> x: 1;2(channel) y: 1;2;3(RTMPurl)	Set/Inq	RTMPurl	Set URL of RTMP
Channel<x>RTMPkey<y> x: 1;2(channel) y: 1;2;3(RTMPkey)	Set/Inq	RTMPkey	Set key of RTMP
Channel<x>SRTMode<y> x: 1;2(channel) y: 1;2;3(SRTMode)	Set/Inq	caller listener	Set the mode of SRT. If listener mode, you need reboot system to do anything.
Channel<x>SRTurl<y> x: 1;2(channel) y: 1;2;3(SRTurl)	Set/Inq	url	Set the URL of SRT. listener: srt://0.0.0.0:<port> caller: srt://<IP>:<port>
Channel<x>SRTtoS<y> x: 1;2(channel) y: 1;2;3(SRTtoS)	Set/Inq	0 to 255	Type of service.
Channel<x>SRTTTL<y> x: 1;2(channel) y: 1;2;3(SRTTTL)	Set/Inq	1 to 255	Time to live.
Channel<x>SRTMTU<y> x: 1;2(channel) y: 1;2;3(SRTMTU)	Set/Inq	228 to 1500	Maximum transmission unit.

Parameter	Set/Inq	Value	Description
Channel<x>SRTLatency<y> x: 1;2(channel) y: 1;2;3(SRTLatency)	Set/Inq	20 to 8000	The round-trip time between encoder and ingest server. The unit is ms.
Channel<x>SRTAudioEncId<y> > x: 1;2(channel) y: 1;2;3(SRTAudioEncId)	Set/Inq	1 2 3	Select the encoder of audio.
Channel<x>SRTEncryption<y> x: 1;2(channel) y: 1;2;3(SRTEncryption)	Set/Inq	none aes128 aes192 aes256	Set the mode of encryption.
Channel<x>SRTBandwidthOverhead<y> x: 1;2(channel) y: 1;2;3(SRTBandwidthOverhead)	Set/Inq	0 to 100	Specify how much bandwidth above the estimate bandwidth the SRT can use when recovering lost packets.
RTSPEnable	Set/Inq	on off	Enable RTSP server or not
RTSPAuthEnable	Set/Inq	on off	Enable RTSP user authentication or not.
RTSPAuthUser	Set/Inq		Set the username for RTSP connection
RTSPAuthPassword	Set/Inq		Set the password for RTSP connection

[NOTE 1] If TS protocol is set to TCP, please execute ffmpeg first and set CGI command.

[NOTE 2] "ClientIP" means the PC IP.

[NOTE 3] Does not support HEVC in flv, only supports H.264.

[NOTE 4] Multicast streaming Address: 224.0.0.0 to 239.255.255.255.

3.8.1. How to play mpeg-ts

Follow these steps:

1. Install ffmpeg under Windows OS
 - a. Download the static version <https://ffmpeg.zeranoe.com/builds/>
 - b. Uncompress and put it in a proper file path.
 - c. Set the system environment path.
2. `ffmpeg -i udp://clientIP:clientport`
`ffmpeg -i tcp://clientIP:clientport?listen`

3.9. NTP Synchronize

InqParam : command/ntp.cgi?ntp_server=172.20.1.100

Examples:

```
http://<CEMINI-ip-address>/command/system.cgi?NtpEnable=off
http://<CEMINI-ip-address>/command/system.cgi?NtpEnable=on&NtpServer=172.0.0.1
```

Parameter	Set/Inq	Value	Description
NtpAuto	Inq		Enable auto-configure NTP server.
NtpServer	Inq		The URL of NTP server.
NtpEnable	Inq	on off	Enable NTP service or not.
TimeZone	Inq	GMT-12 GMT-11 GMT-10 GMT-9 GMT-8 GMT-7 GMT-6 GMT-5 GMT-4 GMT-3 GMT-2 GMT-1 GMT GMT-1 GMT-2 GMT-3 GMT-4 GMT-5 GMT-6 GMT-7 GMT-8 GMT-9 GMT-10 GMT-11 GMT-12	International Date Line Midway Island, Somoa Hawaii Alaska US/Canada Pacific US/Canada Mountain US/Canada Central US/Canada Eastern Santiago Sao Paulo Mid-Atlantic Azores Greenwich Mean Time, London Berlin, Paris Istanbul, Cairo Moscow Dubai, Muscat Yekaterinburg Almaty, Dhaka Bangkok, Vietnam Taipei, Beijing Tokyo, Seoul Sydney, Hobart Magadan Auckland
DateTime	Inq		

4. Appendix

In this chapter, describe some special CGI commands which provide system maintenance.

4.1. Factory Default

SetCGI : command/user.cgi?Parameter=Value

Example:

```
http://<CEMINI-ip-address>/command/user.cgi?FactoryDefault=soft
```

Parameter	Set/Inq	Value	Description
FactoryDefault	Set	hard soft	Reset to factory default settings. hard: reset all soft: reset all but retain network settings

4.2. Backup configuration

SetCGI : command/upload.cgi?Parameter=Value

Example:

```
http://<CEMINI-ip-address>/command/upload.cgi?download=config_backup
```

4.3. Restore configuration

SetCGI : command/upload.cgi?Parameter=Value

SetCGI : command/user.cgi?Parameter=Value

Examples:

```
http://<CEMINI-ip-address>/command/upload.cgi?upload=config_restore  
http://<CEMINI-ip-address>/command/user.cgi?Restore=config&filename=vega2002.cfg
```

4.4. Firmware upgrade

SetCGI : command/upload.cgi?Parameter=Value

SetCGI : command/user.cgi?Parameter=Value

Examples:

```
http://<CEMINI-ip-address>/command/upload.cgi?upload=firmware
http://<CEMINI-ip-
address>/command/user.cgi?Restore=firmware&filename=vega2002_10255.upd.xz
```

4.5. Reboot

SetCGI : command/reboot.cgi

Example:

```
http://<CEMINI-ip-address>/command/reboot.cgi
```

4.6. Debugging information

SetCGI: command/misc.cgi?debug=on

SetCGI: command/misc.cgi?debug=dsp

- command/misc.cgi?debug=on can enable some internal debug information, some log files will be generated after reboot, and user can download log files from Web
- command/misc.cgi?debug=dsp will generate internal DSP log dynamically, user can download it from Web as well

4.7. Web GUI on / off

SetCGI : command/misc.cgi?Parameter=Value

Examples:

```
http://<CEMINI-ip-address>/command/misc.cgi?webgui=on
http://<CEMINI-ip-address>/command/misc.cgi?webgui=off
```

4.8. CPU temperature

InqParam : command/inquiry.cgi?inqjs=cpu_temperature

Example:

```
http://<CEMINI-ip-address>/command/inquiry.cgi?inqjs=cpu_temperature
```