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## **HDIP100E&HDIP100D**

1080P HDMI over IP Encoder & Decoder

### **API Command Set**

Version: V1.0.0

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# Overview

Some API commands are based on Telnet and Http, others are based on multicast or unicast over UDP. This guide only describes the former, most of them are just setting or getting commands.

## Settings for both TX (Encoder) and RX (Decoder)

### 1. IP Address Settings

**Commands:**

<code>gbparam s ip_mode</code>	<i>IPMODE</i>
<code>gbparam s ipaddr</code>	<i>IPADDR</i>
<code>gbparam s netmask</code>	<i>NETMASK</i>

**Description:**

IPMODE	The IP mode. Value is "autoip", "static", or "dhcp". Default value is "autoip".
IPADDR	The IP address, like 169.254.9.9.
NETMASK	The subnet mask, like 255.255.0.0

**Note:**

Reboot the device for the settings above to take effect. You can do this by using the busybox reboot command.

## 2. Parameter update

### Command:

---

```
gbparam s PARAM VALUE
```

---

### Description:

<i>PARAM</i>	The parameter's name
<i>VALUE</i>	The parameter's value

### Note:

The parameter's name and value can only contain characters "0-9", "A-Z", "a-z" and underscore (\_).

## 3. Serial control

### a) Serial parameter setting

#### Command:

---

```
soip2 -S -b RS232-PARAM
```

---

#### Description:

-S	Just means set the parameter
<i>RS232-PARAM</i>	Format: b-dps b            baud rate d            data bits p            parity s            stop bit

**b) Obtain the serial parameter setting**

**Command:**

---

```
soip2 -G
```

---

**Response:**

---

```
baud rate: BAUD-RATE  
data bits: DATA-BITS  
parity type: PARITY  
stop bits: STOP_BITS  
HEX mode: HEX
```

---

**Description:**

---

-G	Just means get the serial parameter
<i>BAUD-RATE</i>	Baud rate
<i>DATA-BITS</i>	Data bits
<i>PARITY</i>	Parity
<i>STOP-BITS</i>	Stop bits
<i>HEX</i>	Hex mode, "true" or "false"

---

**c) Send serial content**

**Command:**

---

```
soip2 -f /dev/ttyS0 -b RS232-PARAM [-r] [-n] -s "CONTENT"
```

---

**Description:**

---

<i>RS232-PARAM</i>	Format: b-dps
	b            baud rate
	d            data bits

---

	p	parity
	s	stop bit
[-r]	Attach a <CR> to the end of "CONTENT"	
[-n]	Attach a <LF> after <CR> or to the end of "CONTENT"	
<i>CONTENT</i>	The RS232 content you want to send	

#### 4. Reset to factory default

**Command:**

---

```
reset_to_default.sh
```

---

#### 5. Linux busybox command

Use the common busybox commands.

#### 6. Obtain the parameter value of the gtparam command

**Command:**

---

```
gtparam g PARAM
```

---

**Response:**

---

```
VALUE
```

---

**Description:**

<i>PARAM</i>	The parameter's name
<i>VALUE</i>	The parameter's value. If the "PARAM" is not given, "VALUE" is "'PARAM' not defined"

## 7. Obtain the parameter value of the gbconfig command

**Command:**

---

*gbconfig --show PARAM*

---

**Response:**

---

*VALUE*

---

**Description:**

---

<i>PARAM</i>	The parameter's name
--------------	----------------------

---

<i>VALUE</i>	The parameter's value
--------------	-----------------------

---

## 8. Obtain the parameter value of the gbset command

**Command:**

---

*gbset PARAM*

---

**Response:**

---

*VALUE*

---

**Description:**

---

<i>PARAM</i>	The parameter's name
--------------	----------------------

---

<i>VALUE</i>	The parameter's value
--------------	-----------------------

---



## 9. IGMP autonomous report settings

**Command:**

---

```
gbparam s igmp_interval INTERVAL
```

---

**Description:**

<i>INTERVAL</i>	Report interval, the range is [0, 600] seconds. 0 means never.
-----------------	--

---

**Note:**

Reboot the device for the settings above to take effect. You can do this by using the busybox **reboot** command.

## 10. RS232\_Mode

**Command:**

---

```
gbparam s rs232_mode RS232MODE
```

---

**Description:**

<i>RS232MODE</i>	passthrough && feedback
------------------	-------------------------

---

**Note:**

Reboot the device for the settings above to take effect. You can do this by using the busybox **reboot** command.

# Settings only for TX (Encoder)

## 1. Video stream settings

### a) H.264 stream settings

#### Commands:

---

```
gbconfig --enc-rc-mode=RCMODE
```

---

```
gbconfig --cbr-avg-bitrate=BITRATE
```

---

```
gbconfig --vbr-max-bitrate=BITRATE
```

---

```
gbconfig --vbr-min-qp=QP
```

---

```
gbconfig --vbr-max-qp=QP
```

---

```
gbconfig --fixqp-iqp=QP
```

---

```
gbconfig --fixqp-pqp=QP
```

---

```
gbconfig --enc-gop=GOP
```

---

```
gbconfig --enc-fps=FPS
```

```
gbparam s venc_big_stream_enable=ENABLE
```

```
gbparam s pure_audio_stream_enable=ENABLE
```

---

```
gbconfig --max-enc-res=RESOLUTION
```

---

```
gbparam s enc_mode H264
```

---

#### Note:

To make all video stream settings take effect, use the **e\_reselect** command.

#### Description:

<i>RCMODE</i>	H.264 rate control mode. Value is "vbr", "cbr", or "fixqp".
---------------	---

<i>BITRATE</i>	H.264 stream bitrate. Value ranges from
----------------	---

	128 to 30000. Its unit is "kbps".
<i>QP</i>	H.264 QP value. Value ranges from 0 to 51
<i>GOP</i>	H.264 GOP. Value ranges from 1 to 65535. DO not set a very big value for GOP.
<i>FPS</i>	H.264 frame rate. Value ranges from 1 to 60.
<i>ENABLE</i>	Enable or disable the stream. "y", enable. "n", disable.
<i>RESOLUTION</i>	Max encoding resolution. Values: 1920x1080 1280x720
<i>H264</i>	set the TX encoding h264 stream.

## b) MJPEG stream HTTP URI and its settings

### Commands:

HTTP Method	GET
URI	http://IP:PORT/stream?resolution= <i>RESOLUTION</i> &fps= <i>FPS</i> &bitrate= <i>BITRATE</i>

### Description:

<i>RESOLUTION</i>	MJPEG resolution. Value is "cif" (default) or "480P".
<i>FPS</i>	MJPEG frame rate. Value ranges from 1 to 30 (default).
<i>BITRATE</i>	MJPEG stream bitrate. Value ranges from 128 to 2000. Its unit is "kbps". Default value

	is 512.
--	---------

<i>IP</i>	The IP address of the device.
<i>PORT</i>	It is 80.

**Note:**

The query string of HTTP after quotation mark "?" is optional. If set, this configuration will affect all MJPEG streams.

## 2. Audio mute control

**Command:**

```
gbconfig --line-out --mute=MUTE
```

**Description:**

<i>MUTE</i>	Mute or unmute the line-out audio. "y", mute "n", unmute
-------------	--

## 3. Audio delay control

**Commands:**

```
gbconfig --lipsync-audio-delay=LIPSYNC_DELAY
```

```
gbconfig --audio-delay=DELAY
```

**Description:**

<i>LIPSYNC_DELAY</i>	Set delay for audio in [100, 500] ms, default value is 100, this is used for system lip sync.
----------------------	---

<i>DELAY</i>	Set delay for audio in [0, 500] ms, default value is 0, this is used for intended purpose.
--------------	--

**Note:**

The final audio latency is equal the sum of TX's *LIPSYNC\_DELAY*, TX's *DELAY*, RX's *LIPSYNC\_DELAY* and RX's *DELAY*.

## 4. EDID import

**Command:**

---

```
setEDID -s "hex string"
```

---

**Note:**

setEDID -i filename. You can select the bin file

## 5. UNICAST&&MULTICAST

```
gbconfig --work-pattern=unicast/multicast
```

## 6. Audio lpcm&&aac

```
gbconfig --audio-enc-type=lpcm/aac
```

## 7. aac enc bitrate

```
gbconfig --audio-enc-bitrate=value[128/192/240 ...]
```

# Settings only for RX (Decoder)

## 1. Source selection

### Commands:

---

```
gbset vi SOURCE
```

---

```
gbconfig --source-select=SOURCE
```

```
gbconfig --vsource-select=SOURCE
```

---

```
gbconfig --asource-select=SOURCE
```

---

```
e e_reconnect
```

---

### Description:

'gbconfig --vsource-select' is same as 'gbset vi', 'gbconfig --asource-select' set the audio source selection, if dose not set 'gbconfig --asource-select', the audio selection will follow the video selection.

'gbconfig --source-select' set the video source and audio source at the same time.

---

<i>SOURCE</i>	TX MAC address. It does not include colons (:) such as "341B22000001".
---------------	--

---

### Note:

The **e e\_reconnect** command will connect a single RX to a new TX. If multiple RX are required to be switched to several TX simultaneously, do not use this command.

## 2. RS232 Source selection

**Command:**

---

```
gbconfig --ssource-select=SOURCE
```

---

**Description:**

'gbconfig --ssource-select' set the RS232 source.

---

<i>SOURCE</i>	TX MAC address. It does not include colons (:) such as "341B22000001".
---------------	--

---

## 3. Video stream settings

**Command:**

---

```
gbconfig --low-delay=VALUE
```

---

**Description:**

---

<i>VALUE</i>	Set "y" to enable the low delay mode. Set "n" to disable the low delay mode. (Default)
--------------	---

---

## 4. Video wall settings

**Command:**

---

```
e e_vw_enable M N x y
```

---

**Description:**

---

<i>M</i>	The VW has " <i>M</i> +1" rows.
<i>N</i>	The VW has " <i>N</i> +1" columns.
<i>x</i>	The RX is in the row " <i>x</i> +1" of the VW.

---

y	The RX is in the column "y+1" of the VW.
---	--

## 5. Output resolutions settings

### Commands:

---

```
gbset fvo RESOLUTION
```

---

```
gbconfig --hdcp-method=HDCPMETHOD
```

---

```
gbparam s fource_output_color_space COLORSPACE  
e e_reoutput
```

---

### Description:

<i>RESOLUTION</i>	<p>The output resolution.</p> <p>Value must be set to the following.</p> <p>AUTO</p> <p>1080P_60</p> <p>1080P_50</p> <p>1080P_30</p> <p>1080P_25</p> <p>1080P_24</p> <p>720P_60</p> <p>720P_50</p> <p>576P_50</p> <p>480P_60</p> <p>640X480_60</p> <p>800X600_60</p> <p>1024X768_60</p> <p>1280X720_60</p> <p>1280X800_60</p> <p>1280X1024_60</p>
-------------------	---

---



	1366X768_60 1440X900_60 1600X1200_60 1920X1080_60 1920X540_60
<i>HDCPMETHOD</i>	HDCP policy method. Value is "follow" (default), "enable", or "disable". <ul style="list-style-type: none"> <li>• follow: means that HDCP in output follows HDCP policy in input.</li> <li>• enable: means that HDCP-encrypted content is always output.</li> <li>• disable: means that non-HDCP encrypted content is always output.</li> </ul>
<i>COLORSPACE</i>	The output color space. Value is "auto" (default), "yuv", or "rgb".

**Note:**

After the "fource\_output\_color\_space" parameter is set, the command **e e\_reoutput** must be implemented to make the settings take effect.

## 6. CEC control

**Commands:**

---

```
e e_cec_system_standby
```

---

e e_cec_one_touch_play	
cec -s "ADDR OPCODE; ADDR OPCODE; ..."	
<b>Description:</b>	
e e_cec_system_standby	Set the CEC display into standby mode.
e e_cec_one_touch_play	Turn on the CEC display immediately.
ADDR OPCODE	"Addr" means source+dest address. "OPCODE" means CEC operation code.

**Example:**

cec -s "40 04"	<ul style="list-style-type: none"> <li>• "40": "4" means source address, "0" means dest address.</li> <li>• "04" means the image view on operation code.</li> </ul>
cec -s "ff 36"	<ul style="list-style-type: none"> <li>• "ff" means the broadcast.</li> <li>• "36" means the standby operation code.</li> </ul>

## 7. Audio mute control

**Commands:**

gbconfig --hdmi-out-audio --mute=MUTE
gbconfig --line-out --mute=MUTE

**Description:**

MUTE	Mute or unmute the line-out audio.
------	------------------------------------

	y, mute
	n, unmute

## 8. Audio delay control

### Commands:

```
gbconfig --lipsync-audio-delay=LIPSYNC_DELAY
gbconfig --audio-delay=DELAY
```

### Description:

<i>LIPSYNC_DELAY</i>	Set delay for audio in [100, 500] ms, default value is 200, this is used for system lip sync.
<i>DELAY</i>	Set delay for audio in [0, 500] ms, default value is 0, this is used for intended purpose.

### Note:

The final audio latency is equal the sum of TX's *LIPSYNC\_DELAY*, TX's *DELAY*, RX's *LIPSYNC\_DELAY* and RX's *DELAY*.

## 9. OSD control

### Commands:

```
gbparam s osd_disp_mode OSD_MODE
osd_on.sh
osd_off.sh
```

**Description:**

<i>OSD_MODE</i>	"follow" means when the video lost, OSD will follow the no source image, "independence" means OSD only display when command <code>osd_on.sh</code> called.
<code>osd_on.sh</code>	Turn on the IP/Mac OSD information.
<code>osd_off.sh</code>	Turn off the IP/Mac OSD information in 'independence' mode or when video is displaying in 'follow' mode.

**Note:**

After the "osd\_disp\_mode" parameter is set, the command `e e_reconnect` must be implemented to make the settings take effect.

## 10. Sink's EDID information

**Command:**

```
cat /var/tmpfs/monitor_info
```

## 11. Stream Rotate

**Command:**

```
e e_vw_rotate_N
```

**Note:** N = 90 or 180 or 270

**Note:**

After the "e e\_vw\_rotate\_N" parameter is set, the command `e e_reconnect` must be implemented to make the settings take effect.

## 12. Eliminate display border

### Command:

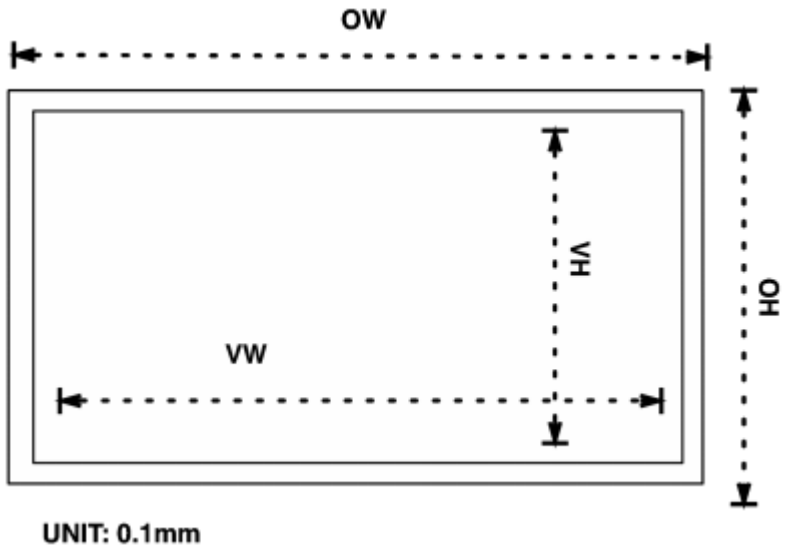
---

```
e e_vw_moninfo_vw_ow_vh_oh
```

---

### Note:

After the "e e\_vw\_moninfo\_vw\_ow\_vh\_ohf" parameter is set, the command e e\_reconnect must be implemented to make the settings take effect.



## 13. Audio volume control

### Commands:

---

```
gbconfig --hdmi-out-audio --level-up  
gbconfig --hdmi-out-audio --level-down  
gbconfig --hdmi-out-audio --level-control=LEVEL
```

---

---

```
gbconfig --line-out --level-up
gbconfig --line-out --level-down
gbconfig --line-out --level-control=LEVEL
```

---

**Description:**

<i>LEVEL</i>	Range from -100 to 12 dB.
--------------	---------------------------

---

## 14. PNG settings

**a) PNG upload URI**

**Commands:**

HTTP Method	POST
URI	http:// <i>IP</i> : <i>PORT</i> /upload_png

**Description:**

<i>IP</i>	The IP address of the device.
<i>PORT</i>	It is 80.

**b) PNG display control**

**Commands:**

---

```
gbconfig --png-overlay-pos-h=POSH
gbconfig --png-overlay-pos-v=POSV
gbconfig --png-overlay-enable=ENABLE
```

---

**Note:**

After change the PNG position, please send 'gbconfig --png-overlay-enable=y' to make the settings take effect.

**Description:**

<i>POSH</i>	PNG image horizontal coordinates. [0, 1919]
<i>POSV</i>	PNG image vertical coordinates. [0, 1079]
<i>ENABLE</i>	Enable or disable the stream. "y", enable. "n", disable.

## 15. 'NO SOURCE' image settings

**a) upload URI****Commands:**

HTTP Method	POST
URI	http://IP:PORT/upload_bg

**Description:**

<i>IP</i>	The IP address of the device.
<i>PORT</i>	It is 80.

## 16. osd show

`osd_show -o {INDEX} -s {CONTENT} -f {FONT} -p {POSITION} -c {INDEX}`

For example: `osd_show -o 1 -s "1234"`

-o {INDEX}: open OSD show, INDEX is the corresponding serial number [1-7]

-s {CONTENT}: Displays the contents of the string

-f {FONT}: font size

-p {POSITION}: Displayed position

-c {INDEX}: close OSD show



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