Ultra Stream

Overview

Universal Interfaces

General Settings

Storage Device

Upload

Stream Server

Encoding Parameters

Reset & Reboot

Log In/Out

User Management

Network Settings

Firmware Update

EDID

Cloud

Introduction

For Ultra Stream, we have rich APIs for developers to interact with products such as obtaining basic information about the device (device name, firmware version and etc.), modifying device configuration and upgrading firmware. These APIs are based on the HTTP protocol and are lightweight, connectionless interfaces that respond to data in JSON format. This document gives you a detailed understanding of each API's functions and request method.

APIs in this document apply to these products:

- Ultra Stream HDMI
- Ultra Stream SDI

API Agreement

Overview

- Request protocol: HTTP
- Request mode: by default, GET is used to request data and commit, and POST is used to upload a file.
- Request URL: http://IP/usapi?method=xxx&param1=value1&param2=value2...
- Return data format: when the status code is 200, it returns JSON data, otherwise it returns HTTP status codes.
- Login authentication: carry sid=xxxxxxxxx in cookies

Example Response

The JSON formatted data is as follows, the attribute of result refers to API Status Codes. The status 0 indicates a successful request, otherwise the request is failed.

```
{
 "result": 0,
  "cur-status": 65552,
  "last-rec-status": 0,
  "cur-time": 0,
  "box-name": "Ultra Stream C301181214002",
 ...
}
```

API Status Code

```
{
  retSendWaiting          = 31,          // File upload state,: waiting
  retLivingAuthErr        = 30,          // Live stream status: the authentication is error
  retLivingNotset         = 29,          // Live stream address is not set
  retLivingDNS            = 28,          // Live stream status: Resolving DNS
  retInit                 = 27,          // Initial status
  retLivingAuthing        = 25,          // Live stream status: the authorization is in progress
  retLivingWaiting        = 24,          // Live stream status: the device is waiting for connection to the stream se
rver
  retLivingConnecting     = 23,          // Live stream status: the device is connecting to the stream server
  retLivingConnected      = 22,          // Live stream status: the stream server has connected
  retPushReboot           = 21,
  retAudioSignalChange    = 20,
  retBlueWrite            = 19,
  retBlueRead             = 18,
  retBlueShutDown         = 17,
  retDiskOn               = 16,
  retDiskOff              = 15,
  retDiskChange           = 14,
  retSnapshotOver         = 13,
  retPushReset            = 12,
  retPushLiving           = 11,
  retPushRecord           = 10,
  retSignalChange         = 9,
  retRouteChange          = 8,
  retIPChange             = 7,
  retNetChange            = 6,
  retCancel               = 5,           // Request is canceled
  retLowSpace             = 4,           // There is not enough free space on the storage device.
  retLowSpeed             = 3,           // The storage device is too slow to record smooth video.
  retRunning              = 2,           // The request is running
  retRepeat               = 1,           // Repeat request
  retSucceed              = 0,           // Request has succeeded
  errPasswd               = -1,          // Password is error
  errOccupied             = -2,          // The device is being used by others currently
  errDisconnect           = -3,          // Reserved
  errDevice               = -4,
  errDisk                 = -5,
  errUnconnect            = -6,
  errKey                  = -7,
  errVersion              = -8,
  errBusy                 = -9,          // System is busy
  errParam                = -10,         // Error request parameters
  errUsage                = -11,         // Reserved
  errTimeout              = -12,
  errIP                   = -13,         // Reserved
  errNotFound             = -14,         // Data does not exist
  errFile                 = -15,         // Error file
  errNoSpace              = -16,         // There is not any free space on the storage device.
  errNeedAuth             = -17,         // An authentication is required.
  errSystem               = -18,         // System error
  errDiskSpeed            = -19,
  errEmpty                = -20,
  errNetwork              = -21,
  errEvent                = -22,
  errCodec                = -23,
  errBlue                 = -24,
  errNoUser               = -25,          // This user does not exist
  errNoPermissin          = -26,
```

```
  errSameName             = -27,          // The name already exists
  errString               = -28,          // Input characters are not valid
  errChannelsLimited      = -29,          // Stream simultaneously to 2 servers at most.
  err8MLimited            = -30,          // When the bitrate is above 4 Mbps, the streamer can stream to 1 server on
ly.
  errFacebookLimited      = -31,          // As is required by Facebook's Terms of Service, the device can not stream
simultaneously to Facebook and other online streaming services.
  errCodecLimited         = -32,          // Live stream is not allowed when HEVC streamer is used.
  err4GLimited            = -33,          // The maximum size of a single saved recording file should be no more than
4G.
  errMWFUnsupported       = -34           // The update package does not match current model or hardware version of t
he product
  errNoSignal             = -35,          // No signal
  errSDCard               = -36,
  errXinYueServer         = -37,          // File upload status: server error
  errAliYunOSS            = -38,          // File upload status: Alibaba Cloud OSS error
  errSDNoSpace            = -39,          // There is no free space in SD card.
  errSDNoPermission       = -40,          // No permission when writing to SD card.
  errRTSPLimited          = -41,          // Only one RTSP broadcast is supported at a time, you can not stream other
data simultaneously.
  errRTSP8MLimited        = -42,          // When broadcasting RTSP stream, the bitrate should be no more than 4 Mbp
s.
  errLockLiving           = -43,          // Live streaming is locked. Manually stop is not allowed.
  errRecParam             = -52,          // Recording related parameters error
  errLiveParam            = -53,          // Live streaming related parameters error
  errFTPServer            = -100,         // FTP/SFTP server error
}
```

Cloud API Status Code

```
{
  errLogin        = -200,      // Cloud not login
  errSn           = -109,      // serial number not valid
  errParam        = -10,       // parameters error
  errDevice       = -4,        // unsupported device
  errPasswd       = -1,        // invitation code error
  retSuccess      = 0,
  retRepeat       = 1,         // repeat registration
  retRegistering  = 2,         // registering
  retInit         = 27,        // parameters of Cloud is in initialization state.
  retOnline       = 35,        // Cloud platform is online
  retOffline      = 36,        // Cloud platform is offline
  retDeleted      = 104,
  retWaiting      = 103,
  retRefused      = 102,
  retAccepted     = 101,
}
```

Device Status Mask

```
{
  statusFirst        = 0x01,      // first boot
  statusRecord       = 0x02,      // recording
  statusLiving       = 0x04,      // live streaming
  statusStream       = 0x08,      // Reserved
  statusDiskReady    = 0x10,      // USB flash drive is ready to work
  statusRTMPReady    = 0x20,      // RTMP is ready to live stream
  statusSoftAP       = 0x40,      // The device is in Wi-Fi AP mode
  statusMIC          = 0x100,     // Reserved
  statusPHONE        = 0x200,     // Reserved
  statusOutput       = 0x400,     // Reserved
  statusDiskTest     = 0x1000,    // USB performance test is in progress
  statusBlue         = 0x2000,    // Reserved
  statusUpgrade      = 0x4000,    // Firmware update is in progress
  statusNetTest      = 0x8000,    // Streaming test is in progress
  statusPasswd       = 0x10000,   // Device password has been set
  statusOccupied     = 0x20000,   // Device has been locked by app(s), at most 2 simultaneously
  statusFormatDisk   = 0x100000,  // USB format is in progress
  statusFormatSD     = 0x200000,  // SD format is in progress
  statusSearchWifi   = 0x400000,  // The device is searching for available Wi-Fi networks
  statusConnectWifi  = 0x800000,  // The device is connecting to a Wi-Fi network
  statusConnectBlue  = 0x1000000, // Reserved
  statusCheckUpgrade = 0x2000000, // The device is detecting if there is a new firmware version
  statusReset        = 0x4000000,   // resetting
  stausIPv6          = 0x8000000,   // Reserved
  statusTestLock     = 0x10000000,  // Reserved
  statusReboot       = 0x20000000,  // Rebooting
  statusSendTest     = 0x40000000,  // Upload test is on going
}
```

The Status Code of the Storage Device

```
{
  NotDisk: 0x00,          // Storage device is not detected
  DiskValid: 0x01,        // Storage device is valid
  NotSpace: 0x03,         // There is not free space on Storage device
  NotWrite: 0x04,         // Storage device is not writable
  LowSpace: 0x05,         // There is not enough free space on storage device, that is less than 200 MB
  DiskInvalid: 0x06       // Storage device is invalid
}
```

API Limits

This topic lists the scenarios between different requests that may come in at one time and what will happen when they meet. It will help provide a level of protection from random and unexpected requests that threaten the availability and performance characteristics of the streamer.

- N: independent events.
- Mutually exclusive: if the occurrence of any one of them means the others will not occur (That is, we cannot have 2 events occurring at the same time).
- Repeat request: remind the user to refresh the page manually or automatically when repeat requests are performed at nearly the same time.
- Last effective: make the last applied modification effective if the same parameter is specified multiple times.

Requests	USB Format	Performance Test	Live Test	Edit Streaming Server	LIVE	REC	Encoding Parameter	Firmware Update	Reset	R
Usb Format	Repeat request	Mutually exclusive	N	N	N	Mutually exclusive	N	N	N	N
Performance Test	Mutually exclusive	Repeat request	N	N	N	Mutually exclusive	N	N	N	N
Live Test	N	N	Mutually exclusive	Mutually exclusive	Mutually exclusive	N	Mutually exclusive	N	N	N
Edit Streaming Server	N	N	Mutually exclusive	Last effective	Mutually exclusive	N	N	N	N	N
LIVE	N	N	Mutually exclusive	Mutually exclusive	Repeat request	N	Mutually exclusive	N	N	N
REC	Mutually exclusive	Mutually exclusive	N	N	N	Repeat request	Mutually exclusive	N	N	N
Encoding Parameter	N	N	Mutually exclusive	N	Mutually exclusive	Mutually exclusive	Last effective	N	N	N
Firmware Update	Mutually exclusive	Mutually exclusive	Mutually exclusive	Mutually exclusive	Mutually exclusive	Mutually exclusive	Mutually exclusive	Repeat request	Mutually exclusive	M ex
Reset	Mutually exclusive	Mutually exclusive	Mutually exclusive	Mutually exclusive	Mutually exclusive	Mutually exclusive	Mutually exclusive	Mutually exclusive	Repeat request	M ex
Reboot	Mutually exclusive	Mutually exclusive	Mutually exclusive	Mutually exclusive	Mutually exclusive	Mutually exclusive	Mutually exclusive	Mutually exclusive	Mutually exclusive	R re
Other	N	N	N	N	N	N	N	N	N	N

Device Discovery Protocol

The encoder can be discovered by using **multicast protocol** or **SSDP**.

Multicast

Obtain the basic configurations and status of the device, including device name, serial number, work status, and network status.

- Multicast address: 239.255.255.250
- Port: 2538

Response Body

```
{
  "version":"1.0",
  "flag":"ssip",
  "product":"Ultra Stream",
  "boxname":"[LH-SDI]-1.2.1",
  "serialnumber":"A302190719003",
  "wifiip":"192.168.48.1",
  "ethip":"192.168.1.217",
  "status":65600
}
```

Item	Description
version	Indicates the version of multicast communication protocol.
flag	Indicates the flag of multicast communication protocol.
product	Indicates product type.
boxname	Indicates device name.
serialnumber	Indicates device serial number.
wifiip	Indicates IP address of Wi-Fi.
ethip	Indicates IP address of Ethernet.
status	Indicates Device Status Mask.

Supported Bluetooth Protocol

Bluetooth is provided on Ultra Stream, which makes the device discoverable to nearby device. With Bluetooth, exchanging data between streamer and other device is available.

Supported GATT Service

1.Service: Device info(0000180a-0000-1000-8000-00805f9b34fb)

Use the Service to obtain the device profiles. Characteristic is shown in the following table.

UUID	Description
00002a29-0000-1000-8000-00805f9b34fb	Manufacturer Name: MAGEWELL
00002a24-0000-1000-8000-00805f9b34fb	Product model, such as ULTRA STREAM HDMI
00002a25-0000-1000-8000-00805f9b34fb	Serial number, such as C301170101001
00002a26-0000-1000-8000-00805f9b34fb	Hardware revision, such as 1.3.11

2.Service: GATT(e20a39f4-73f5-4bc4-a12f-17d1ad07a961)

GATT is used for data exchange, including obtaining device information, password authentication, Wi-Fi configuration, enabling device ap mode, and obtaining ap information.

UUID	Name
08590f7e-db05-467e-8757-72f6faeb13d4	Buffer-0
f4be124e-4cdc-43e2-a6bb-8628e4009e6b	Buffer-1
1de1bf3d-1bbe-43aa-9a30-b2bb5ce9671d	Buffer-2
8d7bd67d-d0b3-4a5e-8d2b-2912af174a7d	Buffer-3
3a10340a-85e3-4190-86b4-b94dc505e4f8	Buffer-4

Bluetooth Low Energy Advertising

BLE Name: It is fixed as 13-character device serial number, with a capital alphabetic prefix and 12 numbers, such as C301170101001. The serial number rules are as follows.

1. A capital alphabetic prefix of with a range of 26, A to Z.
2. The forth and fifth number indicates the manufacture year between 17-27.
3. The sixth and seventh number indicates the manufacture month between 01-12.
4. The eighth and ninth number indicates the manufacture day between 01-31.

Advertising Packet Agreement

- Including Advertising and Scan Response data.
- Advertising Data contains a sequence of AD structures
- AD structures contains the Length value, AD type and AD data.
- The Length value is the first octet of the AD structure.

Advertising Packet	AD Structure				
	Length	AD type	AD Data	Total Length	Description
Advertising Data	0x05	0x04	4 bytes	6 Bytes	UUID
	0x16	0xFF	21 Bytes	23Bytes	Manufacturer Specific Data
Scan Response	0x0E	0x09	13 Bytes	15Bytes	Complete Local Name

1.UUID (6 Bytes)

UUID: "ad07a961-0000-1000-8000-00805f9b34fb"

You can scan devices using specified UUID.

Length	Value	Description
1 byte	0x05	UUID length
1 byte	0x04	UUID flag: Incomplete List of 32-bit Service Class UUIDs
4 bytes	{0x61, 0xa9, 0x07, 0xad}	UUID value

2.Manufacturer Specific Data (23 Bytes)

Definitions of AD Data (21Bytes) are as follows.

Length	Value	Description
1 byte	0x14	Custom data length
1 byte	0xFF	custom data flag
2 bytes	0x2935	vender id. It is a constant value.
2 bytes	0x0808	product id. It is a constant value.
1 bytes	0x01	ble data layout. It is a constant value.
2 bytes	0x0001	net protocol version, 1.0. It is a constant value.
4 bytes	0x01010101	box status mask
4 bytes	0x00000000	box eth ip: Ethernet IP address
4 bytes	0x00000000	box wifi ip: Wi-Fi IP address

3.Complete Local Name

Complete device name is the same as the 13-character device serial number. That is the BLE Name mentioned in the above context.

Device Communication

The client searches the device via the Bluetooth discovery service (GATT service: e20a39f4-73f5-4bc4-a12f-17d1ad07a961), and then interacts with the device via the BLE read/write feature value.

Service: GATT(e20a39f4-73f5-4bc4-a12f-17d1ad07a961):

This service is mainly used to interact with devices, such as obtaining device status, password authentication, Wi-Fi configurations, enabling device AP mode, and obtaining AP information, etc.

Service Characteristics are shown as the following table.

UUID	Name
08590f7e-db05-467e-8757-72f6faeb13d4	Buffer-0
f4be124e-4cdc-43e2-a6bb-8628e4009e6b	Buffer-1
1de1bf3d-1bbe-43aa-9a30-b2bb5ce9671d	Buffer-2
8d7bd67d-d0b3-4a5e-8d2b-2912af174a7d	Buffer-3
3a10340a-85e3-4190-86b4-b94dc505e4f8	Buffer-4

1.Obtaining Device Status

Procedure	Operation
Step 1	APP -> Box Buffer-0: 2 Bytes = 0x5335 , 2 Bytes = Index
Step 2	Box -> APP Buffer-4: 2 Bytes = 0x5336 , 4 Bytes = Box Status , 2 Byte = Same index

Step 1: Request the device status when write using the buffer-0 characteristic. The characteristic contains 2 bytes constant value (0x5335) and 2 bytes random number.

Step 2: Obtain the device status when read using the buffer-4 characteristic. The characteristic contains 2 bytes constant value (0x5336), 4 bytes device status and 2 bytes random number.

> Note: The random number in Step 2 and Step 1 must be the same.

2.Password Authentication

Procedure	Operation
Step 1	APP -> Box Buffer-4: 2 Bytes = 0x5333 , 2 Bytes = Index Buffer-0: 2 Bytes = 0x5333 , 16 Bytes = MD5(password)
Step 2	Box -> APP Buffer-4: 2 Bytes = 0x5334 , 4 Bytes = retSucceed (0), errPasswd(-1) , 2 Byte = Same index

The Buffer-4 characteristic should be written before the Step 1 Buffer-0 characteristic.

3.Wi-Fi Configuration

Step 1	APP -> Box
	Buffer-0: 2 Bytes = 0x5337 2 Bytes = secuID, 0 - none, 1 - WEP, 2 - WPAPSK, 3 - WPA2PSK | 2 Bytes = Index | 2 Bytes = 0 - only ipv4, 1 - ipv4 or ipv6, 2 - only ipv6
	Buffer-1: 18 Bytes = Wifi Name - 1
	Buffer-2: 18 Bytes = Wifi Name - 2
	Buffer-3: 18 Bytes = Wifi Passwd
	Buffer-4: 2 Bytes = 0x5337 | 16 Bytes = Wifi Passwd - 2
Step 2	Box -> APP
	Buffer-0: 2 Bytes = 0x5332 | 2 Bytes = Same Index
	Buffer-4: 2 Bytes = 0x5332 | 4 Bytes = retRunning(2), retSucceed (0), errPasswd(-1), errDevice(-4), errTimeout(-12), errNotFound(-14), errEmpty(-20)| 4 Bytes = WifiIP if retSucceed | 4 Bytes = Box Status | 2 Bytes = Version Major| 2 Bytes = Version Minor |

Step 1: If the Wi Fi name and password are more than 18 bytes, they are written in two parts: buffer-0 buffer-1 buffer-2 buffer-3 buffer-4
Step 2: Read the buffer-0 characteristic first, and then the buffer-4 characteristic.

4.Enabling AP mode

Step 1	APP -> Box
	Buffer-0: 2 Bytes = 0x5341 | 2 Bytes = Index
Step 2	Box -> APP
	Buffer-4: 2 Bytes = 0x5342 | 4 Bytes = retSucceed (0), retRunning(2), errDevice(-4) | 2 Byte = Same index

5.AP Information

Step 1	APP -> Box
	Buffer-0: 2 Bytes = 0x5343 | 2 Bytes = Index
Step 2	Box -> APP
	Buffer-4: 2 Bytes = 0x5344 | 2 Bytes = secuID, 0 - none, 1 - WEP, 2 - WPAPSK, 3 - WPA2PSK | 2 Byte = Same index
	Buffer-2: 2 Bytes = 0x5344 | 16 Bytes = Wi-Fi Name
	Buffer-3: 2 Bytes = 0x5344 | 16 Bytes = Wi-Fi Passwd

The order of reading characteristics in step 2 is Buffer-4 Buffer-2 Buffer-3.

6.Ping

Step 1	Box -> APP
	Buffer-1:

After a Gatt connection is established, the buffer-1 feature is read periodically to prevent the GATT connection from being disconnected.

DEMO: Node.js

This chapter introduces how to call the Ultra Stream API in Node.js.

Download DEMO: ultra-stream-api-demo-nodejs.zip

DEMO Structure

```
ultra-stream-api-demo-nodejs
|
|-- httpUtils.js    // based on HTTP get and upload in Node.js
|-- xxxx.mwf        // the uploaded file called by upload-update-file in upload.js
|-- get.js          // request data using GET
|-- upload.js       // upload file using POST
```

Requirements

- Operating System: macOS, Linux, Windows
- Node.js Runtime: 8.x or newer; it is recommended that you use LTS Releases.

Running Mode

1. Navigate into the DEMO directory in the terminal.

   ```
   cd ultra-stream-demo-nodejs
   ```

2. Replace deviceIP with the tested IP address of device in get.js and upload.js
3. Run get.js

   ```
   node get
   ```

4. Run upload.js

   ```
   node upload
   ```

DEMO: C

Requirements

- Operating System: Windows, macOS and Linux

Compilation

- Prepare the curl sdk for the Windows/macOS/Linux Operating System
- Download DEMO: ultra-stream-api-demo-c.zip
- Compile "ultra_stream_curl.c", and link to "libcurl"
- Build the ultra_stream_curl file

Example

- Navigate and copy the firmware file into the bin directory, and run the ultra_stream_curl.

```
cd ultra-stream-api/demo/c/bin
cp ultra_stream_hdmi_rev_c_1_2_123.mwf linux
cd linux
./ultra_stream_curl <hostip:port>
```

- Sample response

```
***** 1. login *****
login response data:
{
        "result": 0
}

***** 2. get info *****
get info response data:
{
        "result": 0,
        "mac-addr": {
                "eth": "70:b3:d5:75:d0:4c",
                "wifi": "70:b3:d5:75:d0:4d",
                "blue": "70:b3:d5:75:d0:4e"
        },
        "snapshot": "/tmp/sbox-snapshot/sbox-quarter.jpg",
        "product": {
                "sn": "C301171116015",
                "product-id": 769,
                "hardware-ver": "C",
                "firmware-id": 1,
                "firmware-ver-s": "1.2.122",
                "factory-firmware-ver-s": "1.2.116",
                "product-name": "Ultra Stream",
                "module-name": "Ultra Stream HDMI",
                "manu-name": "MAGEWELL",
                "features": 1,
                "max-lock-count": 2
        },
        "audio-range": {
                "hdmi": {
                        "max": 6.00,
                        "min": -100.00,
                        "def": 0.00
                },
                "mic": {
                        "max": 55.25,
                        "min": -12.00,
                        "def": 0.00
                },
                "phone": {
                        "max": 6.00,
                        "min": -57.00,
                        "def": 0.00
                }
        },
        "codec-cap": {}
}

***** 3. upload firmware *****
upload firmware response data:
{
        "result": 0,
        "up-to-date": true,
        "version": "1.2.123",
        "size": 12494463
}
```

get-info

Use the interface to obtain device information, including product and manufacture information, MAC address of the network card, and the ranges of video and audio settings.

HTTP Request

```
GET http://ip/usapi?method=get-info
```

Parameter	Description
method	get-info

Response Body

JSON structure is as follows:

```
{
"result": 0,                  // returned Status
"mac-addr": {},               // MAC address
"snapshot": "",               // snapshot saved path
"product": {},                // product information
"nosignal": {},               // resolution and file size ranges of no signal image
"audio-range": {              // the ranges of audio parameters
  "hdmi": {},
  "mic": {},
  "phone": {}
},
"codec-cap": {                // the ranges of encoding parameters
  "resolutions": [],
  "durations": [],
  "profile": [],
  "hevc-profile": [],
  "video-kbps": [],
  "audio-kbps": [],
  "gop-sec": [],
  "video-range": [],
  "stat-sec": [],
  "video-codec": []
},
"rec-control": {},             // the ranges of recording parameters
"color-range": {               // the ranges of color adjustments
    "contrast": {},
    "brightness": {},
    "saturation": {},
    "hue": {}
  },
  "video-format": {            // the ranges of video formats
    "input-color-fmt": {},
    "output-color-fmt": {},
    "quant-range": {},
    "sat-range": {}
  },
  "send-file": {               // the ranges of upload servers
    "server": {},
    "ftp-proto": {},
    "ftp-encryption": {},
    "ftp-transfer-mode": {}
  }
}
```

Request Body

```
{
  "result": 0,
  "mac-addr": {
    "eth": "70:b3:d5:75:d5:fc",
    "wifi": "70:b3:d5:75:d5:fd",
    "blue": "70:b3:d5:75:d5:fe"
  },
  "snapshot": "/tmp/sbox-snapshot/sbox-quarter.jpg",
  "product": {
    "sn": "C301181214002",
    "product-id": 769,
    "hardware-ver": "C",
    "firmware-id": 0,
    "firmware-ver-s": "1.2.122",
    "factory-firmware-ver-s": "1.2.115",
    "product-name": "Ultra Stream",
    "module-name": "Ultra Stream HDMI",
    "manu-name": "MAGEWELL",
    "features": 1,
    "max-lock-count": 2
  },
  "nosignal": {
    "max-count": 4,
    "max-width": 1920,
    "max-height": 1080,
    "max-size-kb": 512
  },
  "audio-range": {
    "hdmi": {
      "max": 6.00,
      "min": -100.00,
      "def": 0.00
    },
    "mic": {
      "max": 55.25,
      "min": -12.00,
      "def": 0.00
    },
    "phone": {
      "max": 6.00,
      "min": -57.00,
      "def": 0.00
    }
  },
  "codec-cap": {
    "resolutions": [
      {
        "w": 480,
        "h": 360
      },
      {
        "w": 640,
        "h": 360
      },
      {
        "w": 640,
        "h": 480
      },
      {
        "w": 720,
        "h": 480
```

```
      },
      {
        "w": 720,
        "h": 576
      },
      {
        "w": 768,
        "h": 576
      },
      {
        "w": 800,
        "h": 600
      },
      {
        "w": 960,
        "h": 540
      },
      {
        "w": 1024,
        "h": 768
      },
      {
        "w": 1280,
        "h": 720
      },
      {
        "w": 1280,
        "h": 800
      },
      {
        "w": 1280,
        "h": 960
      },
      {
        "w": 1280,
        "h": 1024
      },
      {
        "w": 1440,
        "h": 900
      },
      {
        "w": 1440,
        "h": 1080
      },
      {
        "w": 1600,
        "h": 1200
      },
      {
        "w": 1920,
        "h": 1080
      }
    ],
    "durations": [
      {
        "name": "15 FPS",
        "value": 666667
      },
      {
        "name": "24 FPS",
        "value": 416667
```

```
      },
      {
        "name": "25 FPS",
        "value": 400000
      },
      {
        "name": "29.97 FPS",
        "value": 333667
      },
      {
        "name": "30 FPS",
        "value": 333333
      },
      {
        "name": "50 FPS",
        "value": 200000
      },
      {
        "name": "59.94 FPS",
        "value": 166833
      },
      {
        "name": "60 FPS",
        "value": 166667
      }
    ],
    "profile": [
      {
        "name": "Baseline",
        "value": 0
      },
      {
        "name": "Main profile",
        "value": 1
      },
      {
        "name": "High profile",
        "value": 2
      }
    ],
    "hevc-profile": [
      {
        "name": "Main profile",
        "value": 0
      }
    ],
    "video-kbps": [
      {
        "name": "256 Kbps",
        "value": 256
      },
      {
        "name": "512 Kbps",
        "value": 512
      },
      {
        "name": "768 Kbps",
        "value": 768
      },
      {
        "name": "1 Mbps",
        "value": 1024
```

```
      },
      {
        "name": "1.5 Mbps",
        "value": 1536
      },
      {
        "name": "2 Mbps",
        "value": 2048
      },
      {
        "name": "3 Mbps",
        "value": 3072
      },
      {
        "name": "4 Mbps",
        "value": 4096
      },
      {
        "name": "8 Mbps",
        "value": 8192
      }
    ],
    "audio-kbps": [
      {
        "name": " 16 Kbps",
        "value": 16
      },
      {
        "name": " 32 Kbps",
        "value": 32
      },
      {
        "name": " 48 Kbps",
        "value": 48
      },
      {
        "name": " 64 Kbps",
        "value": 64
      },
      {
        "name": " 96 Kbps",
        "value": 96
      },
      {
        "name": "128 Kbps",
        "value": 128
      }
    ],
    "gop-sec": [
      {
        "name": " 1 sec",
        "value": 1
      },
      {
        "name": " 2 sec",
        "value": 2
      },
      {
        "name": " 5 sec",
        "value": 5
      },
      {
```

```
        "name": "10 sec",
        "value": 10
      },
      {
        "name": "30 sec",
        "value": 30
      },
      {
        "name": "60 sec",
        "value": 60
      }
    ],
    "video-range": [
      {
        "name": "Full range (0-255)",
        "value": 1
      },
      {
        "name": "Limited range (16-235)",
        "value": 0
      }
    ],
    "stat-sec": [
      {
        "name": " 1 sec",
        "value": 1
      },
      {
        "name": " 5 sec",
        "value": 5
      },
      {
        "name": "10 sec",
        "value": 10
      },
      {
        "name": "30 sec",
        "value": 30
      },
      {
        "name": "60 sec",
        "value": 60
      }
    ],
    "video-codec": [
      {
        "name": "H.264",
        "value": 0
      },
      {
        "name": "HEVC",
        "value": 1
      }
    ]
  },
    "rec-control": {
    "usb-option": [
      {
        "name": "Don't record",
        "value": 0
      },
      {
```

```
      "name": "Ordinary recording",
      "value": 1
    }
  ],
  "sd-option": [
    {
      "name": "Don't record",
      "value": 0
    },
    {
      "name": "Ordinary recording",
      "value": 1
    },
    {
      "name": "Loop recording",
      "value": 2
    }
  ],
  "time-unit": [
    {
      "name": "5 minutes",
      "value": 5
    },
    {
      "name": "10 minutes",
      "value": 10
    },
    {
      "name": "30 minutes",
      "value": 30
    },
    {
      "name": "40 minutes",
      "value": 40
    },
    {
      "name": "50 minutes",
      "value": 50
    },
    {
      "name": "60 minutes",
      "value": 60
    },
    {
      "name": "90 minutes",
      "value": 90
    },
    {
      "name": "120 minutes",
      "value": 120
    }
  ],
  "file-ext": [
    {
      "name": "mp4",
      "value": 0
    },
    {
      "name": "mov",
      "value": 1
    }
  ]
```

```
  },
  "color-range": {
    "contrast": {
      "max": 200,
      "min": 50,
      "def": 100
    },
    "brightness": {
      "max": 100,
      "min": -100,
      "def": 0
    },
    "saturation": {
      "max": 200,
      "min": 0,
      "def": 100
    },
    "hue": {
      "max": 90,
      "min": -90,
      "def": 0
    }
  },
  "video-format": {
    "input-color-fmt": [
      {
        "name": "RGB",
        "value": 1
      },
      {
        "name": "YUV BT.601",
        "value": 2
      },
      {
        "name": "YUV BT.709",
        "value": 3
      },
      {
        "name": "YUV BT.2020",
        "value": 4
      }
    ],
    "output-color-fmt": [
      {
        "name": "YUV BT.601",
        "value": 2
      },
      {
        "name": "YUV BT.709",
        "value": 3
      }
    ],
    "quant-range": [
      {
        "name": "Full range (0-255)",
        "value": 1
      },
      {
        "name": "Limited range (16-235)",
        "value": 2
      }
    ],
```

```
    "sat-range": [
      {
        "name": "Full range (0-255)",
        "value": 1
      },
      {
        "name": "Limited range (16-235)",
        "value": 2
      },
      {
        "name": "Extended GAMUT range (1-254)",
        "value": 3
      }
    ]
  },
  "send-file": {
    "server": [
      {
        "name": "FTP Server",
        "value": 0
      },
      {
        "name": "Google Drive",
        "value": 1
      },
      {
        "name": "Dropbox",
        "value": 2
      }
    ],
    "ftp-proto": [
      {
        "name": "FTP - File Transfer Protocol",
        "value": 0
      },
      {
        "name": "SFTP - SSH File Transfer Protocol",
        "value": 1
      }
    ],
    "ftp-encryption": [
      {
        "name": "Only use plain FTP (insecure)",
        "value": 0
      },
      {
        "name": "Require explicit FTP over TLS",
        "value": 1
      },
      {
        "name": "Require implicit FTP over TLS",
        "value": 2
      }
    ],
    "ftp-transfer-mode": [
      {
        "name": "Active",
        "value": 0
      },
      {
        "name": "Passive",
        "value": 1
```

```
        }
      ]
    }
  }
```

get-status

Use the interface to obtain the real-time working status of the device, including status of record, live stream, firmware update, and USB format.

HTTP Request

```
GET http://ip/usapi?method=get-status
```

Parameter	Description
method	get-status

Response Body

JSON structure is as follows:

```
{
  "result": 0,                    // returned status
  "cur-status": 65552,            // device running status Mask
  "last-rec-status": 0,
  "cur-time": "2019-09-26 ...",   // current time of device
  "box-name": "",                 // device name
  "lock-user": [],
  "rec-status": {},               // recording status
  "live-status": {},              // live stream status
  "upgrade-status": {},           // status of firmware update
  "format-status": {},            // status of USB format
  "disk-test": {},                // status of USB performance test
  "living-test": {},              // status of live stream test
  "check-upgrade": {},            // status of online firmware detection
  "send-file": {},                // status of file upload
  "send-file-test": {},           // status of file upload test
  "input-signal": {},             // input signal information
  "usb": {},                      // USB information
  "sd": {},                       // SD card information
  "wifi": {},                     // Wi-Fi information. If the AP mode is on , it shows the AP connection informatio
n.
  "eth": {},                      // Ethernet information
  "mobile": {},                   // mobile network information
  "upgrade": {},                  // new version firmware information
  "downgrade": {}
}
```

Response Body

```
"result": 0
```

Device Running Status Mask

```
"cur-status": 65552
```

Masks vary depending on the various device running status. Refer to Device Status Masks to find specific description for each value. The following condition is used to calculate the device running status.

1. Referring to the Device Status Masks, when a device is updating firmware, the mask is: statusUpgrade = 0x4000.
2. If `cur-status & statusUpgrade = statusUpgrade` , it indicates firmware update is in progress.

System State

```
"sysstat": {
  "cpu": 1500
  "cpu-usage": 19
  "eth-rx": 106248
  "eth-tx": 4339448
  "mem-free": 195612
  "mem-total": 524288
  "mobile-rx": 0
  "mobile-tx": 0
  "sd-rd": 0
  "sd-wr": 0
  "uptime": 331255
  "usb-rd": 0
  "usb-wr": 0
  "wlan-rx": 0
  "wlan-tx": 0
}
```

Input Signal Status

```
"input-signal": {
  "status": 0,
  "cx": 0,
  "cy": 0,
  "interlaced": 0,
  "frame-rate": 0.00,
  "channel-valid": 0,
  "is-lpcm": 0,
  "bits-per-sample": 0,
  "sample-rate": 0
}
```

Recording Status

```
"rec-status": {
  "result": 0,
  "run-ms": 0,
  "cur-bps": 0,
  "avg-bps": 0,
  "client-id": ""
}
```

Live Stream Status

```
"live-status": {
  "result": 0,
  "run-ms": 0,
  "cur-bps": 0,
  "avg-bps": 0,
  "net": 0,
  "result2": 0,
  "cur-bps2": 0,
  "net2": 0,
  "client-id": ""
}
```

Live Stream Test Status

```
"living-test": {
  "upload-bps": 0,
  "percent": 0,
  "result": 27,
  "net": 0,
  "client-id": ""
}
```

Online Firmware Update Detecting Status

```
"check-upgrade": {
  "result": 0,
  "client-id": ""
}
```

New Firmware Information

```
"upgrade": {
  "ver": "",
  "date": "",
  "size-byte": 0,
  "info": []
}
```

Firmware Update Status

```
"upgrade-status": {
  "step": 0,
  "percent": 0,
  "result": 27,
  "client-id": "",
  "mode": "none"
}
```

Upload Status

```
"send-file": {
  "total-count-ongoing": 0,
  "total-count-done": 4,
  "disk-type": 0,
  "name": "",
  "result": 31,
  "message": "",
  "left-time": 0,
  "percent": 0
}
```

Upload Test Status

```
"send-file-test": {
  "result": 27,
  "client-id": "",
  "id": 0
}
```

USB Information


```
"usb": {
  "disk-status": 1,
  "total-size": 61638148096,
  "used-size": 3559489536,
  "free-size": 57944440832,
  "block-size": 32768,
  "usage": 6,
  "sys-path": "/dev/sda1",
  "fs-type": "vfat",
  "mount-path": "/usr/share/web-data/media/disk0",
  "fs-label": "C472-731D",
  "write-bps": 14255282,
  "read-bps": 0,
  "free-sec": 208038,
  "file-count": 47,
  "beign-time": "2019-09-24 08:04:39",
  "end-time": "2019-09-28 07:12:44",
  "total-cache-time": 0
}
```


SD Card Information


```
"sd": {
  "disk-status": 1,
  "total-size": 31895175168,
  "used-size": 3708043264,
  "free-size": 24997614388,
  "block-size": 16384,
  "usage": 12,
  "sys-path": "/dev/mmcblk1p1",
  "fs-type": "vfat",
  "mount-path": "/usr/share/web-data/media/disk1",
  "fs-label": "9C30-9CB8",
  "write-bps": 0,
  "read-bps": 0,
  "free-sec": 89749,
  "file-count": 50,
  "beign-time": "2019-09-24 07:49:57",
  "end-time": "2019-09-28 07:12:44",
  "total-cache-time": 103062
}
```


USB Performance Test Status


```
"disk-test": {
  "read-bps": 0,
  "write-bps": 0,
  "percent": 0,
  "result": 27,
  "client-id": ""
}
```

USB/SD Card Format Status

```
"format-status": {
  "percent": 0,
  "result": 27,
  "client-id": ""
}
```

Wi-Fi Information

It shows the AP information when `cur-status` & `0x40` = `0x40`, the AP mode is on.

```
"wifi": {
  "name": "MWL1",
  "level": 0,
  "ip": "192.168.8.249",
  "mask": "255.255.255.0",
  "router": "192.168.8.1",
  "dns": "192.168.8.1"
}
```

Ethernet Information

```
"eth": {
  "ip": "10.10.107.212",
  "mask": "255.255.0.0",
  "router": "10.10.0.1",
  "dns": "10.0.0.3"
}
```

Mobile Broadband Network Information

```
"mobile": {
  "ip": "",
  "mask": "",
  "router": "",
  "dns": ""
}
```

get-settings

Use the interface to obtain the configurations of device.

HTTP Request

```
GET http://ip/usapi?method=get-settings
```

Parameter	Description
method	get-settings

Response Body

JSON structure is as follows:

```
{
  "result": 0,                      // returned Status
  "name": "Ultra...",               // device name
  "passwd": 1,                      // whether a password is needed for mobile app
  "is-settings": 0,                 // whether modifications of device can be made using mobile app
  "is-ssdp": 1,                     // whether to enable UPNP
  "is-startup-rec": 1,              // whether to start recording when device is boot up
  "is-startup-live": 1,             // whether to start broadcasting when device is boot up
  "is-signal-lost": 0,              // whether to stop recording and broadcasting when signal is lost
  "is-hdmi-rec-ctrl": 0,            // whether to allow that digital cameral or other device can control the streame
r to start/stop recording by the feeding HDMI signal.
  "is-auto-send-file": 0,           // whether to upload files in SD card automatically
  "is-check-update": 0,             // whether to check new firmware automatically
  "is-auto-rec": 0,                 // whether to start recording automatically when input signal is locked
  "is-auto-live": 0,                // whether to lock live streaming
  "is-low-latency" 0,               // whether to use low latency during live streaming
  "enable-key-reset": 0,            // whether to use the "LIVE" key to reset all settings to default values
  "enable-key-reboot": 0,           // whether to use the "REC" key to rebooting
  "audio-sync-offset": 20,          // audio offset
  "softap": {},                     // AP configurations
  "date-time": {},                  // time zone and date
  "rec-control": {},                // recording configurations
  "video-color": {},                // video information
  "volume": {},                     // audio information
  "rec-stream": 0,                  // type of recording streams
  "live-stream": 0,                 // type of live streams
  "mws-stream": 1,                  // type of preview stream in app client
  "main-stream": {},                // configurations of the main stream
  "sub-stream": {},                 // configurations of the sub stream
  "audio": {},                      // configurations of audio
  "eth": {},                        // Ethernet information
  "wifi": {},                       // Wi-Fi information
  "stream-server": [...]            // streaming server list
  "send-file-cloud": [...],         // upload servers list
  "video-input-format": {},         // input video format
  "video-output-format": {},        // output video format
  "use-nosignal-file": 1,           // whether to show an image when there is no input signal
  "nosignal-files": [...]           // list of no signal images
}
```

Request Body:

```
{
  "result": 0,
  "name": "Ultra Stream C301191111100",
  "passwd": 0,
  "is-settings": 1,
  "is-ssdp": 1,
  "is-signal-lost": 0,
  "is-hdmi-rec-ctrl": 0,
  "is-auto-send-file": 0,
  "is-auto-rec": 0,
  "is-low-latency": 0,
  "is-auto-live": 0,
  "is-check-update": 1,
  "audio-sync-offset": 0,
  "enable-key-reset": 1,
  "enable-key-reboot": 1,
  "softap": {
    "is-softap": 1,
    "is-visible": 1,
    "softap-ssid": "C301181214002",
    "softap-passwd": "81214002"
  },
  "date-time": {
    "timezone": "UTC",
    "is-auto": 1
  },
  "rec-control": {
    "mime-type": 0,
    "usb-option": 1,
    "sd-option": 1,
    "root-folder": "REC_Folder",
    "file-prefix": "VID",
    "time-unit": 5,
  },
  "video-color": {
    "contrast": 100,
    "brightness": 0,
    "saturation": 100,
    "hue": 0
  },
  "volume": {
    "is-mic": 1,
    "mic-gain": 0,
    "is-spi": 1,
    "spi-gain": 0,
    "is-phone": 1,
    "phone-gain": 0
  },
  "rec-stream": 0,
  "live-stream": 0,
  "mws-stream": 1,
  "main-stream": {
    "is-auto": 0,
    "codec": 0,
    "cx": 1920,
    "cy": 1080,
    "duration": 166667,
    "kbps": 4096,
    "gop": 1,
    "fourcc": 0,
    "profile": 2,
```

```
    "cbrstat": 60,
    "fullrange": 0
  },
  "sub-stream": {
    "cx": 1024,
    "cy": 768,
    "duration": 333333,
    "kbps": 1024,
    "gop": 1,
    "fourcc": 0,
    "profile": 2,
    "cbrstat": 60,
    "fullrange": 1
  },
  "audio": {
    "sample-rate": 48000,
    "channels": 2,
    "kbps": 128
  },
  "eth": {
    "is-dhcp": 1,
    "ip": "",
    "mask": "",
    "router": "",
    "dns": ""
  },
  "wifi": {
    "is-dhcp": 1,
    "ip": "",
    "mask": "",
    "router": "",
    "dns": ""
  },
  "stream-server": [
    {
      "id": 0,
      "type": 0,
      "url": "192.168.1.123:345/live",
      "key": "aa",
      "is-auth": 0,
      "user": "",
      "passwd": "",
      "is-use": 0,
      "token": "",
      "net-mode": 1,
      "name": "192.168.1.123"
    }
  ],
  "send-file-cloud": [
    {
      "id": 0,
      "is-use": 1,
      "type": 2,
      "account-id":  "dbid:AABnr7BK6RO5Plz5qH2508Eu95LI2-Lpcsc",
      "photo-path": "",
      "user-name": "qin qiu",
      "access-token": "",
      "refresh-token": ",
      "dir-name": "()",
      "net-mode": 2
    }
  ],
```

```
  "video-input-format": {
    "is-color-fmt": 0,
    "color-fmt": 1,
    "is-quant-range": 0,
    "quant-range": 1
  },
  "video-output-format": {
    "is-color-fmt": 0,
    "color-fmt": 3,
    "is-quant-range": 0,
    "quant-range": 2,
    "is-sat-range": 0,
    "sat-range": 2
  },
  "use-nosignal-file": 1,
  "nosignal-files": [
    {
      "id": 0,
      "is-use": 0,
      "is-edit": 0,
      "file-path": "/no-signal/default0.jpg",
      "time": 0
    },
    {
      "id": 1,
      "is-use": 1,
      "is-edit": 0,
      "file-path": "/no-signal/default1.jpg",
      "time": 0
    }
  ]
}
```

start-rec

Use the interface to start recording.

You can call stop-rec to stop the session.

HTTP Request

```
GET http://ip/usapi?method=start-rec
```

Parameter	Description
method	start-rec

Response Body

```
{
  "result": 0
}
```

Item	Description
result	0 indicates that the request was accepted successfully. Refer to API Status Codes to find specific description for other values.

stop-rec

Use the interface to stop recording.

HTTP Request

```
GET http://ip/usapi?method=stop-rec
```

Parameter	Description
method	stop-rec

Response Body

```
{
  "result": 0
}
```

Item	Description
result	Indicates returned status. 0 indicates that the request was accepted successfully. Refer to API Status Codes to find specific description for other values.

start-live

Use the interface to start broadcasting.

You can call stop-live to stop the session.

HTTP Request

```
GET http://ip/usapi?method=start-live
```

Parameter	Description
method	start-live

Response Body

```
{
  "result": 0
}
```

Item	Description
result	0 indicates that the request was accepted successfully. Refer to API Status Codes to find specific description for other values.

stop-live

Use the interface to stop live broadcasting.

HTTP Request

```
GET http://ip/usapi?method=stop-live
```

Parameter	Description
method	stop-live

Response Body

```
{
  "result": 0
}
```

Item	Description
result	Indicates returned status. 0 indicates that the request was accepted successfully. Refer to API Status Codes to find specific description for other values.

ping

Use the interface to detect whether the device is accessible without login.

This function is used to ensure that the device has restarted completely after `firmware update`, `reset all settings` or `change IP address`.

HTTP Request

```
GET http://ip/usapi?method=ping
```

Parameter	Description
method	ping

Response Body

```
{
  "result": 0,
  "cur-status": 65552
}
```

Item	Description
result	0 indicates the device is ready. Refer to API Status Codes to find specific description for other values.
cur-status	Indicates current mask of running status. Refer to Device Status Mask to find specific description for each value.

get-signal-info

Use the interface to obtain the information of input audio and video signals.

HTTP Request

```
GET http://ip/usapi?method=get-signal-info
```

Parameter	Description
method	get-signal-info

Response Body

```
{
  "result": 0
}
```

Item	Description
result	0 indicates that the request was accepted successfully. Refer to API Status Codes to find specific description for other values.

clear-rec

Use the interface to set device state to the initial status (retInit=27) after starting recording.

HTTP Request

```
GET http://ip/usapi?method=clear-rec
```

Parameter	Description
method	clear-clear-rec

Response Body

```
{
  "result": 0
}
```

Item	Description
result	0 indicates that the request was accepted successfully. Refer to API Status Codes to find specific description for other values.

clear-live

Use the interface to set the device state to the initial status(retInit=27) after starting a live broadcast.

HTTP Request

```
GET http://ip/usapi?method=clear-live
```

Parameter	Description
method	clear-live

Response Body

```
{
  "result": 0
}
```

Item	Description
result	0 indicates that the request was accepted successfully. Refer to API Status Codes to find specific description for other values.

get-report

Use the interface to check device information, status and configuration files.

HTTP Request

```
GET http://ip/usapi?method=get-report
```

Parameter	Description
method	get-report

Response Body

```
{
  <div class="report-summary">
  ...
  <h2>DEVICE</h2>
  ...
  <h2>STATUS</h2>
  ...
  <h2>SETTINGS</h2>
  ...
  </div>
}
```

export-report

Use the interface to export a .html file including device information, status and configuration files.

HTTP Request

```
GET http://ip/usapi?method=export-report&file-name=...
```

Parameter	Description
method	export-report
file-name	Path for exported file.

Response Body

```
{
  "result": 0
}
```

Item	Description
result	0 indicates that the request was accepted successfully. Refer to API Status Codes to find specific description for other values.

set-name

Use the interface to set device name.

HTTP Request

```
GET http://ip/usapi?method=set-name&name=xxx
```

Parameter	Description
method	set-name
name	Indicates the string of device name ranges from 1 to 32 characters, which should contain A to Z, a to z, 0 to 9, spaces ._-+'[](), and cannot start or end with space.

Response Body

```
{
  "result": 0
}
```

Item	Description
result	0 indicates that the request was accepted successfully. Refer to API Status Codes to find specific description for other values.

set-app-settings

Use the interface to configure whether user can change settings using app.

HTTP Request

```
GET http://ip/usapi?method=set-app-settings&is-settings=0
```

Parameter	Description
method	set-app-settings
is-settings	Indicates whether user can change settings using app. 0 indicates it is disabled. 1 indicates user can change settings using app.

Response Body

```
{
  "result": 0
}
```

Item	Description
result	0 indicates that the request was accepted successfully. Refer to API Status Codes to find specific description for other values.

set-app-passwd

Use the interface to set or modify the password to pair app and the streamer.

HTTP Request

```
// Enable password
GET http://ip/usapi?method=set-app-passwd&is-pass=1&new-pass=xxx

// Disable password. The old password is required.
GET http://ip/usapi?method=set-app-passwd&is-pass=0&pass=xxx

// Modify password. The old password is required.
GET http://ip/usapi?method=set-app-passwd&is-pass=1&pass=xxx&new-pass=xxx
```

Parameter	Description
method	set-app-passwd
is-pass	Indicates the enable status of the pairing password. 0 indicates it is disabled. 1 indicates it is enabled.
pass	Indicates the MD5 encrypted old password. It is mandatory when you want to disable or modify the password.
new-pass	Indicates the MD5 encrypted new password. It is mandatory when you want to enable or modify the password.

Response Body

```
{
  "result": 0
}
```

Item	Description
result	0 indicates that the request was accepted successfully. Refer to API Status Codes to find specific description for other values.

set-first-over

Use the interface to initialize the encoder when visiting it for the first time, setting the **device name**, **passcode** and **date&time**.

Obtain current device running status mask using get-status.

```
{
  "cur-status": 65552                    // device running status mask
  ...
}
```

statusFirst(0x01) indicates the device's first boot. If **cur-status** & **statusFirst** = statusFirst, it means the streamer is on the first run.

HTTP Request

```
// Enable pairing password
GET http://ip/usapi?method=set-first-over&name=xxx&enable-passwd=1&passwd=xxx

// Disable pairing password
GET http://ip/usapi?method=set-first-over&name=xxx&enable-passwd=0
```

Parameter	Description
method	set-first-over
name	Indicates the device name which contains 1. 1 to 32 characters 2. A to Z, a to z, 0 to 9, spaces and special characters ._-+'[](), and can not start or end with space.
enable-passwd	Indicates the enable status of pairing password. 0 indicates disabled. 1 indicates enabled.
passwd	Indicates MD5 encrypted password. It is mandatory when enable-passwd = 1.
timezone	Indicates the timezone, such as Asia/Shanghai. For detailed information, refers to set-date-timeset-date-time.md
is-auto	Indicates whether to synchronize time automatically. 0 indicates to set time manually. 1 indicates to set time automatically.
time	Indicates to set time manually. The time string forms like 2019-09-10 15:10:00. Leave the time="", when is-auto=1.

Response Body

```
{
  "result": 0
}
```

Item	Description
result	0 indicates that the request was accepted successfully. Refer to API Status Codes to find specific description for other values.

set-rec-control

> Added in V1.3

Use the interface to modify recording configurations.

Obtain ranges of recording parameters by calling get-info.

```
"rec-control": {
    "usb-option": [],       // USB recording options
    "sd-option": [],        // options of recording to SD card (device internal storage)
    "time-unit": [],        // duration list of recording file, expressed in minutes
    "file-ext": []          // file name extensions list
  }
```

HTTP Request

```
GET http://ip/usapi?method=set-rec-control&usb-option=0&sd-option=2&root-folder=xxx&file-name-mode=xxx&time-unit=5
```

Parameter	Description
method	set-rec-control
usb-option	Indicates the USB recording options. 0 indicates the USB recording is disabled. 1 indicates the USB recording is normal recording.
sd-option	Indicates the SD recording options 0 indicates SD card recording is disabled. 1 indicates SD card recording is normal recording. 2 indicates SD card recording is loop recording.
mime-type	Indicates the MIME type of recorded files. 0: mp4 1: mov
root-folder	Indicates the folder name of recorded files. The default value is `REC_Folder` . Two-level directory is supported at most, which is separated by '/', such as a/b. The folder name is case-sensitive and should contain A-Z, a-z, 0-9, spaces and special characters like ._-+'/[](). The name can not start or end with spaces or /.
file-name-mode	Prefix of the recorded file name. 0: Custom. The default value is' vid '. The characters include A-Z, a-z, 0-9, spaces ._-+'[](), and cannot start or end with spaces. 1: named after the file created time.
time-unit	Indicates the duration of recorded files in minutes. The single file should not exceed 4G, that is time-unit * recording-bit-rate <= 4G.

Response Body

```
{
  "result": 0
}
```

Item	Description
result	0 indicates that the request was accepted successfully. Refer to API Status Codes to find specific description for other values.

set-softap

> Added in V1.3

Use the interface to modify AP configurations.

HTTP Request

```
GET http://ip/usapi?method=set-softap&is-softap=0&is-visible=1&softap-ssid=xxx&softap-passwd=xxx
```

Parameter	Description
method	set-softap
is-softap	Reserved. The default value is 1.
is-visible	Reserved. The default value is 1.
softap-ssid	Reserved. The default value is the same as the product serial number.
softap-passwd	Indicates the SSID password in plain text. The string ranges from 1 to 32 characters which should contain A-Z, a-z, 0-9, spaces and special characters like ._-+'[](). The password can not start or end with spaces.

Response Body

```
{
  "result": 0
}
```

Item	Description
result	0 indicates that the request was accepted successfully. Refer to API Status Codes to find specific description for other values.

set-date-time

> Added in V1.3

Use the interface to set date & time.

HTTP Request

```
GET http://ip/usapi?method=set-date-time&timezone=Asia/Shanghai&is-auto=1&time=2019-09-10+15:00:00
```

Parameter	Description
method	set-date-time
timezone	Indicates the time zone, such as Asia/Shanghai. For details, see the Time Zones around the World
is-auto	Indicates whether to obtain time automatically. 0 indicates manual setup; 1 indicates to obtain time automatically based on time zone.
time	Indicates to set time manually in string form like 2019-09-10 15:10:00 Leave the time="", when is-auto=1.

Response Body

```
{
  "result": 0
}
```

Item	Description
result	0 indicates that the request was accepted successfully. Refer to API Status Codes to find specific description for other values.

Time Zones around the World

```
[
  'Africa/Abidjan',
  'Africa/Accra',
  'Africa/Addis_Ababa',
  'Africa/Algiers',
  'Africa/Asmara',
  'Africa/Bamako',
  'Africa/Bangui',
  'Africa/Banjul',
  'Africa/Bissau',
  'Africa/Blantyre',
  'Africa/Brazzaville',
  'Africa/Bujumbura',
  'Africa/Cairo',
  'Africa/Casablanca',
  'Africa/Ceuta',
  'Africa/Conakry',
  'Africa/Dakar',
  'Africa/Dar_es_Salaam',
  'Africa/Djibouti',
  'Africa/Douala',
  'Africa/El_Aaiun',
  'Africa/Freetown',
  'Africa/Gaborone',
  'Africa/Harare',
  'Africa/Johannesburg',
  'Africa/Juba',
  'Africa/Kampala',
  'Africa/Khartoum',
  'Africa/Kigali',
  'Africa/Kinshasa',
  'Africa/Lagos',
  'Africa/Libreville',
  'Africa/Lome',
  'Africa/Luanda',
  'Africa/Lubumbashi',
  'Africa/Lusaka',
  'Africa/Malabo',
  'Africa/Maputo',
  'Africa/Maseru',
  'Africa/Mbabane',
  'Africa/Mogadishu',
  'Africa/Monrovia',
  'Africa/Nairobi',
  'Africa/Ndjamena',
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  'Africa/Nouakchott',
  'Africa/Ouagadougou',
  'Africa/Porto-Novo',
  'Africa/Sao_Tome',
  'Africa/Timbuktu',
  'Africa/Tripoli',
  'Africa/Tunis',
  'Africa/Windhoek',
  'America/Adak',
  'America/Anchorage',
  'America/Anguilla',
  'America/Antigua',
  'America/Araguaina',
```

```
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    'America/Argentina/Catamarca',
    'America/Argentina/ComodRivadavia',
    'America/Argentina/Cordoba',
    'America/Argentina/Jujuy',
    'America/Argentina/La_Rioja',
    'America/Argentina/Mendoza',
    'America/Argentina/Rio_Gallegos',
    'America/Argentina/Salta',
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    'America/Argentina/San_Luis',
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    'America/Atikokan',
    'America/Atka',
    'America/Bahia',
    'America/Bahia_Banderas',
    'America/Barbados',
    'America/Belem',
    'America/Belize',
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    'America/Montevideo',
    'America/Montreal',
    'America/Montserrat',
    'America/Nassau',
    'America/New_York',
    'America/Nipigon',
    'America/Nome',
    'America/Noronha        Atlantic islands',
    'America/North_Dakota/Beulah',
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    'America/North_Dakota/New_Salem',
    'America/Ojinaga',
    'America/Panama',
    'America/Pangnirtung',
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    'America/Phoenix',
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    'America/Puerto_Rico',
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    'America/Rainy_River',
    'America/Rankin_Inlet',
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  'Asia/Ulan_Bator',
  'Asia/Urumqi',
  'Asia/Ust-Nera',
  'Asia/Vientiane',
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    'Australia/Victoria',
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    'Europe/Istanbul',
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    'Europe/Kaliningrad',
```

```
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    'Indian/Christmas',
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    'Pacific/Auckland',
    'Pacific/Bougainville',
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    'Pacific/Fakaofo',
    'Pacific/Fiji',
```

```
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  'Pacific/Kiritimati',
  'Pacific/Kosrae',
  'Pacific/Kwajalein',
  'Pacific/Majuro',
  'Pacific/Marquesas',
  'Pacific/Midway',
  'Pacific/Nauru',
  'Pacific/Niue',
  'Pacific/Norfolk',
  'Pacific/Noumea',
  'Pacific/Pago_Pago',
  'Pacific/Palau',
  'Pacific/Pitcairn',
  'Pacific/Pohnpei',
  'Pacific/Ponape',
  'Pacific/Port_Moresby',
  'Pacific/Rarotonga',
  'Pacific/Saipan',
  'Pacific/Samoa',
  'Pacific/Tahiti',
  'Pacific/Tarawa',
  'Pacific/Tongatapu',
  'Pacific/Truk',
  'Pacific/Wake',
  'Pacific/Wallis',
  'Pacific/Yap',
  'UTC'
]
```

set-signal-lost-ctrl

> Added in V1.3

Use the interface to set whether the recording or live broadcasting would stop automatically when the input signal is lost.

HTTP Request

```
GET http://ip/usapi?method=set-signal-lost-ctrl&is-signal-lost=0
```

Parameter	Description
method	set-signal-lost-ctrl
is-signal-lost	Indicates whether the device would stop working automatically when the input signal is lost. 0 indicates the device would not stop working automatically when the input signal is lost. 1 indicates the device would stop working automatically when the input signal is lost.

Response Body

```
{
  "result": 0
}
```

Item	Description
result	0 indicates that the request was accepted successfully. Refer to API Status Codes to find specific description for other values.

set-ssdp

> Added in V1.3

Use the interface to set whether to enable UPNP.

HTTP Request

```
GET http://ip/usapi?method=set-ssdp&is-ssdp=1
```

Parameter	Description
method	set-ssdp
is-ssdp	Indicates whether to enable UPNP. 0: disabled 1: enabled

Response Body

```
{
  "result": 0
}
```

Item	Description
result	0 indicates that the request was accepted successfully. Refer to API Status Codes to find specific description for other values.

set-auto-rec

> added in V1.3

Use the interface to set whether to start auto-recording when a input signal is locked and stop auto-recording when the signal is lost.

HTTP Request

```
GET http://ip/usapi?method=set-auto-rec&is-auto-rec=1
```

Parameter	Description
method	set-auto-rec
is-auto-rec	Indicates whether to enable auto-recording. 0: disabled 1: enabled

Response Body

```
{
  "result": 0
}
```

Item	Description
result	0 indicates that the request was accepted successfully. Refer to API Status Codes to find specific description for other values.

set-volume

> added in V1.3

Use the interface to adjust the gain of input signal, headphones, and microphone.

You can obtain the range of recording parameters using get-info.

```
"audio-range": {
    "hdmi": [],       // range of input gain
    "mic": [],        // range of microphone gain
    "phone": [],      // range of headphones gain
  }
```

Response Body

```
GET http://ip/usapi?method=set-volume&is-mic=1&mic-gain=0&is-spi=1&spi-gain=0&is-phone=1&phone-gain=0
```

Parameter	Description
method	set-volume
is-mic	Indicates whether the microphone gain adjustment is enabled. 0 indicates it is mute. 1 indicates it is enabled.
mic-gain	Indicates the microphone gain in dB. The default value is 0.
is-spi	Indicates whether the input gain adjustment is enabled. 0 indicates it is mute. 1 indicates it is enabled.
spi-gain	Indicates the input gain in dB. The default value is 0.
is-phone	Indicates whether the headphone gain adjustment is enabled. 0 indicates it is mute. 1 indicates it is enabled.
phone-gain	Indicates the headphone gain in dB. The default value is 0.

Response Body

```
{
  "result": 0
}
```

Item	Description
result	0 indicates that the request was accepted successfully. Refer to API Status Codes to find specific description for other values.

set-video-color

> added in V1.3

Use the interface to adjust the brightness, contrast, hue and saturation of the image.

You can obtain the range of recording parameters using get-info.

```
"color-range": {
    "contrast": [],       // range of contrast
    "brightness": [],     // range of brightness
    "saturation": [],     // range of saturation
    "hue": []             // range of hue
  }
```

HTTP Request

```
GET http://ip/usapi?method=set-video-color&contrast=100&brightness=0&saturation=100&hue=0
```

Parameter	Description
method	set-video-color
contrast	Indicates the contrast value. The default value is 100.
brightness	Indicates the brightness value. The default value is 0.
saturation	Indicates the saturation value. The default value is 100.
hue	Indicates the hue value. The default value is 0.

Response Body

```
{
  "result": 0
}
```

Item	Description
result	0 indicates that the request was accepted successfully. Refer to API Status Codes to find specific description for other values.

set-low-latency-live

> added in V1.3

Use the interface to specify whether to enable low latency when live Streaming.

HTTP Request

```
GET http://ip/usapi?method=set-low-latency-live&is-low-latency=1
```

Parameter	Description
method	set-low-latency-live
is-low-latency	Indicates whether low latency is enabled when live Streaming. 0 indicates it is disabled. 1 indicates it is enabled.

Response Body

```
{
  "result": 0
}
```

Item	Description
result	0 indicates that the request was accepted successfully. Refer to API Status Codes to find specific description for other values.

set-auto-live

> Added in V1.4

Use the interface to set whether to enable auto-lock live, and auto-start live when streaming server is configured with a smooth network. The live will be not manually stopped until the switch is off.

HTTP Request

```
GET http://ip/usapi?method=set-auto-live&is-auto-live=1
```

Parameter	Description
method	set-auto-live
is-auto-live	0: live unlocked 1: live locked

Response Body

```
{
  "result": 0
}
```

Item	Description
result	0 indicates that the request was accepted successfully. Refer to API Status Codes to find specific description for other values.

set-video-input-format

> Added in V1.4

Use the interface to set color space and quantization for input video.

Obtain value range for recording by calling get-info.

```
"video-format": {
    "input-color-fmt": [],       // range of color space
    "quant-range": [],           // range of quantization
  }
```

HTTP Request

```
GET http://ip/usapi?method=set-video-input-format&is-color-fmt=0&color-fmt=1&is-quant-range=0&quant-range=1
```

Parameter	Description
method	set-video-input-format
is-color-fmt	Whether to set custom color space, the default value is 0, which indicates to auto-set color space, while 1 indicates a custom setting.
color-fmt	Indicates the color format parameter value. The value range is obtained by calling get-info.
is-quant-range	Whether to set custom quantization, the default value is 0, which indicates to auto-set quantization, while 1 indicates a custom setting.
quant-range	Indicates the quantization parameter value. The value range is obtained by calling get-info.

Response Body

```
{
  "result": 0
}
```

Item	Description
result	0 indicates that the request was accepted successfully. Refer to API Status Codes to find specific description for other values.

set-video-output-format

> Added in V1.4

Use the interface to set color space and quantization for output video.

Obtain value range for recording by calling get-info.

```
"video-format": {
    "output-color-fmt": [],       // range of color space
    "quant-range": [],           // range of quantization
    "sat-range": [],             // range of saturation range
  }
```

HTTP Request

```
GET http://ip/usapi?method=set-video-output-format&is-color-fmt=0&color-fmt=1&is-quant-range=0&quant-range=1&is-sat-r
ange=0&sat-range=1
```

Parameter	Description
method	set-video-output-format
is-color-fmt	Whether to set custom color space, the default value is 0, which indicates to auto-set color space, while 1 indicates a custom setting.
color-fmt	Indicates the color format parameter value.
is-quant-range	Whether to set custom quantization, the default value is 0, which indicates to auto-set quantization, while 1 indicates a custom setting.
quant-range	Indicates the quantization parameter value.
is-sat-range	Whether to set custom saturation, the default value is 0, which indicates to auto-set saturation, while 1 indicates a custom setting.
sat-range	Indicates the saturation range. The default value is 2.

Response Body

```
{
  "result": 0
}
```

Item	Description
result	0 indicates that the request was accepted successfully. Refer to API Status Codes to find specific description for other values.

set-sync-offset

> Added in V1.3

Use the interface to set audio delay time in milliseconds. Specify a negative value in case of audio lag. Otherwise, specify a positive value when the audio is ahead.

HTTP Request

```
GET http://ip/usapi?method=set-sync-offset&audio-sync-offset=100
```

Parameter	Description
method	set-sync-offset
audio-sync-offset	Specify audio delay time from -200 to 200 milliseconds.

Response Body

```
{
  "result": 0
}
```

Item	Description
result	0 indicates that the request was accepted successfully. Refer to API Status Codes to find specific description for other values.

add-nosignal-file

> Added in V1.5

Use the interface to add JPEGs displayed when there is no signal. The JPEG image resolution should be no greater than 1920x1080, size should be no greater than 1MB. 2 images are supported.

HTTP Request

```
POST http://ip/usapi?method=add-nosignal-file
```

Parameter	Description
method	add-nosignal-file

Response Body

```
{
  "result": 0
}
```

Item	Description
result	0 indicates that the request was accepted successfully. Refer to API Status Codes to find specific description for other values.

del-nosignal-file

> Added in V1.5

Use the interface to delete user uploaded no signal images. The default image cannot be deleted.

HTTP Request

```
GET http://ip/usapi?method=del-nosignal-file&id=0
```

Parameter	Description
method	del-nosignal-file
id	Image ID

Response Body

```
{
  "result": 0
}
```

Item	Description
result	0 indicates that the request was accepted successfully. Refer to API Status Codes to find specific description for other values.

set-nosignal-file

> Added in V1.5

Use the interface to show the chosen image when no signal image function is enabled and there is no signal detected.

HTTP Request

```
GET http://ip/usapi?method=set-nosignal-file&id=0
```

Parameter	Description
method	set-nosignal-file
id	Image ID

Response Body

```
{
  "result": 0
}
```

Item	Description
result	0 indicates that the request was accepted successfully. Refer to API Status Codes to find specific description for other values.

use-nosignal-file

> Added in V1.5

Use the interface to turn on/off the no signal image function.

HTTP Request

```
GET http://ip/usapi?method=use-nosignal-file&use-nosignal-file=0
```

Parameter	Description
method	use-nosignal-file
use-nosignal-file	0: Disable no signal image function. 1: Enable no signal image function.

Response Body

```
{
  "result": 0
}
```

Item	Description
result	0 indicates that the request was accepted successfully. Refer to API Status Codes to find specific description for other values.

start-format-usb

Use the interface to format the USB flash drive. The stored data cannot be recovered after formatting and the process can not be canceled.

In order to format the USB flash drive, the following conditions must be met.

- firmware update is not in progress
- neither reset nor reboot is in progress
- recording is not in progress
- USB performance test is not in progress
- USB flash drive is valid to work

Obtain mask of device status and USB status using get-status.

```
"cur-status": 65552                    // device running status mask
"usb": {
  "disk-status": 1,                    // USB status mask
  "total-size": 61638148096,
  "used-size": 97058816,
  ...
}
```

The output of `cur-status` & Device Status Mask are as follows.

Device status	Condition
Firmware update is not in progress	cur-status & statusUpgrade != statusUpgrade
Reset all settings is not in progress	cur-status & statusReset != statusReset
Reboot is not in progress	cur-status & statusReboot != statusReboot
record is not in progress	cur-status & statusRecord != statusRecord
USB performance test is not in progress	cur-status & statusDiskTest != statusDiskTest

The output of `disk-status` & USB Status is as follows.

Device status	Condition
USB is valid to work	disk-status & DiskValid = DiskValid

HTTP Request

```
GET http://ip/usapi?method=start-format-usb
```

Parameter	Description
method	start-format-usb

Response Body

```
{
  "result": 0
}
```

Item	Description
result	Returned status. 0 indicates that the USB starts to format. 1 indicates repeat request. -5 indicates USB disk is error. -9 indicates that system is busy. Refer to API Status Codes to find specific description for other values.

Format Status

Obtain **format-status** using the get-status.

```
"format-status": {
  "result": 27,
  "percent": 20,
  "client-id": ""
}
```

Item	Description
result	Returned status. 27 indicates that USB is in initial state. 2 indicates that USB is formatting. 0 indicates that the request was accepted successfully. Refer to API Status Codes to find specific description for other values.
percent	Indicates the percentage of usb format.
client-id	Reserved

Call clear-format-usb to reset the device to the initial status (retInit=27) after the USB format is completed.

start-format-sd

> Added in V1.3

Use the interface to format SD card. The data cannot be recovered after formatting and the operation can not be canceled.

The prerequisites for formatting SD card are as follows.

- firmware updating is not in progress
- resetting or rebooting the device is not in progress
- recording is not in progress
- SD card is valid to work

Obtain the following information using get-status.

```
"cur-status": 65552                    // device running status mask
"sd": {
  "disk-status": 1,                    // SD card status mask
  "total-size": 61638148096,
  "used-size": 97058816,
  ...
}
```

The outputs of `cur-status` & Device Status Mask are as follows.

Device status	Condition
Firmware updating is not in progress	cur-status & statusUpgrade != statusUpgrade
Resetting device is not in progress	cur-status & statusReset != statusReset
Rebooting device is not in progress	cur-status & statusReboot != statusReboot
Recording is not in progress	cur-status & statusRecord != statusRecord

The output of `disk-status` & Storage device status is as follows.

Device status	Condition
SD card is valid to work	disk-status & DiskValid = DiskValid

HTTP Request

```
GET http://ip/usapi?method=start-format-sd
```

Parameter	Description
method	start-format-sd

Response Body

```
{
  "result": 0
}
```

Item	Description
result	Returned status. 0 indicates that the SD card starts to format. 1 indicates repeat request. -5 indicates SD card is error. -9 indicates system is busy. Refer to API Status Codes to find specific description for other values.

Format Process Status

Obtain the **format-status** information using get-status .

```
"format-status": {
  "result": 27,
  "percent": 20,
  "client-id": ""
}
```

Item	Description
result	Returned status. 27 indicates that the device is in initial status. 2 indicates the SD format is in progress. 0 indicates that the request was accepted successfully. Refer to API Status Codes to find specific description for other values.
percent	Indicates the process of SD format.
client-id	Reserved

Call the clear-format-sd to reset the device to the initial status (retInit=27) after the SD format is completed successfully or not.

clear-format-usb

Use the interface to set the device state to the initial status (retInit=27) after formatting usb successfully or not.

HTTP Request

```
GET http://ip/usapi?method=clear-format-usb
```

Parameter	Description
method	clear-format-usb

Response Body

```
{
  "result": 0
}
```

Item	Description
result	Returned status. 0 indicates that the request was accepted successfully. Refer to API Status Codes to find specific description for other values.

clear-format-sd

> added in V1.3

Use the interface to set the device state to the initial status (retInit=27) after formatting SD card successfully or not.

HTTP Request

```
GET http://ip/usapi?method=clear-format-sd
```

Parameter	Description
method	clear-format-sd

Response Body

```
{
  "result": 0
}
```

Item	Description
result	0 indicates that the request was accepted successfully. Refer to API Status Codes to find specific description for other values.

start-test-usb

Use the interface to test whether the write speed of USB flash drive meets the requirements before recording. You can call the stop-test-usb to cancel the request during testing.

In order to test the performance of USB flash drive, the following conditions must be met.

- firmware update is not in progress
- reset and reboot is not in progress
- recording is not in progress
- USB format is not in progress
- USB performance test is not in progress
- USB is valid to work
- USB has more than 200M free space
- USB is writable

Obtain the mask of device status and USB status using get-status.

```
"cur-status": 65552          // device running status mask
"usb": {
 "disk-status": 1,          // USB status mask
 "total-size": 61638148096,
 "used-size": 97058816,
 ...
}
```

The output of `cur-status` & Device Status Mask are as follows.

Device status	Condition
Firmware update is not in progress	cur-status & statusUpgrade != statusUpgrade
Reset all settings is not in progress	cur-status & statusReset != statusReset
Reboot is not in progress	cur-status & statusReboot != statusReboot
Recording is not in progress	cur-status & statusRecord != statusRecord
USB format is not in progress	cur-status & statusFormatDisk != statusFormatDisk
USB performance test is not in progress	cur-status & statusDiskTest != statusDiskTest

The output of `disk-status` & USB Status are as follows.

Device status	Condition
USB is valid to work	disk-status & DiskValid = DiskValid
USB has more then 200 M free space	disk-status & LowSpace != LowSpace
USB is writable	disk-status & NotWrite != NotWrite

HTTP Request

```
GET http://ip/usapi?method=start-test-usb
```

Parameter	Description
method	start-test-usb

Response Body

```
{
 "result": 0
}
```

Item	Description
result	Returned status. 0 indicates that the USB starts to format. 1 indicates repeat request -5 indicates USB disk is error. -9 indicates system is busy. -16 indicates there is not enough free space on USB flash drive. Refer to API Status Codes to find specific description for other values.

The Lowest Required Write Speed

Obtain the recording configurations using get-settings.

```
"rec-stream": 0,
"main-stream": {
 "kbps": 4096,
 ...
},
"sub-stream": {
 "kbps": 1024,
 ...
}
"audio": {
 "kbps": 128
 ...
}
```

rec-stream indicates the recording stream type. 0 indicates **main-stream**, 1 indicates **sub-stream**.

The current recording requirSpeed can be calculated with the above information.

```
requirSpeed = main-stream.kbps + audio.kbps
            = (4096 Kbps + 128 Kbps)
            = 4224 Kbps / 1024 * 8
            ≈ 0.52 MB/S
```

Performance Test Status

Obtain the **disk-test** information using get-status.

```
"disk-test": {
 "read-bps": 0,
 "write-bps": 14833071,  // 14833071 bps / 1024 * 1024 ≈ 14.15 MB/S
 "percent": 3,
 "result": 2,
 "client-id": "web-session-32435088"
}
```

Item	Description
result	Returned status. 27 indicates that the device is in initial status. 5 indicates the request is canceled. 2 indicates the USB performance test is in progress. Returned status. 0 indicates that the request was accepted successfully. Refer to API Status Codes to find specific description for other values.
percent	Indicates the percentage of USB format.
read-bps	Indicates current read speed.
write-bps	Indicates current write speed. The USB disk performance is up to standard if it is above the requirSpeed.
client-id	Reserved

Call the clear-test-usb to reset the device to the initial status (retInit=27) after the performance test is completed.

stop-test-usb

Use the interface to cancel the ongoing USB performance test which is started by calling start-test-usb.

HTTP Request

```
GET http://ip/usapi?method=stop-test-usb
```

Parameter	Description
method	stop-test-usb

Response Body

```
{
  "result": 0
}
```

Item	Description
result	Returned status. 0 indicates that the request was accepted successfully. Refer to API Status Codes to find specific description for other values.

clear-test-usb

Use the interface to reset the device to the initial status (retInit=27) after the USB performance test.

HTTP Request

```
GET http://ip/usapi?method=clear-test-usb
```

Parameter	Description
method	clear-test-usb

Response Body

```
{
  "result": 0
}
```

Item	Description
result	Returned status. 0 indicates that the request was accepted successfully. Refer to API Status Codes to find specific description for other values.

get-media-files

> Added in V1.3

Use the interface to get recorded files saved in USB flash drive or SD card.

Call del-media-files to delete the obtained files.

HTTP Request

```
GET http://ip/usapi?method=get-media-files&disk-type=1&start=0&count=3
```

Parameter	Description
method	get-media-files
disk-type	Indicates the storage device. 0 indicates USB flash drive. 1 indicates SD card.
start	Indicates the start of index from 0.
count	Indicates the number of recorded files.

Response Body

```
{
  "result": 0,
  "path": "/media/disk1/REC_Folder",
  "thumbnail": "thumbnail",
  "media-files": [
    {
      "name": "VID_9.mp4",                          // video file name
      "thumbnail-name": "VID_9.mp4_1569393321",     // Thumbnail name, the default file extension is .jpg.
      "status": 1,                                  // video file status, 0 indicates the file is recording. 1 indic
ates the file is normal; 2 indicates the file is error; 3 indicates the file is lost.
      "create-time": "2019-09-25 06:35:21",         // file created time
      "size-bytes": 4025670,                        // file size in bytes
      "duration": 14480,                            // Video duration in seconds      "width": 1280,
// video width in pixels
      "height": 720,                                // video height in pixels
      "interval": 200000,                           // frame rate in FPS = 10000000 / interval
      "codec": 0                                    // code type. 0 indicates H264; 1 indicates HEVC.
    },
    ...
  ]
}
```

Item	Description
result	0 indicates that the request was accepted successfully. Refer to API Status Codes to find specific description for other values.
path	Indicates the path for recorded video clips.
thumbnail	Indicates Video thumbnail storage subdirectory, the absolute path consists: path + thumbnail.
media-files	Indicates the recorded files list.

Common Paths

Item	Format	Example
Video file path	path/name	/media/disk1/REC_Folder/VID_9.mp4
Download path	http://ip:8080/download/path/name	http://ip:8080/download/media/disk1/REC_Folder/VID_9.mp4
Thumbnail path	path/thumbnail/thumbnail-name	/media/disk1/REC_Folder/thumbnail/thumbnail-name.jpg

del-media-files

> Added in V1.3

Use the interface to batch delete the recorded files saved in USB flash or SD card(device internal storage).

HTTP Request

```
POST http://ip/usapi?method=del-media-files
```

Parameter	Description
method	del-media-files

Request Header

```
Content-Type: application/json;charset=UTF-8
```

Request Payload

```
{
  disk-type: 1,                       // storage device type. 0 indicates USB flash drive. 1 indicates SD card.
  media-files: ["VID_6_14.mp4"]       // array of file name to delete
}
```

Response Body

```
{
  "result": 0
}
```

Item	Description
result	0 indicates that the request was accepted successfully. Refer to API Status Codes to find specific description for other values.

send-file-add-server

Use the interface to add upload servers. Up to 8 sessions are supported.

HTTP Request

```
GET http://ip/usapi?method=send-file-add-server&type=xxx&net-mode=1&...
```

Parameter	Description
method	send-file-add-server
type	Server type. 0: FTP/SFTP 1: Google Drive 2: Dropbox 3: YouTube
net-mode	Network priority. 0: mobile broadband first 1: wired Ethernet first 2: Wi-Fi first
FTP/SFTP	
proto	Protocol type. 0: FTP 1: SFTP
url	Server address.
port	Server port.
dir-name	Target directory name.
encryption	FTP encryption type. 0: plaintext FTP only 1: explicit FTP over TLS 2: implicit FTP over TLS
login-type	Login type. 0: Anonymous 1: Normal
user-name	User name.
passwd	User password.
mode	Transfer mode. 0: active 1: passive
Google Drive	
account-id	Account id.
photo-path	Path for User avatar.
user-name	User name.
access-token	Access token.
refresh-token	Refresh token.
dir-name	Target directory name.
parents	Parents folder id
Dropbox	
account-id	Account id.
photo-path	Path for User avatar.
user-name	User name
access-token	Access token.
refresh-token	Refresh token.
dir-name	Target directory name.

Parameter	Description
YouTube	
account-id	Account id.
photo-path	Path for User avatar.
user-name	User name
access-token	Access token.
refresh-token	Refresh token.
privacy	Privacy

Response Body

```
{
  "result": 0
}
```

Item	Description
result	Returned status. 0 indicates that the request was accepted successfully. Refer to API Status Codes to find specific description for other values.

send-file-del-server

Use the interface to delete a server for file upload.

HTTP Request

```
GET http://ip/usapi?method=send-file-del-server&id=0
```

Parameter	Description
method	send-file-del-server
id	Server ID

Response Body

```
{
  "result": 0
}
```

Item	Description
result	Returned status. 0 indicates that the request was accepted successfully. Refer to API Status Codes to find specific description for other values.

send-file-enable-server

Use the interface to enable a server. The first added server is enabled by default. And at one time, only one server is supported to be uploaded to.

HTTP Request

```
GET http://ip/usapi?method=send-file-enable-server&id=1&is-use=1
```

Parameter	Description
method	send-file-enable-server
id	Server ID
is-use	Enable status of the server for uploading. 0: Disabled 1: Enabled

Response Body

```
{
  "result": 0
}
```

Item	Description
result	Returned status. 0 indicates that the request was accepted successfully. Refer to API Status Codes to find specific description for other values.

send-file-set-server

Use the interface to edit settings of the upload server.

HTTP Request

```
GET http://ip/usapi?method=send-file-set-server&id=xxx&type=xxx&net-mode=1&...
```

Parameter	Description
method	send-file-set-server
id	Server ID
type	Server type. 0: FTP/SFTP 1: Google Drive 2: Dropbox 3: YouTube
net-mode	Indicates the network priority. 0: Mobile broadband first 1: wired Ethernet first 2: Wi-Fi first
FTP/SFTP	
proto	Protocol type. 0: FTP 1: SFTP
url	Server address.
port	Server port.
dir-name	Target directory name.
encryption	FTP encryption type. 0: plaintext FTP only 1: explicit FTP over TLS 2: implicit FTP over TLS
login-type	Login type. 0: Anonymous 1: Normal
user-name	User name.
passwd	User password.
mode	Transfer mode. 0: active 1: passive
Google Drive	
account-id	Account id.
photo-path	Path for User avatar.
user-name	User name.
access-token	Access token.
refresh-token	Refresh token.
dir-name	Target directory name.
parents	Parents folder id
Dropbox	
account-id	Account id.
photo-path	Path for User avatar.
user-name	User name
access-token	Access token.
refresh-token	Refresh token.

Parameter	Description
dir-name	Target directory name.
YouTube	
account-id	Account id.
photo-path	Path for User avatar.
user-name	User name
access-token	Access token.
refresh-token	Refresh token.
privacy	Privacy

Response Body

```
{
  "result": 0
}
```

Item	Description
result	Returned status. 0 indicates that the request was accepted successfully. Refer to API Status Codes to find specific description for other values.

send-file-start-test-server

Use the interface to start the upload sever test. You can use send-file-stop-test-server to stop it. FTP/SFTP servers are supported.

HTTP Request

```
GET http://ip/usapi?method=send-file-start-test-server&type=xxx&net-mode=1&...
```

Parameter	Description
method	send-file-start-test-server
type	Server type. 0: FTP/SFTP 1: Google Drive 2: Dropbox 3: YouTube
net-mode	Network priority. 0: mobile broadband first 1: wired Ethernet first 2: Wi-Fi first
FTP/SFTP	
proto	Protocol type. 0: FTP 1: SFTP
url	Server address.
port	Server port.
dir-name	Target directory name.
encryption	FTP encryption type. 0: plaintext FTP only 1: explicit FTP over TLS 2: implicit FTP over TLS
login-type	Login type. 0: Anonymous 1: Normal
user-name	User name.
passwd	User password.
mode	Transfer mode. 0: active 1: passive

Response Body

```
{
  "result": 0
}
```

Item	Description
result	Returned status. 0 indicates that the request was accepted successfully. Refer to API Status Codes to find specific description for other values.

send-file-stop-test-server

Use the interface to stop the upload test. You can start a test by using send-file-start-test-server.

HTTP Request

```
GET http://ip/usapi?method=send-file-stop-test-server
```

Parameter	Description
method	send-file-stop-test-server

Response Body

```
{
  "result": 0
}
```

Item	Description
result	Returned status. 0 indicates that the request was accepted successfully. Refer to API Status Codes to find specific description for other values.

clear-test-send-file

Use the interface to reset "send-file-test" to the initial state (retInit=27) after the device conducts stream test using send-file-start-test-server.

"send-file-test" can be obtained by using get-status.

HTTP Request

```
GET http://ip/usapi?method=clear-test-send-file
```

Parameter	Description
method	clear-test-send-file

Response Body

```
{
  "result": 0
}
```

Item	Description
result	Returned status. 0 indicates that the request was accepted successfully. Refer to API Status Codes to find specific description for other values.

send-file-add

Use the interface to add files to the upload list. Files saved in SD card are now can be uploaded.

HTTP Request

```
POST http://ip/usapi?method=send-file-add
```

Parameter	Description
method	send-file-add

Request Header

```
Content-Type: application/json;charset=UTF-8
```

Request Payload

```
{
  disk-type: 1,                       // disk where files are saved. 0: USB; 1: SD card
  media-files: ["VID_6_14.mp4"]       // array of file name to be deleted
}
```

Response Body

```
{
  "result": 0
}
```

Item	Description
result	Returned status. 0 indicates that the request was accepted successfully. Refer to API Status Codes to find specific description for other values.

send-file-del

Use the interface to delete files from the upload list.

HTTP Request

```
POST http://ip/usapi?method=send-file-del
```

Parameter	Description
method	send-file-del

Request Header

```
Content-Type: application/json;charset=UTF-8
```

Request Payload

```
{
  disk-type: 1,                       // disk where files are saved. 0: USB, 1: SD card
  media-files: ["VID_6_14.mp4"]       // array of file name to be deleted
}
```

Response Body

```
{
  "result": 0
}
```

Item	Description
result	Returned status. 0 indicates that the request was accepted successfully. Refer to API Status Codes to find specific description for other values.

send-file-clear

Use the interface to clear upload list.

HTTP Request

```
GET http://ip/usapi?method=send-file-clear
```

Parameter	Description
method	send-file-clear

Response Body

```
{
  "result": 0
}
```

Item	Description
result	Returned status. 0 indicates that the request was accepted successfully. Refer to API Status Codes to find specific description for other values.

send-file-get-status

Use the interface to obtain file upload related data, such as upload list, upload process.

HTTP Request

```
GET http://ip/usapi?method=send-file-get-status&disk-type=1&start=0&count=0
```

Parameter	Description
method	send-file-get-status
disk-type	Disk where files are saved. 0: USB flash drive. 1: SD card
start	Upload index, which starts from 0.
count	The number of uploads.

Response Body

JSON structure is as follows:

```
{
  "result": 0,                    // Returned status
  "total-count-ongoing": 1,       // The number of files to be uploaded
  "total-count-done": 2,          // The number of files that has been uploaded
  "start": 0,
  "count": 10,
  "status": {}                    // upload status
  "media-files": {},              // upload list
}
```

Item	Description
result	Returned status. 0 indicates that the request was accepted successfully. Refer to API Status Codes to find specific description for other values.

send-file-set-is-auto

Use the interface to set whether to automatically upload files stored in SD card. By default, it is disabled.

HTTP Request

```
GET http://ip/usapi?method=send-file-set-is-auto&is-auto=0
```

Parameter	Description
method	send-file-set-is-auto
is-auto	0: auto upload is disabled. 1: auto upload is enabled.

Response Body

```
{
  "result": 0
}
```

Item	Description
result	Returned status. 0 indicates that the request was accepted successfully. Refer to API Status Codes to find specific description for other values.

send-file-start

Use the interface to start uploads. By default, it is enabled.

HTTP Request

```
GET http://ip/usapi?method=send-file-start
```

Parameter	Description
method	send-file-start

Response Body

```
{
  "result": 0
}
```

Item	Description
result	Returned status. 0 indicates that the request was accepted successfully. Refer to API Status Codes to find specific description for other values.

send-file-stop

Use the interface to stop uploads, including the ongoing one.

HTTP Request

```
GET http://ip/usapi?method=send-file-stop
```

Parameter	Description
method	send-file-stop

Response Body

```
{
  "result": 0
}
```

Item	Description
result	Returned status. 0 indicates that the request was accepted successfully. Refer to API Status Codes to find specific description for other values.

add-server

Use the interface to add streaming servers, 16 servers are supported at most.

Different servers with same configurations are not allowed, such as:

- Custom RTMP servers with the same URL and StreamKey
- Other RTMP servers(Twitch/YouTube/Facebook) with the same StreamKey
- RTSP streams with the same port number

HTTP Request

```
GET http://ip/usapi?method=add-server&type=xxx&url=xxx&key=xxx&...
```

Parameter	Description
method	add-server
type	Indicates server type. 0: RTMP 1: Twitch 2: YouTube 3: Facebook 100: RTSP
name	Indicates server name, the characters contain 1. 1 to 32 characters 2. A to Z, a to z, 0 to 9, spaces ._-+'[](), and cannot start or end with space.
RTMP streaming settings	
url	Indicates streaming server address.
key	Indicates stream key.
is-auth	Indicates authentication status. 0: authentication is not needed 1: authentication is needed. Username and password are required.
user	Indicates user name.
passwd	Indicates password.
token	Indicates Token.
event-data	Indicates streaming event.
net-mode	Indicates the network priority. 0: Mobile broadband first 1: wired Ethernet first 2: Wi-Fi first
RTSP streaming settings	
port	Indicates port number, the default value is 554.
is-main	Indicates whether to enable the main code stream. 0 indicates to disable the main stream. 1 indicates to enable the main stream.
main-stream-name	Indicates the main code stream name, ranging from 1 to 32 characters, including A to Z, a to z, 0 to 9, spaces, and special characters ._-+'[](). The name should not start or end withe spaces.
is-sub	Indicates whether to enable the sub code stream. 0 indicates to disable the sub stream. 1 indicates to enable the sub stream.
sub-stream-name	Indicates the sub code stream name, ranging from 1 to 32 characters, including A to Z, a to z, 0 to 9, spaces, and special characters ._-+'[](). The name should not start or end withe spaces.
is-audio	Indicates whether to enable audio. 0 indicates to disable audio. 1 indicates to enable audio.

Response Body

```
{
  "result": 0
}
```

Item	Description
result	0 indicates that the request was accepted successfully. Refer to API Status Codes to find specific description for other values.

enable-server

Use the interface to enable the added stream server where you want to post your live broadcast to. By default, the newly added server is disabled.

Stream simultaneously to 2 servers are supported at most, except the following scenarios where only one push is allowed.

- The bitrate of live broadcast is above 4 Mbps
- RTSP broadcast is selected.

HTTP Request

```
GET http://ip/usapi?method=enable-server&id=1&is-use=1
```

Parameter	Description
method	enable-server
id	Indicates the server ID
is-use	Indicates whether the server is enabled. 0 indicates the server is disabled. 1 indicates the server is enabled.

Response Body

```
{
  "result": 0
}
```

Item	Description
result	Returned status. 0 indicates that the request was accepted successfully. Refer to API Status Codes to find specific description for other values.

set-server

Use the interface to modify stream server.

HTTP Request

```
GET http://ip/usapi?method=set-server&id=xxx&type=xxx&url=xxx&key=xxx&...
```

Parameter	Description
method	set-server
type	Indicates server type. 0: RTMP 1: Twitch 2: YouTube 3: Facebook 100: RTSP
name	Indicates server name, ranging from 1 to 32 characters, including A to Z, a to z, 0 to 9, spaces, and special characters ._-+'[](). The name should not start or end with spaces.
RTMP streaming settings	
url	Indicates streaming server address.
key	Indicates stream key.
is-auth	Indicates authentication status. 0: authentication is not needed. 1: authentication is needed, requiring users to filled with username and password.
user	Indicates user name.
passwd	Indicates password.
token	Indicates Token.
event-data	Indicates streaming event.
net-mode	Indicates the network priority. 0: Mobile network first 1: wired Ethernet first 2: Wi-Fi first
RTSP streaming settings	
port	Indicates port number, the default port is 554.
is-main	Indicates whether to enable the main code stream. 0 indicates to disable the main stream. 1 indicates to enable the main stream.
main-stream-name	Indicates the main code stream name, ranging from 1 to 32 characters, including A to Z, a to z, 0 to 9, spaces, and special characters ._-+'[](). The name should not start or end with spaces.
is-sub	Indicates whether to enable the sub code stream. 0 indicates to disable the sub stream. 1 indicates to enable the sub stream.
sub-stream-name	Indicates the sub code stream name, ranging from 1 to 32 characters, including A to Z, a to z, 0 to 9, spaces, and special characters ._-+'[](). The name should not start or end with spaces.
is-audio	Indicates whether to enable audio. 0 indicates to disable audio. 1 indicates to enable audio.

Response Body

```
{
  "result": 0
}
```

Item	Description
result	Returned status. 0 indicates that the request was accepted successfully. Refer to API Status Codes to find specific description for other values.

del-server

Use the interface to delete stream servers.

HTTP Request

```
GET http://ip/usapi?method=del-server&id=1
```

Parameter	Description
method	del-server
id	Indicates the server ID.

Response Body

```
{
  "result": 0
}
```

Item	Description
result	Returned status. 0 indicates that the request was accepted successfully. Refer to API Status Codes to find specific description for other values.

start-test-server

Use the interface to start a stream test. Only one stream can be tested each time.

Call the stop-test-server to cancel the stream test manually if needed. The test will stop automatically at 20s.

HTTP Request

```
GET http://ip/usapi?method=start-test-server&type=xxx&url=xxx&key=xxx&...
```

Parameter	Description
method	start-test-server
type	Indicates server type. 0: RTMP 1: Twitch 2: YouTube 3: Facebook
url	Indicates server address.
key	Indicates the stream key.
is-auth	Indicates whether an authentication is required. 0 indicates that an authentication is not required 1 indicates that an authentication is required, and username and password are required.
user	Indicates username.
passwd	Indicates password.
token	Indicates token.
net-mode	Indicates the prime network for streaming. 0: Mobile Broadband first 1: Ethernet first 2: Wi-Fi first

Response Body

```
{
  "result": 0
}
```

Item	Description
result	Returned status. 0 indicates that a stream test is started. 1 indicates repeat request. -9 indicates that system is busy. Refer to API Status Codes to find specific description for other values.

Test Status

Obtain **living-test** by calling get-status.

```
"living-test": {
  "result": 27,
  "upload-bps": 0,
  "percent": 0,
  "net": 0,
  "client-id": ""
}
```

Item	Description
result	Returned status. 27 indicates that the device is in initial status. 5 indicates that request is canceled. 2 indicates that a stream test is in progress. 0 indicates that the request was accepted successfully. Refer to API Status Codes to find specific description for other values.
percent	Indicates the percentage of stream test.
upload-bps	Indicates the upload speed.
net	Indicates the network type.
client-id	Reserved

Call the clear-test-server to set the device to the initial status (retInit=27) after the test.

stop-test-server

Use the interface to cancel stream test after starting a test by calling start-test-server.

HTTP Request

```
GET http://ip/usapi?method=stop-test-server
```

Parameter	Description
method	stop-test-server

Response Body

```
{
  "result": 0
}
```

Item	Description
result	Returned status. 0 indicates that the request was accepted successfully. Refer to API Status Codes to find specific description for other values.

clear-test-server

Use the interface to reset the "living-test" to the initial state (retInit=27) after the device conducts stream test using start-test-server.

"living-test" status can be obtained by using get-status.

HTTP Request

```
GET http://ip/usapi?method=clear-test-server
```

Parameter	Description
method	clear-test-server

Response Body

```
{
  "result": 0
}
```

Item	Description
result	Returned status. 0 indicates that the request was accepted successfully. Refer to API Status Codes to find specific description for other values.

set-stream

Use the interface to select stream type for your sessions. Usually the performance of the main stream is better than that of the sub stream.

HTTP Request

```
GET http://ip/usapi?method=set-stream&rec=0&live=1&mws=1
```

Parameter	Description
method	set-stream
rec	Indicates the stream type used to record. 0 indicates the main stream 1 indicates the sub stream
live	Indicates the stream type used to live broadcast. 0 indicates the main stream 1 indicates the sub stream
mws	Indicates the stream type used to preview code stream in the App. 0 indicates the main stream 1 indicates the sub stream

Response Body

```
{
  "result": 0
}
```

Item	Description
result	0 indicates that the request was accepted successfully. Refer to API Status Codes to find specific description for other values.

set-video

Use the interface to configure parameters of the main and sub stream, including:

- resolution
- frame interval
- video code type: choose H264 or HEVC for the main stream. The sub stream is H264.
- encode quality
- video bit rate
- keyframe interval
- quantization range
- bit rate stats duration

Obtain ranges of parameters using get-info.

```
{
  "codec-cap": {
    "resolutions": [],          // range of resolution
    "durations": [],            // range of frame interval
    "video-codec": [],          // range of video code type
    "profile": [],              // range of H264 encoding profile
    "hevc-profile": [],         // range of HEVC encoding profile
    "video-kbps": [],           // range of video bit rate
    "gop-sec": [],              // range of keyframe interval
    "video-range": [],          // range of quantization range
    "stat-sec": []              // range of bit rate stats duration
  }
}
```

HTTP Request

```
GET http://ip/usapi?method=set-video&stream=0&is-auto=0&cx=1280&cy=720&duration=333333&kbps=1024&gop=1&fourcc=0&profile=2&cbrstat=60&fullrange=1&codec=0
```

Parameter	Description
method	set-video
stream	Indicates stream type. 0: the main stream 1: the sub stream
is-auto	Indicates whether the format of stream type follows that of input signal. The sub stream can only be set to 0. 0 indicates not to follow input, you have to custom the format for your session. 1 indicates to follow input.
cx	Indicates width of resolution dimensions in pixels.
cy	Indicates height of resolution dimensions in pixels.
duration	Indicates frame interval.
kbps	Indicates bit rate of video coding.
gop	Indicates keyframe interval.
fourcc	Reserved. The default value is 0.
codec	Indicates code type.
profile	Indicates encoding profile.
cbrstat	Indicates bit rate stats duration.
fullrange	Indicates quantization range.

Response Body

```
{
  "result": 0
}
```

Item	Description
result	0 indicates that the request was accepted successfully. Refer to API Status Codes to find specific description for other values.

set-audio

Use the interface to configure audio coding parameters.

Obtain range of audio coding bitrate using get-info.

```
{
  "codec-cap": {
    "audio-kbps": [],            // range of audio coding bitrate
  }
}
```

HTTP Request

```
GET http://ip/usapi?method=set-audio&kbps=48
```

Parameter	Description
method	set-audio
kbps	Indicates audio coding bitrate.

Response Body

```
{
  "result": 0
}
```

Item	Description
result	0 indicates that the request was accepted successfully. Refer to API Status Codes to find specific description for other values.

reboot

Use the interface to reboot device and log in again after rebooting.

The reboot process may take a few minutes. You can use ping to determine whether the restart is finished.

HTTP Request

```
GET http://ip/usapi?method=reboot
```

Parameter	Description
method	reboot

Response Body

```
{
  "result": 0
}
```

Item	Description
result	0 indicates that the request was accepted successfully. Refer to API Status Codes to find specific description for other values.

reset-all-settings

Use the interface to reset all settings back to default.

The reset process may take a few minutes, and all configuration data will be lost. After resetting, the device will restart, you can use the ping interface to check the device state.

HTTP Request

```
GET http://ip/usapi?method=reset-all-settings
```

Parameter	Description
method	reset-all-settings

Response Body

```
{
  "result": 0
}
```

Item	Description
result	0 indicates that the request was accepted successfully. Refer to API Status Codes to find specific description for other values.

set-enable-key-reset

> Added in V1.4

Use the interface to set the hotkey function of the "LIVE" button if you want to restore all parameters to defaults by pressing and holding the key for 5 seconds.

HTTP Request

```
GET http://ip/usapi?method=set-enable-key-reset&enable-key-reset=0
```

Parameter	Description
method	set-enable-key-reset
enable-key-reset	0: Disabled 1: Enabled

Response Body

```
{
  "result": 0
}
```

Item	Description
result	0 indicates that the request was accepted successfully. Refer to API Status Codes to find specific description for other values.

set-enable-key-reboot

> Added in V1.4

Use the interface to set the hotkey function of the "REC" button if you want to reboot your device by pressing and holding the key for 5 seconds.

HTTP Request

```
GET http://ip/usapi?method=set-enable-key-reboot&enable-key-reboot=0
```

Parameter	Description
method	set-enable-key-reboot
enable-key-reboot	0: Disabled 1: Enabled

Response Body

```
{
  "result": 0
}
```

Item	Description
result	0 indicates that the request was accepted successfully. Refer to API Status Codes to find specific description for other values.

login

Use the interface to log in. The cookie will carry the Session ID after you log in successfully. For example, Cookie: sid=e0f6b33dd2b575eff40733b3778beaab.

HTTP Request

```
GET http://ip/usapi?method=login&id=xxx&pass=xxx
```

Parameter	Description
method	login
id	Indicates user name.
pass	Indicates MD5 encrypted password.

Response Body

```
{
  "result": 0
}
```

Item	Description
result	0 indicates that the request was accepted successfully. 36 indicates that the username or password is incorrect. Refer to API Status Codes to find specific description for other values.

logout

Use the interface to log out and return to the "SIGN IN" page.

HTTP Request

```
GET http://ip/usapi?/usapi?method=logout
```

Parameter	Description
method	logout

Response Body

```
{
  "result": 0
}
```

Item	Description
result	0 indicates that the request was accepted successfully. Refer to API Status Codes to find specific description for other values.

get-users

Use the interface to list all users with administrative rights.

HTTP Request

```
GET http://ip/usapi?method=get-users
```

Parameter	Description
method	get-users

Response Body

```
{
  "result": 0,
  "users": [
    {
      "id": "Admin",
      "type": 1
    },
    {
      "id": "Test",
      "type": 2
    }
  ]
}
```

Item	Description
result	Returned status. 0 indicates that the request was accepted successfully. Refer to API Status Codes to find specific description for other values.
users	Indicates the user group arrays. id indicates user name. type indicates whether the user is an administrator(1) or a general user(2).

add-user

Use the interface to add general users with administrative rights.

HTTP Request

```
GET http://ip/usapi?method=add-user&id=xxx&pass=xxx
```

Parameter	Description
method	add-user
id	Indicates the user name.
pass	Indicates MD5 encrypted password.

Response Body

```
{
  "result": 0
}
```

Item	Description
result	Returned status. 0 indicates that the request was accepted successfully. Refer to API Status Codes to find specific description for other values.

del-user

Use the interface to delete general users with administrative rights.

HTTP Request

```
GET http://ip/usapi?method=del-user&id=xxx
```

Parameter	Description
method	del-user
id	Indicates the user name.

Response Body

```
{
  "result": 0
}
```

Item	Description
result	Returned status. 0 indicates that the request was accepted successfully. Refer to API Status Codes to find specific description for other values.

ch-password

Use the interface to create a new password after logging in with old password.

HTTP Request

```
GET http://ip/usapi?method=ch-password&pass=xxx&new-pass=xxx
```

Parameter	Description
method	ch-password
pass	Indicates MD5 encrypted old password.
new-pass	Indicates MD5 encrypted new password.

Response Body

```
{
  "result": 0
}
```

Item	Description
result	Returned status. 0 indicates that the request was accepted successfully. Refer to API Status Codes to find specific description for other values.

set-password

Use the interface to reset user password with administrative rights.

HTTP Request

```
GET http://ip/usapi?method=set-password&id=xxx&pass=xxx
```

Parameter	Description
method	set-password
id	Indicates the user name.
pass	Indicates MD5 encrypted new password.

Response Body

```
{
  "result": 0
}
```

Item	Description
result	Returned status. 0 indicates that the request was accepted successfully. Refer to API Status Codes to find specific description for other values.

set-net

Use the interface to configure Ethernet network.

HTTP Request

```
GET http://ip/usapi?method=set-net&type=0&is-dhcp=1&ip=10.10.107.212&mask=255.255.0.0&router=10.10.0.1&dns=10.0.0.3
```

Parameter	Description
method	set-net
type	0: Wi-Fi 1: wired Ethernet network
is-dhcp	Indicates whether to obtain an IP address from the DHCP server. 0 indicates to set IP address manually. 1 indicates to obtain an IP address from the DHCP server dynamically.
ip	Indicates Ethernet IP address.
mask	Indicates the subnet mask.
router	Indicates the gateway.
dns	Indicates DNS server.

Response Body

```
{
  "result": 0
}
```

Item	Description
result	0 indicates that the request was accepted successfully. Refer to API Status Codes to find specific description for other values.

disconn-wifi

Use the interface to disconnect Wi-Fi.

HTTP Request

```
GET http://ip/usapi?method=disconn-wifi
```

Parameter	Description
method	disconn-wifi

Response Body

```
{
  "result": 0
}
```

Item	Description
result	0 indicates that the request was accepted successfully. Refer to API Status Codes to find specific description for other values.

open-softap

> added in V1.3

Use the interface to turn on the device AP mode.

HTTP Request

```
GET http://ip/usapi?method=open-softap
```

Parameter	Description
method	open-softap

Response Body

```
{
  "result": 0
}
```

Item	Description
result	0 indicates that the request was accepted successfully. Refer to API Status Codes to find specific description for other values.

close-softap

> Added in V1.3

Use the interface to turn off AP mode.

HTTP Request

```
GET http://ip/usapi?method=close-softap
```

Parameter	Description
method	close-softap

Response Body

```
{
  "result": 0
}
```

Item	Description
result	0 indicates that the request was accepted successfully. Refer to API Status Codes to find specific description for other values.

update

There are two ways to perform the firmware update:

- Manual update: upload the specified firmware file using upload-update-file before update.
- Online update: use online-update-check to detect if there is a new version available.

In order to perform the firmware update:

- USB format can not be in progress.
- Firmware detect can not be in progress.

You can obtain current device running status mask using get-status.

```
"cur-status": 65552                    // device running status mask
```

The output of `cur-status` & Device Status Mask is as follows:

Device status	Condition
USB format is not in progress	cur-status & statusFormatDisk != statusFormatDisk
Firmware update is not in progress	cur-status & statusCheckUpgrade != statusCheckUpgrade

HTTP Request

```
GET http://ip/usapi?method=update&mode=xxx
```

Parameter	Description
method	update
mode	Firmware update type. upload indicates manual update. online indicates online update.

Response Body

```
{
  "result": 0
}
```

Item	Description
result	Returned status. 0 indicates the streamer begins to update. Refer to API Status Codes to find specific description for other values.

Update Status

Obtain **upgrade-status** using get-status.

```
"upgrade-status": {
  "result": 27,
  "step": 0,
  "percent": 0,
  "mode": "none",
  "client-id": ""
}
```

Item	Description
result	Indicates returned operation status. 27 indicates initial status. 2 indicates updating status. 0 indicates that the request was accepted successfully. Refer to API Status Codes to find specific description for other values.
step	Indicates update steps.
percent	Indicates the percentage of the update step.
mode	Indicates firmware update type. none: initial status. upload: manual update online: online update
client-id	Reserved.

Call clear-upgrade to reset the status to 27 (Initial status) after update failed.

upload-update-file

Use the interface to update the .mwf firmware file.

HTTP Request

```
POST http://ip/usapi?method=upload-update-file
```

Parameter	Description
method	upload-update-file

Response Body

```
{
  "status": 0,
  "up-to-date": true,
  "version": "1.1.72",
  "size": 11890776
}
```

Item	Description
status	Indicates returned status. 0 indicates that the operation is performed successfully. Refer to API Status Codes to find specific description for other values.
up-to-date	Indicates whether the current firmware is up to date. If yes, it is true; otherwise, it is false.
version	Indicates the uploaded firmware version.
size	Indicates the uploaded file size in bytes.

Call update to update the unit after a successful upload.

cancel-download

Use the interface to cancel the download process when the new firmware is being downloaded using the update for online update.

HTTP Request

```
GET http://ip/usapi?method=cancel-download
```

Parameter	Description
method	cancel-download

Response Body

```
{
  "result": 0
}
```

Item	Description
result	Indicates returned status. 0 indicates that the request was accepted successfully. Refer to API Status Codes to find specific description for other values.

online-update-check

Use the interface to online detect if there is a new firmware version.

- In order to conduct the detection for new version, a firmware update can not be in progress.

You can obtain current device running status mask using get-status:

```
"cur-status": 65552                  // device running status mask
```

The output of `cur-status` & Device Status Mask is as follows:

Device status	Condition
Firmware updat is not in progress	cur-status & statusUpgrade != statusUpgrade

HTTP Request

```
GET http://ip/usapi?method=online-update-check
```

Parameter	Description
method	online-update-check

Response Body

```
{
  "result": 0
}
```

Item	Description
result	0 indicates that the request was accepted successfully. Refer to API Status Codes to find specific description for other values.

Detection Status

Obtain **check-upgrade** and **upgrade** using get-status.

```
"check-upgrade": {
  "result": 0,
  "client-id": ""
},
"upgrade": {
  "ver": "1.2.123",
  "date": "2012-1-1 00:00:00",
  "size-byte": 12004784,
  "info": [
    {
      "version": "1.2.123",
      "changelog": "## Develop version 1.2. ## Develop version2."
    }
  ]
}
```

Item	Description
result	Indicates returned status. 27 indicates initial status 2 indicates detecting status 0 indicates that the request was accepted successfully. Refer to API Status Codes to find specific description for other values.
ver	Indicates new firmware version.
date	Indicates release date of the new firmware.
size-byte	Indicates File size of new firmware(B).
info	Indicates release note.
client-id	Reserved.

Call clear-check-update to reset the status to Initial status(27) after detection failed.

clear-upgrade

Use the interface to reset the device to the initial state (retInit=27) when the device fails to update manually or automatically using update.

HTTP Request

```
GET http://ip/usapi?method=clear-upgrade
```

Parameter	Description
method	clear-upgrade

Response Body

```
{
  "result": 0
}
```

Item	Description
result	Indicates returned status. 0 indicates that the request was accepted successfully. Refer to API Status Codes to find specific description for other values.

clear-check-update

Use the interface to reset the device to the initial state (retInit=27) when the device is detecting if there is a new firmware version using the online-update-check.

HTTP Request

```
GET http://ip/usapi?method=clear-check-update
```

Parameter	Description
method	clear-check-update

Response Body

```
{
  "result": 0
}
```

Item	Description
result	Indicates returned status. 0 indicates that the request was accepted successfully. Refer to API Status Codes to find specific description for other values.

set-enable-check-update

> Added in V1.4

Use the interface to set whether to allow the device to auto-check the new firmware version.

HTTP Request

```
GET http://ip/usapi?method=set-enable-check-update&is-check-update=1
```

Parameter	Description
method	set-enable-check-update
is-check-update	0: auto-check disabled 1: auto-check enabled

Response Body

```
{
  "result": 0
}
```

Item	Description
result	0 indicates that the request was accepted successfully. Refer to API Status Codes to find specific description for other values.

import-edid

Use the interface to import EDID to the input port.

HTTP Request

```
POST http://ip/usapi?method=import-edid
```

Parameter	Description
method	import-edid

Response Body

```
{
  "result": 0
}
```

Item	Description
result	0 indicates that the request was accepted successfully. Refer to API Status Codes to find specific description for other values.

export-edid

Use the interface to export EDID of the input port.

HTTP Request

```
GET http://ip/usapi?method=export-edid&file-name=...
```

Parameter	Description
method	export-edid
file-name	Path for exported file.

Response Body

```
{
  "result": 0
}
```

Item	Description
result	Returned status. 0 indicates that the request was accepted successfully. Refer to API Status Codes to find specific description for other values.

set-default-edid

Use the interface to restore EDID of the input port to the default value.

HTTP Request

```
GET http://ip/usapi?method=set-default-edid
```

Parameter	Description
method	set-default-edid

Response Body


```
{
  "result": 0
  "data": "AP///////wA09wEAAQAAAAEaAQOAAAB4Au6Vo1RMmSYPUFT//4AxQEVAYUBxQIGA0QDhwAEACOgAMPJwWoCwWIoAUB10AAAeAjqAGHE4LU
BYLEUAUB10AAAeAAAA/QAPlg+HPAAAAAAAAAAAAAAAA/ABNQUdFV0VMTAogICAgAWYCA1HxV2EQHwQTBRQgISJdXl9gZWZiY2QHFgMSMgl/BxUHUD0GwFc
GAF9/AWd/AINPAADiAA9uAwwAEAC4eCEQgAECAwRn2F3EAXiAA+MPAeABHYAYcRwWIFgsJQBAhGMAAJ5mIVaqUQAeMEaPMwBQHXQAAB4AAAAAAAAAAAA
zw=="
}
```


Item	Description
result	Returned status. 0 indicates that the request was accepted successfully. Refer to API Status Codes to find specific description for other values.

get-edid-config

Use the interface to obtain EDID ralated information of the input port.

HTTP Request

```
GET http://ip/usapi?method=get-edid-config
```

Parameter	Description
method	get-edid-config

Response Body


```
{
  "result": 0
  "smart-edid": 1,
  "keep-last": 0,
  "add-audio": 1,
  "limit-pixel-clock": 1,
  "data": "AP///////wA09wEAAQAAAAEaAQOAAAB4Au6Vo1RMmSYPUFT//4AxQEVAYUBxQIGA0QDhwAEACOgAMPJwWoCwWIoAUB10AAAeAjqAGHE4LU
BYLEUAUB10AAAeAAAA/QAPlg+HPAAAAAAAAAAAAAAAA/ABNQUdFV0VMTAogICAgAWYCA1HxV2EQHwQTBRQgISJdXl9gZWZiY2QHFgMSMgl/BxUHUD0GwFc
GAF9/AWd/AINPAADiAA9uAwwAEAC4eCEQgAECAwRn2F3EAXiAA+MPAeABHYAYcRwWIFgsJQBAhGMAAJ5mIVaqUQAeMEaPMwBQHXQAAB4AAAAAAAAAAAA
zw=="
}
```


Item	Description
result	Returned status. 0 indicates that the request was accepted successfully. Refer to API Status Codes to find specific description for other values.

set-edid-config

Use the interface to modify EDID related information for the input port.

HTTP Request

```
GET http://ip/usapi?method=set-edid-config&...
```

Parameter	Description
method	set-edid-config
smart-edid	0: Disable smart EDID 1: Enable smart EDID
keep-last	0: Do not use the last loop-through EDID 1: Use the last loop-through EDID
add-audio	0: Do not force add audio 1: Force add audio
limit-pixel-clock	0: Do not use limit pixel clock 1: Use limit pixel clock

Response Body

```
{
  "result": 0
}
```

Item	Description
result	Returned status. 0 indicates that the request was accepted successfully. Refer to API Status Codes to find specific description for other values.

get-loop-through-edid

Use the interface to obtain EDID of loop-through port.

HTTP Request

```
GET http://ip/usapi?method=get-loop-through-edid
```

Parameter	Description
method	get-loop-through-edid

Response Body


```
{
  "result": 0
  "data": "AP///////wA09wEAAQAAAAEaAQOAAAB4Au6Vo1RMmSYPUFT//4AxQEVAYUBxQIGA0QDhwAEACOgAMPJwWoCwWIoAUB10AAAeAjqAGHE4LU
BYLEUAUB10AAAeAAAA/QAPlg+HPAAAAAAAAAAAAAAAA/ABNQUdFV0VMTAogICAgAWYCA1HxV2EQHwQTBRQgISJdXl9gZWZiY2QHFgMSMgl/BxUHUD0GwFc
GAF9/AWd/AINPAADiAA9uAwwAEAC4eCEQgAECAwRn2F3EAXiAA+MPAeABHYAYcRwWIFgsJQBAhGMAAJ5mIVaqUQAeMEaPMwBQHXQAAB4AAAAAAAAAAAA
zw=="
}
```


Item	Description
result	Returned status. 0 indicates that the request was accepted successfully. Refer to API Status Codes to find specific description for other values.

export-loop-through-edid

Use the interface to export EDID of the loop-through port.

HTTP Request

```
GET http://ip/usapi?method=export-loop-through-edid&file-name=...
```

Parameter	Description
method	export-loop-through-edid
file-name	Path for exported file.

Response Body

```
{
  "result": 0
}
```

Item	Description
result	Returned status. 0 indicates that the request was accepted successfully. Refer to API Status Codes to find specific description for other values.

cloud-reg-ex

> Added in V1.5

Use the interface to register your device with Magewell Clouds. You can host your device to 2 cloud platforms simultaneously.

HTTP Request

```
GET http://ip:8070/cloud-api?method=cloud-reg-ex&id=1&cloud-enable-https=0&...
```

Parameter	Description
method	cloud-reg-ex
id	Cloud ID. Options are 0 and 1.
cloud-code	4-digit string invitation code given by the Cloud.
cloud-ip-addr	IP address of the Cloud.
cloud-http-port	HTTP port of the Cloud server.
cloud-enable-https	0: disable https 1: enable https
cloud-https-port	HTTPS port of the Cloud server.

Response Body

```
{
  "result": 0
}
```

Item	Description
result	0 indicates that the request was accepted successfully. Refer to Cloud API Status Codes to find specific description for other values.

cloud-unreg-ex

> Added in V1.5

Use the interface to unregistered from a Magewell Cloud.

HTTP Request

```
GET http://ip:8070/cloud-api?method=cloud-unreg-ex&id=1
```

Parameter	Description
method	cloud-reg-ex
id	Cloud ID. Options are 0 and 1.

Response Body

```
{
  "result": 0
}
```

Item	Description
result	0 indicates that the request was accepted successfully. Refer to Cloud API Status Codes to find specific description for other values.

cloud-status

> Added in V1.5

Use the interface to obtain status of the Cloud platforms that your device has registered with.

HTTP Request

```
GET http://ip:8070/cloud-api?method=cloud-status&version=1
```

Parameter	Description
method	cloud-status
version	Cloud version, should be 1.

Response Body

```
{
"device_id": "A305200908004", // serial number of your device
"number": 2,                  // number of Cloud platforms your device can register with
"version" : 1,
"result": 0,
"status": [
  {
    "cloud-code": "",
    "cloud-date": 0,
    "cloud-enable-https": 0,
    "cloud-http-port": 80,
    "cloud-https-port": 443,
    "cloud-ip-addr": "10.0.1.32",
    "cloud-reg-status": 101,
    "cloud-status": 35,
    "id": 0,
    "is-cloud-set": 1
  },
  {
    "cloud-code": "",
    "cloud-date": 0,
    "cloud-enable-https": 0,
    "cloud-http-port": 80,
    "cloud-https-port": 443,
    "cloud-ip-addr": "10.10.8.233",
    "cloud-reg-status": 103,
    "cloud-status": 35,
    "id": 1,
    "is-cloud-set": 1
  }
]

}
```

Item	Description
result	0 indicates that the request was accepted successfully. Refer to Cloud API Status Codes to find specific description for other values.