

**License plate recognition camera at
entrance and exit
HTTP POST function mode 5 Manual**

V1.4

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HttpPost processing flow

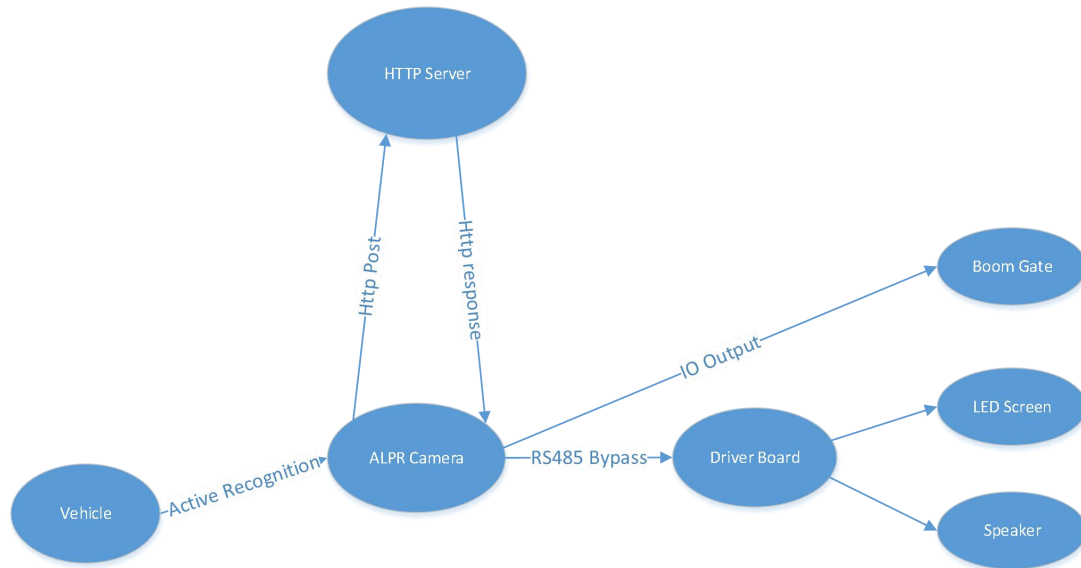


Figure 1 An Example of HTTP POST Upload Process

1 Camera parameter configuration

Device Name: unnamed
Exit/Entrance: Not Configured

IP
FTP
HTTP POST
Network Diagnostic

☒ **Enable HTTP POST**

Operating Mode: Mode5

Parking Lot ID: 0

Server Address,port,path: 0.0.0.0:80/
Sample:192.168.55.223:8200/ais
www.baidu.com:8200/ais

☐ SSL connection

Maximum Number of Transmissions 3 (1-3)

☒ Automatic Opening at the Entrance Need feedback

☒ Send Panorama Send License Plate Picture

☐ Enable Alternative Server

Alternative Server Address: 0.0.0.0

Host and Standby Server Push Mode: Host priority

☒ Resume Broken Downloads

Heartbeat Cycle: 10 S (0-30)

☒ IO event reporting

IO Type: input1

camid type MAC

Submit
Cancel
Reset

Figure 2 HttpPost Parameter Configuration Interface

Table 1 HttpPost parameter configuration item description

Parameter configuration item	Configuration description	Remarks
Turn on the http post function	enable http post function	
Working mode	Different modes represent different http post Upload protocol formats. Currently, the latest support is mode 5	Only mode 2 and mode 5 Mode 2 can still be used, but the customization of new functions is no longer supported, and mode 5 is recommended.
Parking lot ID	Used to identify different parking lots.	Mode 2 can only enter numbers; Mode 5 allows you to enter numbers and letters.
Server Address, Port, Path	Http master server network configuration and Upload path. The server address can be IP address or domain name	Examples: www.test.com:1000/ais 192.168.55.200:8000/postdir
Ssl connection	Enable connected using SSL	
Maximum number of transmissions	The maximum number of retry time when Uploading results to the Http server fails	
The entrance opens automatically.	Automatic control switch for entrance opening. After the switch is turned on, there are 3 automatic control modes available: 1)Open gate with recognition result 2)Open gate as default 3)Control by server	Open the gate if recognize a plate number, it means that the gate is opened only after the license plate is recognized. Open gate as default, which means that as long as there is a vehicle recognition, whether with licensed plate or no licensed plate, the gate will be open as default Control by server refers to the gateway opening according to the feedback result of Http server.
Send panorama photo	Enable upload the large photo .	
Send license plate photo	Enable upload plate photo	
Enable standby server	Standby (slave) server	
Alternate server address	Http standby server address, can only enter the IP address of the standby server, does not support the domain name method, at the same time do not need to enter the port and upload path, the port and upload path use the configuration of the main server	Examples: 192.168.55.201
Mode of primary and slave servers	There are two types: 1) Upload to both	Upload to both means that both primary and backup servers will

	2) Main server Priority	receive; Main server priority means only when upload to main server failed then upload to standby server.
Resume upload at network reconnection	When network is disconnect store data in SD card, and the automatically resume upload to Http server again when network reconnection.	The SD card must be plugged into the camera for this function
Heart beat package period	The interval of heartbeat package, in seconds.	Disable heartbeat: Mode 5 turns off heartbeat by setting the value to 0; Mode 2 disable [resume upload at net work].
IO Event Upload	Disable / Enable IO event upload	
IO Event Type	Select the IO event type to be uploaded	Different product models have different IO interfaces
Camid type	Camera ID Type	Mac address and uid are supported. uid may not be supported for different models.

2 Mode 5 description

2.1 Upload identification result content

2.1.1 Upload example

POST<post_path>HTTP/1.1

Host:<post_server_ip>:<post_server_port>

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

type=online&mode=5&plate_num=A12345&plate_color=blue&plate_val=true&confidence=25&car_logo=Toyota&car_color=White&van&start_time=1436509947&park_id=2&cam_id=0001aa00000d&cam_ip=192.168.55.100&vdc_type=in&is_whitelist=true&trigger_type=video&picture=<BASE64 panorama>&closeup_pic=<BASE64 number plate photo>

2.1.2 Upload Content Field Description

Field item	explain	Remarks
type	Online indicates the normal online realtime package, offline indicates the package at connection break not realtime.	
mode	Protocol mode, digital representation	Only support at mode 5.
plate_num	License plate number, UTF8 code	
plate_color	License plate background color, UTF8 code	
plate_val	False license plate information, true means true license plate, false means false license plate	
confidence	Confidence, range: 0-28	
car_logo	Vehicle Brand, UTF8 Code	
car_color	Vehicle Color, UTF8 Code	
vehicle_type	Vehicle Type, UTF8 Code	
start_time	License Plate Recognition Time, total of Seconds from 1970/01/01 to Present	
park_id	Parking lot ID, max. 60 characters	Only English and numbers are supported
cam_id	Camera ID	The camera ID is the MAC or UID according to the configuration.
cam_ip	Camera IP	
vdc_type	Type of entrance and exit, [in] means entrance and [out] means exit.	
is_whitelist	Whether it is a white list vehicle, true means in white list, false means non-white list	
trigger_type	[video] means video trigger, [hwtrigger] means loop sensor trigger, [swtrigger] means soft trigger	
picture	Panorama, BASE64 Coding	In order to prevent http transportation changing the picture code, those special character need to be replaced: '+' to '-', '/' to '_', '=' to ' '

closeup_pic	License Plate picture, BASE64 Code	In order to prevent http transportation changing the picture code, those special character need to be replaced:'+' to '-', '/' to '_', '=' to '%'
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2.2 Upload heartbeat

2.2.1 Upload example

POST<post_path>HTTP/1.1

Host:<post_server_ip>:<post_server_port>

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

type=heartbeat&mode=5&interval=10&park_id=2&cam_id=0001aa00000d&cam_ip=192.168.55.100

2.2.2 Upload Content Field Description

Field item	Description	Remarks
type	[heartbeat] indicates a heartbeat.	
mode	Protocol mode, digital representation	Only support at mode 5.
interval	Heartbeat interval, unit is second	
park_id	Parking lot ID, max. 60 characters	Only English and numbers are supported
cam_id	Camera ID	The camera ID is MAC or UID according to the configuration.
cam_ip	Camera IP	

2.3 Upload IO event

2.3.1 Upload example

POST <post_path> HTTP/1.1

Host: <post_server_ip>:<post_server_port>

Content-Type:application/x-www-form-urlencoded

Content-Length: <content_len>

type=ioinput&mode=5&park_id=2&cam_id=0001aa00000d&vehicle_type=轿车
&ionum=1&iostatus=0&start_time=1436509947

2.3.2 Upload Content Field Description

Field item	explain	Remarks
type	[ioinput] indicates IO event reporting.	
mode	Protocol mode, digital representation	Only support after mode 5.
park_id	Parking lot ID, max. 60 characters	Only English and numbers are supported
cam_id	Camera ID	The camera ID is MAC or UID according to the configuration.
vehicle_type	Vehicle Type, UTF8 Code	

ionum	Input IO port	Different types of equipment have different IO numbers and different ranges of values for input IO ports. For example, two input devices are 1-2 and four input devices are 1-4
iostatus	IO status, 0/1	
start_time	State Change Time, Number total Seconds from 1970/01/01 to Present	

2.4 Http server response

2.4.1 Http response example

```
HTTP/1.1 200
Content-Type: application/json;charset=utf-8
Content-Length: 81

{"error_num":0,"error_str":"noerror","gpio_data":[{"ionum":"io1","action":"on"}]}
```

2.4.2 An Example of JSON Content of Response Data

Note: The following example specially expands JSON format for document explanation. The actual response is compressed JSON content without line wrapping and alignment.

```
{
  "error_num":0,
  "error_str":"error info",
  "passwd":"xxxxxxx",

  "gpio_data" :
  [
    {
      "ionum":"io1",
      "action" : "on"
    }
  ],

  "rs485_data" :
  [
    {
      "encodetype" : "hex2string",
      "data" : "AA550164002600090100020043434343C5F0AF"
    },
    {
      "encodetype" : "hex2string",
      "data" : "AA551F6400220009D4C1423132333435012AA6AF"
```



```

    },
    {
        "encodetype" : "base64",
        "data" : "qIUbZAAMAAkBAAlAQ0NDQ0PF8K8="
    }
],

"triger_data" :
{
    "action" : "on"
},

"whitelist_data" :
[
    {
        "Action" : "add",
        "PlateNumber" : "粤 B12345",
        "Type" : "W",
        "Start" : "2019/01/01 00:00:00",
        "End" : "2019/12/31 23:59:59"
    },
    {
        "Action" : "add",
        "PlateNumber" : "粤 B12346",
        "Type" : "W",
        "Start" : "2019/01/01 00:00:00",
        "End" : "2019/12/31 23:59:59"
    }
]

```

2.4.3 JSON Content of Response Data

Field item	Type	Required	explain	Remarks
error_num	int	is	Error code, 0 indicates no error, others indicate error	Error Code Customer Customization
error_str	string	is	Error code description	The instructions are customized by the customer.
passwd	string	no	Password	
gpio_data		no	Gate Open GPIO data	
ionum	string	no	Output IO port, "io1" is used for fixed for gate open	
action	string	no	Output action, "on" is to open the gate	
rs485_data		no	RS485 bypass transmission data	
encodetype	string	no	encoding type of data	Hex2string encoding type is

			Hex2string: Indicates that hexadecimal data is directly converted into string Base64: Represents a string obtained by BASE64 encoding hexadecimal data directly	recommended.
data	string	no	Content field	
trigger_data		no	Software trigger data	
action	string	no	Soft trigger action, "on" is trigger	
whitelist_data		no	Whitelist data	
Action	string	no	White list action. Add: means to add white list; Update: Indicates to change the white list; Delete: means to delete the white list; DeleteAll: means to clear the white list.	
PlateNumber	string	no	License plate number, UTF8 code	
Type	string	no	List type. W: white list; B: it means blacklist.	
Start	string	no	Start time. Format: "Year/Month/Day Hours: Minutes: Seconds"	
End	string	no	End time. Format: "Year/Month/Day Hours: Minutes: Seconds"	

3 HttpPost docking common problems

3.1 The Http server is ssl connected, how to make the camera support ssl

Check "ssl connection" in camera parameter configuration, and connect to Http server by default using ssl port 443.

3.2 The server cannot receive the recognition result Uploaded by the camera

There are many possible reasons, which can be checked from the following aspects:

1. http post configuration is enabled. The server network address, port and path are configured correctly.
- 2, camera and server network access is normal, whether there is an IP conflict in the local area network, and whether the camera gateway and DNS of the external network server are set correctly;
3. After the server receives the heartbeat Uploaded by the camera, it should correctly reply to the camera, otherwise the camera will enter http offline state, and the result will not be Uploaded.

3.3 How to Control Open Boom Gate

In the content of the response, add json field information that controls the boom gate, such as:

```
{"error_num":0,"error_str":"noerror","gpio_data":[{"ionum":"io1","action":"on"}]}
```

3.4 How to control the LED display screen

The server shall send the RS485 data in the protocol format to the display driver card, and send the data to the camera in the response. After the camera receives the data, it will send the data to RS485 port by bypass function.

For example, if the RS485 data to be bypass is "AA5509307208BEEF", the reply content is as follows:

```
{"error_num":0,"error_str":"noerror","rs485_data":[{"encodetype":"hex2string","data":"AA5509307208BEEF"}]}
```

3.5 Can control boomgate, LED display and voice broadcast at one time

Yes, through the combination of JSON in the response content, multiple operations can be performed at one time.

For example

The first row shows that the control data is "AA550901010707BEEF"

The second row shows that the control data is "AA550902020606BEEF"

The voice broadcast control data is "AA550603030404BEEF"

The response reads as follows:

```
{"error_num":0,"error_str":"noerror","gpio_data":[{"ionum":"io1","action":"on"}],"rs485_data":[{"encodetype":"hex2string","data":"AA550901010707BEEF"}, {"encodetype":"hex2string","data":"AA550902020606BEEF"}, {"encodetype":"hex2string","data":"AA550603030404BEEF"}]}
```

3.6 How to operate camera white list

Through the response JSON content, the camera white list can be added, modified, deleted and emptied.

Specific through the Action field distinction, operating the camera white list can be batch

operation, through JSON array way to organize all the list, reply to the camera.

Note:

White list operation, especially batch operation, will take a relatively long time for the camera to process, so it is not recommended to respond to Upload results and Upload IO events, but to issue it in response to Upload heartbeat.

3.7 How to Control Soft Trigger

Add json field information that controls soft triggering to the content content of the response, such as:

```
{"error_num":0,"error_str":"noerror","triger_data":{"action":"on"}}
```

After receiving the response, the camera will execute soft trigger, capture and identify.

3.8 The camera did not respond after the server responded.

After checking the package to ensure that the server did return the data to the camera, the camera did not respond, focusing on the following to check:

(1) whether the response http format is standard, it should be < http header > +<content data >, and the response format should be as follows:

The http header contains at least these 3 items: http/1.1 200, content-Type and Content-Length, which are required for http response, and there are 2 line breaks between HTTP header and Content data "\r\n\r\n".

(2) Whether the JSON format of response data is described in the protocol document.