1041Howen Hardware Communication Protocol

(H-Protocol)

Version: V3.9.2

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Version log

|  |  |  |
| --- | --- | --- |
| Ver. | Description | Date |
| V3.8.13 | 1.4 Modify illustration: Media interaction process:  2.12.7 Add: Notification of File transmission Status  2.16 Modify: Instructions for getting module status  2.4.13 Get the specified module log  4.33 Remove the threshold “limit” and interval “delay”  4.29, 4.30, 6.8, 6.9 Modify parameter description and remove invalid fields | Dec 29, 2021 |
| V3.8.14 | Modify 2.8.3: Electronic fencing  Modify: type error | March 1, 2022 |
| V3.8.15 | 2.7.4, 2.7.5 Add: bit13 voltage info  2.8.3 Add: new descriptions  2.8.3 3.9 Add IO enable description  2.8.5 Add: upgrade status  2.12.6 Add: file generate notification: et  2.12.7 Add: Notification of File transmission Status  2.17.4 Add: geofence circle  3.3 add ec description  3.4 Add: ft=9  4.5 Add: description of ha\hb  4.16 Add: nodes  4.35 Add: Extend parameter  4. Modify: parameter description  7. Add parameter (Dashcam V2) | April 8, 2022 |
| V3.9.0 | 2.2.1 Distinguish H.264/H.265  2.2.2 G726 audio decoding (ffmpeg convert to g726)  2.7.4 Disk Type Description  2.7.13 Geo fence parameters preOutArea\preIntoArea  2.8.3 Types of Abnormal Fuel events  2.8.3 Geo fence Pre-entry and Pre-exit warning  2.8.3 add it type for swipe card  2.9 Support monthly calendar search  2.14.10 Log recording Duration  2.14.11 Reset Mileage  2.18 Description of driver information configuration file  3.3 Added ec=45 (video exception) | July 12, 2022 |
| 3.9.1 | 2.3.1 Add: time zone  2.8.3 Add: People counting door types, Vibration, votalge alarm, IO types, etc.  3.3 Add: file events types  3.7 Add: AI alarm types | Sep 22, 2022 |
| 3.9.2 | 2.7.4, 14 Add: OBD info  3.7.4, 16 Add: Driver  3.7.4, 17 Add: Bluetooth info  2.7.5 Add: description of status bit  2.8.3, 8 Add: subtypes for storage abnormal  2.8.3, 11 Remove: fuel units for to, fr  2.8.3, 16 Add: tire pressure  3.3 Add: event types | Jan 6, 2023 |

# Fundamental Description

## Transmission

Because of penetrability and stability of mobile network, the data interaction is based on the TCP/IP protocol. MDVR takes the initiative to connect to the server and then build the communication and business interaction with the server.

There are two types of network link: Signal link and Media link.

Notes:

1, If there is no special instruction, the data bit starts from 0.

2,The protocol adopts host byte sequence (small endian), when the business data is interacting, the related byte encoding sequence to send.

3, If there is no special instruction, the protocol loading data adopts JSON encoding rule, and all of them are using character string mode to represent.

4,The Session No.mentioned in this document usually are regenerated every time when the MDVR gets access to the sever, it is not recommended to use it repetitively to ensure the uniqueness.

5,text string transmission, if there is not special instruction, need to add ending code to be sent together, for example if you need to transmit string “ 123”, you need to send 4 bytes, refer to : 0x31 0x32 0x33 0x00, the 0x00 is the string ending code, if string is NULL, just send 0x00 ending code.

6,Json string is complete string, there is no need to split up the internal assingnment to tread it as a separate string, so only refer to item 5 rule as above when the Json string is a complete string.

## Signal Link

MDVR takes the initiative to connect to the sever and build the interaction link with sever through the locally configured sever address and port. If the network gets get disconnected, the MDVR will try to reconnect to the sever in every specific interval.

This signal link is used for basic signal control business, all the signal requests, (except for the media link which contains interacting with the business data) needs to interact through this link. For more details, please refers to the protocol description.

## Media Link

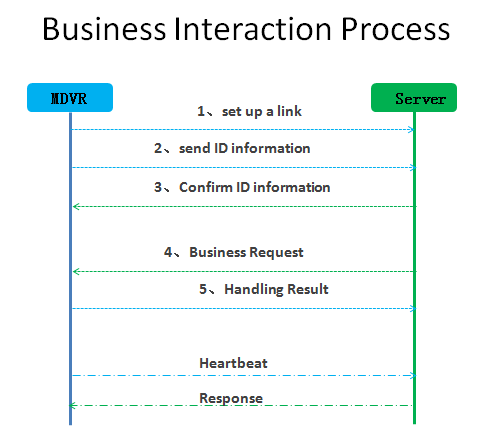
When MDVR receives the request from the signal link to rebuild the link, according to the received sever address and port, the MDVR will voluntarily try to connect to the sever.

If the network gets disconnected, the MDVR will not automatically try to connect. If reconnection is needed, then the sever will send the request according to the new business regulation.

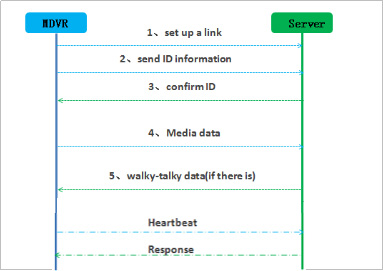
This link is used for media data transmission, such as audio video data sending to the sever, or the walky-talky data sending to the MDVR side. For more details, please refer to the protocol description.

## Interaction Process

Service interaction process:



Media interaction process:



Notes:

1, MDVR takes the initiative to send the heartbeat, and sever will respond to that, it is considered to be offline when the sever still has not received the heartbeat for 30s by default.

2, If there is other message to send, then heartbeat will not be sent. Sending heartbeat will not be calculated until there is no more data to send.

## Message Structure

### Message Components

Message header+ loading data

|  |  |  |
| --- | --- | --- |
| Items | Length | Specification |
| Message header | 8 bytes | Information header |
| Loading data | N bytes | the practical loading data |

### Message header

:

Please make sure the [loading length] of each command are accurate, otherwise the MDVR may take the command as “illegal” pack, then it will disconnect the link to Server

|  |  |  |
| --- | --- | --- |
| Data items | Length | Specification |
| ID | 1 byte | it is a fixed ‘H’ |
| Version | 1 byte | 1 the current version is 1 |
| Type | 2 bytes | Message type definition, to distinguish the message data. |
| Loading length | 4 bytes | The actual loading length, it doesn’t include the length of the current message header.  The actual entire data package length= loading length+ message header length (8 bytes) |

### Loading Data

Actual loading data, for details, please refer to the specific definition of each message.

### Rules of Defining Message Type

Bidirectional message uses the range from 0x0000 to 0x0FFF.

The message that MDVR sends to the sever uses the range from 0x1000 to 0x3FFF.

The message that server sends to the MDVR uses the range from 0x4000~0x6FFF.

All the other field are reserved for future use.

## Command List

|  |  |  |
| --- | --- | --- |
| Function | Value | Description |
| Heartbeat request | 0x0001 | [\_MDVR请求](#_MDVR请求)[refer to the description](#_MDVR_Request) |
| Media data | 0x0011 | [\_媒体数据](#_媒体数据)[refer to the description](#_Media_Data) |

**MDVR→→Server**

|  |  |  |
| --- | --- | --- |
| Function | Value | description |
| signal link registration | 0x1001 | [refer to the description](#_Signal_Link_Registration) |
| Media link registration | 0x1002 | [refer to the description](#_Media_Link_Registration) |
| live viewing respond | 0x1010 | [refer to the description](#_Preview_Response) |
| snapshot screen | 0x1020 | [refer to the description](#_Snapshot_Respond) |
| audio request | 0x1030 | [refer to the description](#_Request_Respond) |
| subscription respond for location status, | 0x1040 | [refer to the description](#_Subscription_Respond) |
| status data | 0x1041 | [refer to the description](#_Service_Data) |
| subscribe and respond for alarm | 0x1050 | [refer to the description](#_订阅应答_1) |
| alarm data | 0x1051 | [refer to the description](#_业务数据) |
| file search result | 0x1060 | [refer to the description](#_File_Result) |
| Playback request and respond | 0x1070 | [refer to the description](#_Request_Respond/) |
| Transparent transmission request and respond | 0x1080 | [refer to the description](#_请求应答_1) |
| File transmission respond | 0x1090 | [refer to the description](#_请求应答_2) |
| report for ftp file transmission | 0x1091 | [refer to the description](#_ftp_transmission_over) |
| parameter configuration | 0x40A0 | [refer to the description](#_请求应答_3) |

**MDVR←←Server:**

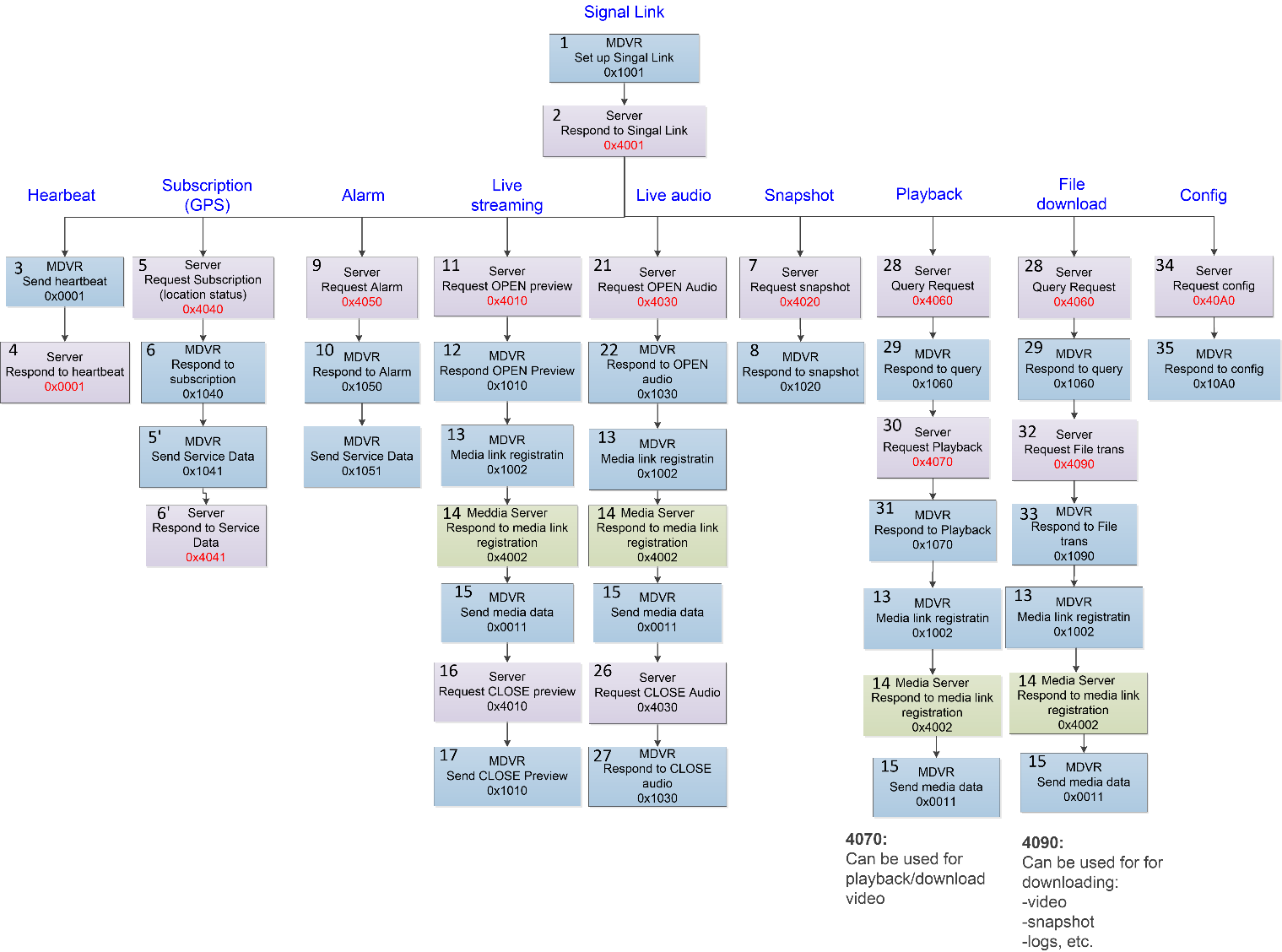
|  |  |  |
| --- | --- | --- |
| Function | Value | Description |
| signal link response | 0x4001 | [refer to the description](#_Signal_Link_Registration_1) |
| media link response | 0x4002 | [refer to the description](#_Media_Link_Registration_1) |
| live view request | 0x4010 | [refer to the description](#_Preview_Request) |
| Forced encoding I frame | 0x4011 | [refer to the description](#_Forced_Coding_I) |
| snapshot request | 0x4020 | [refer to the description](#_Snapshot_Request) |
| audio request | 0x4030 | [refer to the description](#_Audio_Request) |
| subscription request for position status | 0x4040 | [refer to the description](#_Subscription_Request) |
| alarm subscription and request | 0x4050 | [refer to the description](#_订阅请求_1) |
| file search request | 0x4060 | [refer to the description](#_Query_Request) |
| playback request | 0x4070 | [refer to the description](#_Playback_Request) |
| playback control | 0x4071 | [refer to the description](#_Play_Control) |
| transparent transmission request | 0x4080 | [refer to the description](#_Transparent_transmission_Request) |
| file transmission request | 0x4090 | [refer to the description](#_Request_to_transmit) |
| ftp file transmission request | 0x4091 | [refer to the description](#_ftp文件传输) |
| parameter configuration request | 0x40A0 | [refer to the description](#_Configration_Request) |
| PTZ control | 0x4100 | [refer to the description](#_PTZ_Control) |
| output manage | 0x4101 | [refer to the description](#_Output_Control) |
| restart | 0x4102 | [refer to the description](#_Restart) |
| upgrade |  | [refer to the description](#_Upgrade) |
| factory default setting | 0x4103 | [refer to the description](#_Factory_Default_Setting) |
| synchronization time | 0x4104 | [refer to the description](#_Synchronization_time) |
| record manager | 0x4105 | [refer to the description](#_Recording_Control) |
| clear alarm | 0x4106 | [refer to the description](#_Clear_Alarm) |
| vehicle manager | 0x4107 | [refer to the description](#_Vehicle_Control) |

## Command workflow

You can use tools like Wireshark to capture and analyzing the data that received from MDVR.

Below work flow and chart shows the logic and sequence you need to follow for the main steps.

Commands logic with sequences:



# Protocol Content

## Heartbeat

### MDVR Request

|  |  |
| --- | --- |
| Contents | Description |
| Message No. | 0x0001 |
| Direction | MDVR →→ sever |
| Link Type | signal link, media link. |
| loading data | None |

HEX example:

4801010000000000

### Sever Response

|  |  |
| --- | --- |
| Contents | Description |
| Message No. | 0x0001 |
| Direction | MDVR←←Server |
| Link Type | signal link, media link. |
| Loading data | None |

HEX example:

4801010000000000

## Media Data

The loading data in media data is using binary coding format.

|  |  |  |  |
| --- | --- | --- | --- |
| Contents | Description | | |
| Message No. | 0x0011 | | |
| Direction | MDVR→→ Server, MDVR←←Server | | |
| Link Type | Media link | | |
| Loading data | Contents | Length | Description |
| Media type | 2bytes | Refer to [Data Frame Code](#_Data_Frame_Code) |
| Channel | 2 bytes | The channel of encoder (valid in real-time video and playback replay, start from 1) |
| Time stamp | 8 bytes | The millisecond from 1970-1-1 0:0:0, the same as the time display on OSD. |
| Media data | N bytes | The corresponding ending data |

HEX example:

48011100e41e00000100010000476a78bd750500000000016742001495a85825900000000168ce3c800000000106e501b5800000000165b800000ead70bf1088e10fc2d010a366000100ead4186aad63ebcac447110c3e15e031899c0032ab3243fabc196aef586cb9456ebd317d3e06da96e85f003baacc0ce6815a66c357194770647fadef7915f8e243adfe512b8553b8504571f0fecc227be5fe22aa23f05e8371925f6b08404a30180615603719302f79d3061a5142a5fc4462ec71626bd70df5b0097724252b3bdb0460649c03a10fbdb18bb05f5cb98188beeff48630322444169ad244a668c0f9bd8015ad

......

Load data analysis:

Media type: 0x0001 (Main stream)

Channel number: 0x0001 (Means: Channel 1)

Time stamp: 0x000575bd786a4700

Confirmation message now only support serial port type.

|  |  |
| --- | --- |
| Content | Description |
| Message No. | 0x4111 |
| Link direction | MDVR ←← Server |
| Link Type | Signal link |
| Loading data | None |

### Distinguish H264/H265

When the first I frame data is received, the encoding format can be distinguished according to the first nalu type:

1. unsigned **char** type = \_frameBuffer[4];
2. // 0x01 slice 0x05 idr 0x06 sei 0x07 sps 0x08 pps
3. **if** (type == 0x40 || type == 0x42 || type == 0x44 || type == 0x4E || type == 0x26 || type == 0x02)
4. m\_encodeType = AV\_CODEC\_ID\_H265;
5. **else**
6. m\_encodeType = AV\_CODEC\_ID\_H264;

### G726 audio decoding

Compared with the standard g726, the audio data has two more bytes of header.

1. **if** (hFrameType == 0x0003) {
2. // audio frame, skip 4 byte then wirte to file
3. }
4. // ffmpeg g726 -> wav
5. ffmpeg -y -f g726le -code\_size 5 -i m072218.g726 -ar 8000 -ac 1 -f wav 1.wav
6. // ffmpeg g726 -> pcm
7. ffmpeg -y -f g726le -code\_size 5 -i m072218.g726 -ar 8000 -ac 1 -f s16le 1.pcm

## Device Registration

### Signal Link Registration Request

|  |  |  |  |
| --- | --- | --- | --- |
| Contents | Description | | |
| Message No. | 0x1001 | | |
| Direction | MDVR →→ sever | | |
| Link Type | Signal link | | |
| Loading data | adopt JSON encoding rule | | |
| Items that must be filled in | | |
| Contents | Field name | Description |
| Device numbering | dn | Device ID, for example “10011” |
| Unique ID | guid | The one and only ID, for example “01128F134D8E00FA”, (Temporarily reserved) |
| Session No. | ss | Generated by the device, for example “12FB-01DE-0001-0203” |
| Access network | at | 1—Ethernet, 2—WIFI, 3--2G, for more information, please refer to [Network Type Code](#_Network_Type_Code). |
| mobile phone number | mb |  |
| Device type | dt | 2 bytes length, the higher byte is for the channel number, such as “16384” =0x4000, of which, the 4 means the 4 channels MDVR, the other byte is reserved. “0x40000” can also be used to do the transmission. “0x8000” means: 8 channel MDVR；The lowest byte is IPC channel number. |
| Device time | dtu | 2017-01-01 00:10:11 |
| Device Time zone | gmt | i.e., +08:00;  (dtu is the value after converting by timezone) |
| Optional type | | |
| Connect to the AP | ap | The hotspot when MDVR connects to the sever in Wi-Fi mode. |
| Version | Ver | Current version of device |
|  | Device model | fw | For example, “ME 34-08”, “ ” means new model |

Loading data sample:

{

"dn": "10012",

"guid": "01128F134D8E00FA",

“ss”:” 12FB-01DE-0001-0203”,

"at": "5",

"mb": "13912346688",

“dtu”: “2017-01-01 00:10:11”,

"dt": "0x4000",

"ap": "howen-wifi-ap",

"ver": "V1.3.21",

“fw”: “ME-31-04”

}

HEX example:

48010110c80000007b226170223a22222c226174223a2231222c22646e223a223238303831313032222c226474223a22307834303030222c22647475223a22323031382d30392d31322032303a31383a3134222c2267756964223a2236423842343536372d32334336333237422d41393938334336342d3733343833333636222c226d62223a223238303831313032222c227373223a2236423842343536372d32334336333237422d41393938334336342d3733343833333636222c22766572223a22563138303832394230227d0a00

Plain text example:

HÈ{"ap":"","at":"1","dn":"28081102","dt":"0x4000","dtu":"2018-09-12 20:18:14","guid":"6B8B4567-23C6327B-A9983C64-73483366","mb":"28081102","ss":"6B8B4567-23C6327B-A9983C64-73483366","ver":"V180829B0"}

Loading data analysis:

Device number: 28081102

Unique ID: 6B8B4567-23C6327B-A9983C64-73483366

Session No.: 6B8B4567-23C6327B-A9983C64-73483366

Accessing network: 1 (LAN)

Phone Number: 28081102

Device type: 4 channel MDVR

Device time: 2018-09-12 20:18:14

Accessed AP: None (Not set)

Version: V180829B0

### Signal Link Registration Response



After the MDVR sends the signaling link registration request (0x1001), the platform server must respond (0x4001) within one minute of receiving the request (based on the actual signaling time of the MDVR), otherwise the MDVR will actively disconnect and re-initiate new signaling link registration request (0x1001).

|  |  |  |  |
| --- | --- | --- | --- |
| Content | Description | | |
| Message No. | 0x4001 | | |
| Direction | MDVR←←Server | | |
| Link Type | Signal link | | |
| Loading data | adopt JSON encoding rule | | |
| Items that must be filled in | | |
| Content | Field name | Description |
| Session No. | ss | Generated by the device, for example, “12FB-01DE-0001-0203”. |
| Error code | err | Please refer to error code table. |

Loading data sample:

{

“ss”:”12FB-01DE-0001-0203”,

"err": "0"

}

HEX example:

48010140380000007b22657272223a2230222c227373223a2236423842343536372d32334336333237422d41393938334336342d3733343833333636227d0a00

Plain text example:

H@8{"err":"0","ss":"6B8B4567-23C6327B-A9983C64-73483366"}

Loading data analysis:

Session number: 6B8B4567-23C6327B-A9983C64-73483366

Error code: 0 (means: success)

### Media Link Registration Request

|  |  |  |  |
| --- | --- | --- | --- |
| Contents | Description | | |
| Message No. | 0x1002 | | |
| Direction | MDVR →→sever | | |
| Link Type | Media link | | |
| Loading data | Adopt JASON encoding rule | | |
| Items must be filled in | | |
| Content | Field name | Description |
| Session No. | ss | Device replies to request from server: session number is generated by server;  Device sends request to server: session number is generated by device;  Example for session number:  “live\_10012\_02\_00”, in which:  10012: device ID  02: camera channel 02  00: sub stream (01: main stream) |
| Device numbering | dn | Device ID, for example “10011” |
| Access network | at | 1-Ethernet 2-WIFI 3-2G, for more information, please refer to [Network Type Code](#_Network_Type_Code). |
| Media type | mt | 1-live view 2-playback 3-audio 4-file transmission  5-serial data transparent transmission 6-Result of recording search |
| Channels | ch | Correspond with specific channel, starting from 1, 0 means no need for the channel. |
| Optional items (mt=4 – Valid in file transmission | | |
| File offset address | of | The offset address relative to the file, it is used for breakpoint transmission. |
| File type | ft | Reference [File Type Code](#_File_Type_Code) |

Loading data sample:

{

"dn": "10012",

“ss”: “live\_10012\_02\_00",

"at": "5",

"mt": "1",

“ch”:”2”

}

HEX example:

48010210490000007b226174223a2231222c226368223a2231222c22646e223a223238303831313032222c226d74223a2231222c227373223a226c6976655f32383038313130325f30315f3030227d0a00

Plain text example:

HI{"at":"1","ch":"1","dn":"28081102","mt":"1","ss":"live\_28081102\_01\_00"}

Loading data analysis:

Session No.: live\_28081102\_01\_00

Device number: 28081102

Access network: 1 (LAN)

Media type: 1 (live streaming)

Channel number: 1

### Media Link Registration Response

|  |  |  |  |
| --- | --- | --- | --- |
| Contents | Description | | |
| Message No. | 0x4002 | | |
| Direction | MDVR 🡨🡨 Server | | |
| Link Type | Media link | | |
| Loading data | Adopt JASON encoding rule | | |
| Items that must be filled in | | |
| Contents | Field name | Description |
| Session No. | ss | Device replies to request from server: session number is generated by server;  Device sends request to server: session number is generated by device;  Example for session number:  “live\_10012\_02\_00”, in which:  10012: device ID  02: camera channel 02  00: sub stream (01: main stream) |
| Error code | err | please refer to [Error Code](#_Error_Code) |
| Optional items (In register request command, mt=4 is only valid in file transmission) | | |
| File offset | of | The offset address relative to the file, it is used for breakpoint transmission. |

Loading data sample:

{

“ss”: "live\_10012\_02\_00",

"err": "0"

}

HEX example:

48010240280000007b22657272223a2230222c227373223a226c6976655f32383038313130325f30315f3030227d0a00

Plain text example:

H@({"err":"0","ss":"live\_28081102\_01\_00"}

Loading data analysis:

Session No.: live\_28081102\_01\_00

Error code: 0 (means: success)

## Live Preview

### Preview Request

:

After the MDVR is successfully registered to the platform, the heartbeat function should be processed before the platform implements the real-time preview function. Otherwise, after the platform performs the real-time preview request, the signaling link and the media link can be disconnected due to the heartbeat. The device will he disconnected and reconnected, causing the platform to mistakenly believe that MDVR can only transmit and play short-time live video streams.

|  |  |  |  |
| --- | --- | --- | --- |
| Contents | Description | | |
| Message No. | 0x4010 | | |
| Direction | MDVR←←Server | | |
| Link Type | Signal link | | |
| Loading data | Adopt JASON encoding rule | | |
| Items that must be filled in | | |
| Contents | Contents | Contents |
| Session No. | ss | Generated by the sever, for example,  “live\_10012\_02\_01”, in which:  10012: device ID  02: camera channel 02  01: main stream (00: sub stream). |
| Channel | ch | Correspond to the specific channel, starting from 1, 0 means no need for the channel. |
| Stream type | si | 0-substream 1-main stream |
| Report to the sever | srv | The sever address or domain name of sever receiving the report. For example, “www.how.com:31500”[www.how.com](http://www.how.com) is the domain name and 31500 is the port number. |
| Switch | on | 0-close, 1-open. When pt is 0, sever can close the link to stop preview. When pt = others, then this value needs to be used to close the link.  (this field is must) |
| Data frame list | fl | List of data frame in transmission. Refer to [Data Frame Code](#_Data_Frame_Code).  e.g. “1;2;3” means needing to transmit data of type1,2,3 |
| Optional items | | |
| Protocol type | pt | 0-private protocol (by default) |

Loading data sample:

{

“ss”: "live\_10012\_02\_01",

"si": "1",

"on": "1",

"fl": "1; 2; 3",

"srv": "192.168.3.210:5678",

“ch”:”2”

}

HEX example:

48011040610000007b226368223a2231222c22666c223a22313b323b333b222c226f6e223a2231222c227369223a2230222c22737276223a2233392e3130382e35392e36313a37373939222c227373223a226c6976655f32383038313130325f30315f3030227d0a00

Plain text example:

H@a{"ch":"1","fl":"1;2;3;","on":"1","si":"0","srv":"39.108.59.61:7799","ss":"live\_28081102\_01\_00"}

Loading data analysis:

Session No.: live\_28081102\_01\_00

Channel: 1

Streaming type: 0 (sub stream)

Reporting server: 39.108.59.61:7799

Switch: 1 (open)

Data frame list: 1;2;3; (Video key frame, Video non-key frame, audio frame)

:

When add [fl], please pay attention that the content must be ended up with number, not with “;”, otherwise the Server or Media Server may break the link.

Correct examples: “1;2” “1;2;3;5”

Wront examples: “1;2;” “1;8;”

### Preview Response

|  |  |  |  |
| --- | --- | --- | --- |
| Contents | Description | | |
| Message No. | 0x1010 | | |
| Direction | MDVR →→ Sever | | |
| Link Type | Signal link | | |
| Loading data | Adopt JASON encoding rule | | |
| Items that must be filled in | | |
| Contents | Contents | Contents |
| Session No. | ss | Session No.generated by the device, for example,  “live\_10012\_02\_01”, in which:  10012: device ID  02: camera channel 02  01: main stream (00: sub stream) |
| Channel | ch | Correspond to the specific channel, starting from 1, 0 means no need for the channel. |
| stream type | si | 0—sub stream, 1—mainstream |
| error code | err | Please refer to error code table |

Loading sample:

{

“ss”: “live\_10012\_02\_01”,

"si": "1",

“ch”:”2”,

“err”:”0”

}

HEX example:

480110103a0000007b226368223a2231222c22657272223a2230222c227369223a2230222c227373223a226c6976655f32383038313130325f30315f3030227d0a00

Plain text example:

H:{"ch":"1","err":"0","si":"0","ss":"live\_28081102\_01\_00"}

Loading data analysis

Session No.: live\_28081102\_01\_00

Channel: 1

Streaming type: 0 (sub stream)

Error code: 0 (success)

### Forced Coding I Frame (Not completed yet)

|  |  |
| --- | --- |
| Contents | Description |
| Message No. | 0x4011 |
| Direction | MDVR←←Server |
| Link Type | Media link |
| Loading data | None |

## Snapshot

Note: The capture data follows the video stream. If you choose the main stream video, it is the main stream snapshot. If you choose the sub-stream video, it is the sub-stream snapshot.

### Snapshot Request

|  |  |  |  |
| --- | --- | --- | --- |
| Content | Description | | |
| Message No. | 0x4020 | | |
| Direction | MDVR ←←Server | | |
| Link Type | Signal Link | | |
| Loading Data | Adopt JSON Encoding Rule | | |
| Items that must be filled in | | |
| Content | Field name | Description |
| Session No. | ss | Generated by the sever, i.e.: 12FB-01DE-0001-0203” |
| Channel list | cl | Channel list, start from 1, using “;” to split multi channels, for example “1; 2; 3” means Channel 1, Channel 2, and Channel 3 |
| Optional (default is 0, that is, when there is no res field, it follows the resolution of the video) | | |
| Snapshot resolution | res | 0: follow video resolution, 1:1080, 2:720, 4:D1 |

Loading Data Sample:

{

“ss”:”12FB-01DE-0001-0203”,

“cl”:”1;3”

“res”:”1”

}

HEX example:

48012040390000007b22636c223a22313b34222c227373223a2238354533433036452d45333634343932312d38313636383345352d4137423633344630227d0a00

Plain text example:

H @9{"cl":"1;4","ss":"85E3C06E-E3644921-816683E5-A7B634F0"}

Loading data analysis:

Session No.: 85E3C06E-E3644921-816683E5-A7B634F0

Channel: 1;4

### Snapshot Respond

|  |  |  |  |
| --- | --- | --- | --- |
| Content | Description | | |
| Message No. | ƒ | | |
| Direction | MDVR →→Server | | |
| Link Type | Signal Link | | |
| Loading Data | Adopt JSON Encoding Rule | | |
| Items that must be filled in | | |
| Content | Field name | Description |
| Session No. | ss | Generated by the sever, i.e.: 12FB-01DE-0001-0203” |
| Error Code | err | [\_错误代码](#_错误代码)Please refer to Error Code list |
| Result List | rl | Array, refer to the result List |
|  |  |  |
|  |  |  |

|  |  |  |
| --- | --- | --- |
| Result List rl (content is included in the rl) | | |
| Content | Field name | Description |
| Channel | ch | 1, Start from 1 |
| File Path | fn |  |

Loading Data Example:

{

“ss”:”12FB-01DE-0001-0203”,

“err”:”0”,

“rl”:[

{

“ch”:”1”,

“fn”:”/mnt/snap\_1.jpg”

},

{

“ch”:”2”,

“fn”:”/mnt/snap\_2.jpg”

}

]

}

Remark:

1, after the capture is completed, will determine whether the automatic upload to the server, according to the device configured ftp server address and configuration rules.

HEX example:

48012010bd0000007b22657272223a2230222c22726c223a5b7b226368223a2231222c22666e223a222f6d6e742f7364312f706963747572652f50696332303138303931333136353732303139354e30302e6a7067227d2c7b226368223a2234222c22666e223a222f6d6e742f7364312f706963747572652f50696332303138303931333136353732303731394e30332e6a7067227d5d2c227373223a2238354533433036452d45333634343932312d38313636383345352d4137423633344630227d0a00

Plain text example:

H ½{"err":"0","rl":[{"ch":"1","fn":"/mnt/sd1/picture/Pic20180913165720195N00.jpg"},{"ch":"4","fn":"/mnt/sd1/picture/Pic20180913165720719N03.jpg"}],"ss":"85E3C06E-E3644921-816683E5-A7B634F0"}

Loading data analysis:

Session No.: 85E3C06E-E3644921-816683E5-A7B634F0

Error code: 0 (success)

Result list

Channel: 1

File path: /mnt/sd1/picture/Pic20180913165720195N00.jpg

Channel: 4

File path: /mnt/sd1/picture/Pic20180913165720719N03.jpg

## Audio Operation

### Audio Request

|  |  |  |  |
| --- | --- | --- | --- |
| Content | Description | | |
| Message No. | 0x4030 | | |
| Direction | MDVR ←←Server | | |
| Link Type | Signal Link | | |
| Loading Data | JSON/ Adopt JSON Encoding Rule | | |
| Items that must be filled in | | |
| Content | Field name | Description |
| Session No. | ss | Generated by the sever, for example  “voice\_28081102\_01”, in which:  28081102:device ID  01: audio Channel 1 |
| Channel | ch | Correspond to the specific channel, starting from 1  1, intercom: temporarily the ch1 camera audio will be reported to the server, the other channels audios cannot be used as an intercom, only as listening use. Will adjust later based on hardware device (channel is invalid)  2, listening is for all channels  3, broadcast has nothing to do with the channel |
| Working Mode | wm | 0—listening, 1—intercom, 2—Broadcast, 3—PTT (not implemented yet) |
| Registered Server | srv | Registered Server IP address or Domain Name, for example” [www.how.com:31500](http://www.how.com:31500)“, the [www.how.com](http://www.how.com) is domain name, 31500 is port |
| Switch | on | 0-OFF, 1-ON, Server can shut the link and stop the real time viewing when pt is 0, if pt is xx value, then the real time viewing will be shut when pt=xx |
| optional items | | |
| Protocol Type | pt | 0—private protocol (default) |
|

Loading data Sample:

{

“ss”: “voice\_28081102\_01”,

"ch": "1",

"wm": "0",

"srv": "192.168.3.210:5678"

}

HEX example:

48013040510000007b226368223a2231222c226f6e223a2231222c22737276223a2233392e3130382e35392e36313a37373939222c227373223a22766f6963655f32383038313130325f3031222c22776d223a2231227d0a00

Plain text example:

H0@Q{"ch":"1","on":"1","srv":"39.108.59.61:7799","ss":"voice\_28081102\_01","wm":"1"}

Loading data analysis:

Session No.: voice\_28081102\_01

Channel: 1

Working mode: 1 (Intercom)

Reporting server: 39.108.59.61:7799

switch: 1 (Open)

### Request Respond

|  |  |  |  |
| --- | --- | --- | --- |
| Content | Description | | |
| Message No. | 0x1030 | | |
| Direction | MDVR →→Server | | |
| Link Type | Signal Link | | |
| Loading Data | JSON/Adopt JSON Encoding Rule | | |
| Items that must be filled in | | |
| Content | Field name | Description |
| Session No. | ss | Generated by the sever, for example  “voice\_28081102\_01”, in which:  28081102: device ID  01: audio Channel 1 |
| channel | ch | Correspond to the specific channel, starting from 1 |
| working mode | wm | 0—listening, 1—intercom, 2—Broadcast, 3—PTT (not completed yet) |
| Error Code | err | [\_错误代码](#_错误代码)Please refer to Error Code list |

Loading data Sample:

{

“ss”: “voice\_28081102\_01”,

"si": "1",

"us": "192.168.3.210:5678",

“ch”:”2”,

“err”:”0”

}

HEX example:

48013010380000007b226368223a2231222c22657272223a2230222c227373223a22766f6963655f32383038313130325f3031222c22776d223a2230227d0a00

Plain text example:

H08{"ch":"1","err":"0","ss":"voice\_28081102\_01","wm":"0"}

Loading data analysis:

Session No.: voice\_28081102\_01

Channel: 1

Working mode: 0 (Listening)

Error code: 0 (Success)

### Audio Data

[\_媒体数据](#_媒体数据)Refer to the media data

The data needs to be encoded by the G726 and then be sent to the device, otherwise the device cannot be play.

The server needs to perform G726 decoding after receiving the data, otherwise can not play.

## GPS Location Status

### Subscription Request

|  |  |  |  |
| --- | --- | --- | --- |
| Content | Description | | |
| Message No. | 0x4040 | | |
| Direction | MDVR←←Server | | |
| Link Type | Signal Link | | |
| Loading Data | JSON/Adopt JSON Encoding Rule | | |
| Content | Field name | Description |
| Session No. | ss | Generated by the sever, i.e.: 12FB-01DE-0001-0203” |
| Subscription | ct | the subscribed content is corresponded to the bit  reference [2.7.5 status context bits description](#_Status_context_bits) |
| Option |  |  |
| Upload model | rt | 0-real time priority 1-history priority 2-Gps timing transmission (0x4050 rt is invalid) (Default is 0) |

Loading Data Sample:

{

“ss”:”12FB-01DE-0001-0203”,

“ct”:”0x0F”

}

Means subscribe the below content

bit0-- location info

bit1—G-sensor

bit2-- basic status

bit3-- communication module working status

HEX example:

48014040380000007b226374223a223635353335222c227373223a227374617475732d32383038313130322d30303030303145393642444642303130227d0a00

Plain text example:

H@@8{"ct":"65535","ss":"status-28081102-000001E96BDFB010"}

Loading data analysis:

Session No.: status-28081102-000001E96BDFB010

Subscription: 65535 (Means: subscribe to all statuses)

### Subscription Respond

|  |  |  |  |
| --- | --- | --- | --- |
| Content | Description | | |
| Message No. | 0x1040 | | |
| Direction | MDVR →→Server | | |
| Link Type | Signal Link | | |
| Loading Data | JSON/Adopt JSON Encoding Rule | | |
| Content | Field name | Description |
| Session No. | ss | Generated by the sever, i.e.: 12FB-01DE-0001-0203” |
| Error Code | err | [\_错误代码](#_错误代码)please refer the Error Code list |

Loading Data Sample:

{

“ss”:”12FB-01DE-0001-0203”,

“err”:”0”

}

HEX example:

48014010350000007b22657272223a2230222c227373223a227374617475732d32383038313130322d30303030303145393642444642303130227d0a00

Plain text example:

H@5{"err":"0","ss":"status-28081102-000001E96BDFB010"}

Loading data analysis:

Session No.: status-28081102-000001E96BDFB010

Error code: 0 (success)

### Service Data

|  |  |  |  |
| --- | --- | --- | --- |
| Content | Description | | |
| Message No. | 0x1041 | | |
| Direction | MDVR 🡪🡪Server | | |
| Link Type | Signal Link | | |
| Loading Data | Binary coded format | | |
| Content | length | Description |
| Session No.length | 1 byte | including Ending mark, If the session number is empty/NULL, the session number field needs to add an Ending mark, length is 1 |
| Session No. | N byte | 1~N byte |
| Status Data | N byte | [\_状态数据\_1](#_状态数据_1)Refer to [Status Data](#_状态数据_1) |

### Status Data

#### Header Info

|  |  |  |
| --- | --- | --- |
| header info | | |
| Content | length | Description |
| Device Time | 6 bytes | Device time, each byte corresponds to year, month, date, min, second, and year = current year -2000 (PAY ATTENTION TO LITTLE ENDIAN SEQUENCE) |
| Content | 2 bytes | The contents of the following data, according to the bit corresponding to the specific content, if the bit is 0, that means no such data.  the following status definition refer to this rule, if the bit is 0, means no data  reference [2.7.5 status context bits description](#_Status_context_bits) |
|  |  |  |

#### Location Info

|  |  |  |
| --- | --- | --- |
| Location info | | |
| Content | length | description |
| info | 1 byte | bit0—direction indicator, 0—0°~180°, 1--180°~360°  bit1--longitude mark, 0--east longitude, 1--west longitude  bit2--altitude direction, 0--above sea level, 1--lower than sea level  bit3--mileage, 0--data does not exist, 1--Data exist  bit4--latitude mark, 0--north latitude, 1--south latitude  bit5~bit7: reserved |
| location type | 1 byte | 0--location invalid, 1—GPS, 2—BD, 3--GLONASS  4—AGPS, 5--base station location, 6—Wi-Fi |
| time | 6 bytes | Positioning module acquisition time, each bit corresponds to YEAR, MONTH, DATE, HOUR, MIN, SECOND, and year=current year-2000 |
| direction | 1 byte | 0~180, unit is degree (If the bit0 in information is 1, direction value add +180) |
| satellite QTY | 1 byte |  |
| Speed | 2 bytes | km/hour\*100 |
| Altitude | 2 bytes | Meter |
| positioning accuracy | 2 bytes | Multiply by 10 |
| Degree of longitude | 1byte | 0~ 180 |
| Minute of longitude | 4byte | minute\*10000 |
| Degree of latitude | 1byte | -90 ~ +90 ( remark: if the value over 90, need to be converted to negative number (lng-256)) |
| Latitude Division | 4byte | minute\*10000 |

#### Gsensor

|  |  |  |
| --- | --- | --- |
| GSensor | | |
| Content | length | description |
| Identifier bit | 1 byte | bit0-xyz acceleration (0: data not exist, 1: data exist)  bit 1-tilt (0: data not exist, 1: data exist)  bit2-impact (0: data not exist, 1: data exist)  bit3~bit7—reversed |
| X | 2byte | g\*100, (Remark : If the value’s first bit is 1, then it needs the convert decimal value minus 65536. For example, 0xFFDA[1111 1111 1101 1010]=65498, then 65498-65536=-38, the real value is -0.38. |
| Y | 2byte | g\*100, (Remark : If the value’s first bit is 1, then it needs the convert decimal value minus 65536) |
| Z | 2byte | g\*100, (Remark : If the value’s first bit is 1, then it needs the convert decimal value minus 65536 ) |
| Tilt | 2byte | g\*100, (Remark : If the value’s first bit is 1, then it needs the convert decimal value minus 65536) |
| Impact | 2byte | g\*100, Remark : If the value’s first bit is 1, then it needs the convert decimal value minus 65536 ) |

#### Basic Status

|  |  |  |
| --- | --- | --- |
| Basic Status | | |
| Content | length | description |
| Identifier bit 1 | 1 byte | bit0-ACC (0-invalid, 1-valid)  bit1-break (0-invalid, 1=valid)  bit2-turn left (0-invalid, 1-valid)  bit3-turn right (0-invaid, 1-valid)  bit4-forward (0-invalid, 1-valid)  bit5-backword (0-invalid, 1-valid)  bit6-left front door (0-Close, 1-Open)  bit7-right front door (0-close, 1-Open) |
| Identifier bit2 | 1 byte | bit0-left mid door (0-close, 1-Open)  bit1-right mid door (0-close, 1-open)  bit2-left back door (0-close, 1-open)  bit3-right back door (0-close, 1-open) |
| reverse | 2 bytes |  |

#### Module Working Status

|  |  |  |
| --- | --- | --- |
| Module Working Status | | |
| Content | length | description |
| Identifier bit | 2 bytes | bit0-mobile network (0: data not exist, 1: data exist)  bit1-location module (0:data not exist, 1:data exist)  bit2-WIFI module (0:data not exist, 1:data exist)  bit3-G-sensor (0:data not exist, 1:data exist)  bit4-recording status (0:data not exist, 1:data exist) |
| mobile network | 1 byte | 0—unknown, 1—normal, 2—abnormal,3—not exist |
| GPS location module | 1byte | 0—unknown, 1—normal, 2—abnormal, 3—not exist |
| WIFI module | 1byte | 0—unknown, 1—normal, 2—abnormal, 3—not exist |
| G-sensor | 1byte | 0—unknown, 1—normal, 2—abnormal, 3—not exist |
| Recording status | 2byte | each byte corresponds to a channel number, 0-not recording, 1-recording |

#### Fuel Consumption Status

|  |  |  |
| --- | --- | --- |
| Fuel consumption status | | |
| Identifier bit | 1 byte | bit0-fuel consumption (0: data not exist, 1: data exist)  bit1-balance fuel (0: data not exist, 1: data exist) |
| Fuel consumption | 2 bytes | Fuel consumption \*10 |
| balance fuel | 2 bytes |  |

#### Mobile Network Status

|  |  |  |
| --- | --- | --- |
| mobile network status | | |
| Content | length | description |
| Identifier bit 1 | 1byte |  |
| signal intensity | 1 byte | 0: invalid, 1~10 (strongest) |
| network type | 1 byte | please refer to 3.2 the network type list |
| reserved | 2 bytes |  |

#### WIFI network

|  |  |  |
| --- | --- | --- |
| WIFI network | | |
| Content | length | description |
| Identifier bit1 | 1 byte | bit0-signal intensity (0:data invalid, 1: data valid)  bit1-network address (0:data invalid, 1: data valid)  bit2-Gateway (0: data invalid, 1: data valid)  bit3-subnet mask (0: data invalid, 1: data valid)  bit4-SSID (0: data invalid, 1: data valid) |
| signal intensity | 1 byte | 0: invalid, 1~10 (strongest) |
| network address | 4byte | 192.168.0.1,  byte [0] =0xC0, byte [1] =0xA8, byte [2] =x000, byte [3] =0x01 |
| gateway | 4 bytes | Same as above |
| Subnet mask | 4 bytes | Same as above |
| SSID length | 1 byte | length includes terminator / ending mark |
| SSID | N byte | 1~256 byte |

#### Hard Disk Status

|  |  |  |
| --- | --- | --- |
| Hard Disk Status | | |
| Content | length | Description |
| Identifier bit | 1 byte | each bit corresponds to one group of hard disk status (0: data invalid, 1: data valid) |
| one group of hard disk data information | | |
| ID | 1 byte | 1~8  When it is > 10, it means disk type:  11--hdd1 12--hdd2 13--hdd3 14—hdd4  15—sd1 16—sd2 17—sd3 18—sd4  19—usb1 20—usb2 |
| hard disk status | 1 byte | 0--unknown, 1--recording, 2--idle, 3--abnormal, 4--full |
| hard disk size | 4 bytes | Mega Bytes |
| hard disk balance capacity | 4 bytes | Mega Bytes |

#### Alarm Status

|  |  |  |
| --- | --- | --- |
| Alarm status | | |
| Content | length | Description |
| Identifier bit | 4 bytes | bit0—video loss (0: data invalid, 1: data valid)  bit1—motion detection (0: data invalid, 1: data valid)  bit2—video blind (0: data invalid, 1: data valid)  bit3—alarm input trigger (0: data invalid, 1: data valid)  bit4—over speed alarm (0: no trigger, 1: trigger)  bit5—low speed alarm (0: no trigger, 1: trigger)  bit6—emergency alarm (0: no trigger, 1: trigger)  bit7—over time stop (0: no trigger, 1: trigger)  bit8—vibration alarm (0: no trigger, 1: trigger)  bit9—out of GEO fencing alarm (0: no trigger, 1: trigger)  bit10—enter GEO fencing alarm (0: no trigger, 1: trigger)  bit11—exit line alarm (0: no trigger, 1: trigger)  bit12-enter line alarm (0: no trigger, 1: trigger)  bit13—fuel level alarm (0: no trigger, 1: trigger) |
| video loss | 2 bytes | 1 is alarm, 0 is no alarm, bit0 is channel 1 |
| motion detection | 2 bytes | 1 is alarm, 0 is no alarm, bit0 is channel 1 |
| video blind | 2 bytes | 1 is alarm, 0 is no alarm, bit0 is channel 1 |
| alarm input trigger | 2 bytes | 1 is alarm, 0 is no alarm, bit0 is IO1 |

#### Temperature and Humidity Status (Not Implemented Yet)

|  |  |  |
| --- | --- | --- |
| Temperature and Humidity Status (Not Implemented Yet) | | |
| Content | length | Description |
| Identifier bit | 1 byte | bit0—in vehicle temperature (0: data invalid, 1: data valid)  bit1—outside of vehicle temperature (0: data invalid, 1: data valid)  bit2—motor temperature (0: data invalid, 1: data valid)  bit3—device temperature (0: data invalid, 1: data valid)  bit4—in vehicle humidity (0: data invalid, 1: data valid)  bit5—outside of vehicle humidity |
| in vehicle temperature | 2 bytes | temperature \*100 times |
| outside of vehicle temperature | 2 bytes | temperature \*100 times |
| motor temperature | 2 bytes | temperature \*100 times |
| device temperature | 2 bytes | temperature \*100 times |
| in vehicle humidity | 1 byte | percentage |
| outside of vehicle humidity | 1 byte | percentage |

#### Statistics Data

|  |  |  |
| --- | --- | --- |
| Statistics data | | |
| Content | length | Description |
| flag | 2 bytes | Bit0--mileage ,0--data not exist, 1--data exist, include total mileage and current day mileage |
| Total Mileage | 4byte | meter |
| Current day mileage | 4byte | meter |
|  |  |  |

#### iButton Status

|  |  |  |
| --- | --- | --- |
| IButton Status | | |
| Content | Length | Description |
| Identifier | 1 byte | Each bit corresponds to a set of button status, (0: invalid data, 1: valid data) |
| A set of IButton data | | |
| Number length | 1 byte |  |
| Number | N byte |  |

#### OBD Status

|  |  |  |
| --- | --- | --- |
| OBD status | | |
| Content | Length | Description |
| Number of packages | 1 byte |  |
| Length of packages | 2 bytes |  |
| OBD Single packet data V1 | | |
| Accumulated mileage | 4 bytes | km |
| Cumulative fuel consumption | 4 bytes | L |
| Instant fuel consumption | 4 bytes | \*100; L/km |
| Vehicle voltage | 2 bytes | \*100; V |
| Engine speed | 2 bytes | Rpm |
| speed | 2 bytes | \*100; Km/h |
| Intake air flow | 1 byte | G/s |
| Intake pressure | 1 byte | Kpa |
| Coolant temperature | 1 byte | ° |
| Intake air temperature | 1 byte | ° |
| Engine load | 1 byte | % |
| Throttle position | 1 byte | % |
| Remaining oil | 1 byte | % |
| OBD Single packet data V2 | | |
| Vin sign | 1. byte | 0: Not exist 1: exist |
| Vin | 32 byte | Analyze when Vin sign =1 |
| OBD Single packet data V3 | | |
| Engine status | 1 byte | 1: ON 0: OFF |
| Engine on time | 6 byte | BCD code |
| Engine off time | 6 byte | BCD code |
| idle | 1 byte | 1: Start 0: End |
| Harsh cornering | 1 byte | 1: Yes 0: No |
| Harsh acceleration | 1 byte | 1: Yes 0: No |
| Harsh brake | 1 byte | 1: Yes 0: No |
| Battery low voltage | 1 byte | 1: Yes 0: No |

#### Voltage Status

|  |  |  |
| --- | --- | --- |
| Voltage Status | | |
| Content | Length | Description |
| Number of packages | 1 byte |  |
| Length of packages | 2 bytes |  |
| Voltage single pack value | | |
| Voltage | 2 bytes | Unit: Volt (\*100) |

#### Driver

|  |  |  |
| --- | --- | --- |
| Driver Info | | |
| Content | Length | Description |
| Info length | 1 byte |  |
| Driver info | N byte | Card No.,Name Divided by , |

#### Bluetooth

|  |  |  |
| --- | --- | --- |
| Bluetooth info | | |
| Content | Length | Description |
| Length | 1 byte |  |
| V1 | | |
| Status | 1 byte | 1: Connected 0: not connected |

**Annex: Polling data analyzing example**

Below is an example of how to analyze a polling data, following the rules of [Chapter 2.7.4 Status Data] and [2.7.5 Status context bits description] in Protocol document:

Hex Example:

4801411083000000217374617475732d32383038313130322d303030303031453936424446423031300012090e0b0320af03000112090e0b031a000800001815090071d88f080016472905000700000400000002000000810000001f00000103010f000000000000010001eaed0000000000000f00000000000000000000003f0000000000000000000000

When a polling data is received, we need to divide the data following the Byte length of each part, and analyze one by one, following the definition of each field.

For example, we can divide the HEX data into below blocks, using different colors:

4801411083000000217374617475732d32383038313130322d303030303031453936424446423031300012090e0b0320af03000112090e0b031a0008000f1815090071d88f080016472905000700000400000002000000810000001f00000103010f000000000000010001eaed0000000000000f00000000000000000000003f0000000000000000000000

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Len(B) | HEX | | | Convert to DEC | | Meaning | Rules |
| 1 | 48 | | | H | | H protocol |  |
| 1 | 01 | | | 0x01=1 | | Protocol version V1 |  |
| 2 | 4110 | | | 0x1041 | | 2.7.3 Service Data |  |
| 4 | 83000000 | | | 0x00000083=131 | | Length of loading data: 131 Bytes | 1.1.2 Loading length |
| 1 | 21 | | | 0x21=33 | | Session length is 33Byte | 2.7.3 Service Data |
| (33) | 7374617475732d323  83038313130322d30  30303030314539364  244464230313000 | | |  | | Session No. |
| 6 | 12090e0b0320 | | |  | | Device Time: 2018-09-14 11:03:32 | 2.7.4 Status Data: header info |
|  |  | | 12 | 18 | | Year: 2018 |
|  | 09 | 09 | | Month: September |
|  | 0e | 14 | | Day: 14th |
|  | 0b | 11 | | Hour: 11 |
|  | 03 | 03 | | Minute:03 |
|  | 20 | 32 | | Second: 32 |
| 2 | af03 | | | 0x03af=001110101111 | | Location info bit: parameters exist or not [1] | [1] 2.7.5 Status context bits description |
| 1 | 00 | | | 0x00=00000000 | | Direction type bit | [2] |
| 1 | 01 | | | 0x01=1 | | Location Type: GPS | 2.7.4 Status Data:　Location info |
| 6 | 12090e0b031a | | |  | | Positioning module acquisition time: 2018-09-14 11:03:26 |
|  |  | 12 | | | 18 | Year: 2018 |  |
|  |  | 09 | | | 09 | Month: September |
|  |  | 0e | | | 14 | Day: 14th |
|  |  | 0b | | | 11 | Hour: 11 |
|  |  | 03 | | | 03 | Minute:03 |
|  |  | 1a | | | 26 | Second: 26 |
|  | 00 | | | 0x00=0 | | Direction: 0 degree | 0~180, unit is degree |
| 1 | 08 | | | 0x08=8 | | Satellites Quantity: 8 pcs |  |
| 2 | 000f | | | 0x0f00=1500 | | Speed: 1500/100=15 km/h | km/hour\*100 |
| 2 | 1815 | | | 0x1518=5400 | | Altitude: 54m | Meter\*100 |
| 2 | 0900 | | | 0x0009=9 | | HDOP : 0.9 | Real value= Protocol Value/10 |
| 1 | 71 | | | 0x71=113 | | Degree of longitude: 113 degrees | 0~ 180 |
| 4 | d88f0800 | | | 0x00088fd8= 561112 | | Minute of longitude: 56.1112 | minute\*10000 |
| 1 | 16 | | | 0x16=22 | | Degree of latitude: 22 | -90 ~ +90 |
| 4 | 47290500 | | | 0x00052947=338247 | | Latitude Division: 33.8247 | minute\*10000 |
| 1 | 07 | | | 0x07=00000111 | | G-sensor identifier bit | [3] |
| 2 | 0000 | | | 0x0000=0 | | X: 0 | g\*100, -4000~+4000 |
| 2 | 0400 | | | 0x0004=4 | | Y: 0.04 | g\*100, -4000~+4000 |
| 2 | 0000 | | | 0x0000=0 | | Z: 0 | g\*100, -4000~+4000 |
| 2 | 0200 | | | 0x0002=2 | | Tilt: 0.02 | g\*100, -4000~+4000 |
| 2 | 0000 | | | 0x0000=0 | | Impact: 0 | g\*100, -4000~+4000 |
| 1 | 81 | | | 0x81=10000001 | | Basic Data bit identifier 1 | [4] |
| 1 | 00 | | | 0x00=00000000 | | Basic Data bit identifier 2 | [5] |
| 2 | 0000 | | | N/A | | N/A | Reserve |
| 2 | 1f00 | | | 0x001f=00011111 | | Module Working Status bit | [6] |
| 1 | 00 | | | 0x00=0 | | Mobile Network: Unknown |  |
| 1 | 01 | | | 0x01=11 | | GPS module: normal |  |
| 1 | 03 | | | 0x03=3 | | Wi-Fi module: not exist |  |
| 1 | 01 | | | 0x01=1 | | G sensor: normal |  |
| 2 | 0f00 | | | 0x000f=00001111 | | Recording status: Ch1-4: recording,  Ch 5-8: not recording |  |
|  | Fuel consumption status does not exist, so no data here. | | | | | | |
| 1 | 00 | | | 0x00=0000 | | mobile network status bit identifier |  |
| 1 | 00 | | | 0x00=0 | | signal intensity: invalid | 0: invalid, 1~10 (strongest) |
| 1 | 00 | | | 0x00=0 | | network type: unknown | (refer to 3.2 network type list) |
| 2 | 0000 | | | N/A | | Reserved |  |
|  | WIFI network: Wi-Fi module not exist, so no data here | | | | | | |
| 1 | 01 | | | 0x01=00000001 | | Hard disk bit identifier |  |
| 1 | 00 | | | 0x00=0 | | ID: 1 |  |
| 1 | 01 | | | 0x01=0 | | Har disk status: recording |  |
| 4 | eaed0000 | | | 0x0000edea=60906 | | Har disk size: 60906MB |  |
| 4 | 00000000 | | | 0x00000000=0 | | Hard disk balance capacity: 0MB |  |
| 4 | 0f000000 | | | 0x0000000f=000000001111 | | Alarm Status identifier bit | [7] |
| 2 | 0000 | | | 0x0000=0 | | video loss |  |
| 2 | 0000 | | | 0x0000=0 | | motion detection |  |
| 2 | 0000 | | | 0x0000=0 | | video blind |  |
| 2 | 0000 | | | 0x0000=0 | | alarm input trigger |  |
| 2 | 3f00 | | | 0x003f=000000111111 | | Temperature & Humidity Status identifier bit (Not Implemented Yet) |  |
| 2 | 0000 | | |  | | in vehicle temperature |  |
| 2 | 0000 | | |  | | outside of vehicle temperature |  |
| 2 | 0000 | | |  | | motor temperature |  |
| 2 | 0000 | | |  | | device temperature |  |
| 1 | 00 | | |  | | in vehicle humidity |  |
| 1 | 00 | | |  | | outside of vehicle humidity |  |
|  | Statistics data: data not exist, so no data here | | | | | | |
|  | Ibutton info: data not exist, so no data here | | | | | | |

[1] 0x03af=001110101111 (2.7.5 Status content bits description)

|  |  |  |  |
| --- | --- | --- | --- |
|  | Value | Meaning | Rules |
| bit0 | 1 | Exist | location info (0: no, 1: exist) |
| bit1 | 1 | Exist | G-sensor (0: no, 1: exist) |
| bit 2 | 1 | Exist | basic status (0: no, 1: exist) |
| bit3 | 1 | Exist | communication module working status (0: no, 1: exist) |
| bit4 | 0 | No | fuel consumption status (0: no, 1: exist) |
| bit5 | 1 | Exist | network status (0: no, 1: exist) |
| bit6 | 0 | No | WIFI network status (0: no, 1: exist) |
| bit7 | 1 | Exist | hard disk status (0: no, 1: exist) |
| bit8 | 1 | Exist | alarm status (0: no, 1: exist) |
| bit9 | 1 | Exist | temperature and humidity status (0:no, 1: exist) |
| bit10 | 0 | No | statistics data (0:no, 1: exist) |
| bit11 | 0 | No | ibutton info (0: none, 1: exist) |

[2] 0x00=00000000 (Location info bit description)

|  |  |  |  |
| --- | --- | --- | --- |
|  | Value | Meaning | Rules |
| bit0 | 0 | 0°~180° | Direction Indicator, 0: 0°~180°, 1: 180°~360° |
| bit1 | 0 | East Longitude | Longitude mark, 0: East Longitude, 1: West Longitude |
| bit2 | 0 | above sea level | Altitude direction, 0: above sea level, 1: lower than sea level |
| bit3 | 0 | data does not exist, | Mileage, 0: data does not exist, 1: Data exist |
| bit4 | 0 | North latitude | Latitude mark, 0: North latitude, 1: South latitude |
| bit5 | 0 |  | Reserved |
| bit6 | 0 |  | Reserved |
| bit7 | 0 |  | Reserved |

[3] 0x07=00000111 (G sensor bit analyzing)

|  |  |  |  |
| --- | --- | --- | --- |
|  | Value | Meaning | Rules |
| bit0 | 1 | Data exist | xyz acceleration (0: data not exist, 1: data exist) |
| bit1 | 1 | Data exist | tilt (0: data not exist, 1: data exist) |
| bit2 | 1 | Data exist | Impact (0: data not exist, 1: data exist) |
| bit3 | 0 |  | Reserved |
| bit4 | 0 |  | Reserved |
| bit5 | 0 |  | Reserved |
| bit6 | 0 |  | Reserved |
| bit7 | 0 |  | Reserved |

[4] 0x81=10000001 (Basic Status bit analyzing 1)

|  |  |  |  |
| --- | --- | --- | --- |
|  | Value | Meaning | Rules |
| bit0 | 1 | Valid: Ignition is on | bit0-ACC (0-invalid, 1-valid) |
| bit1 | 0 | Off | bit1-break (0-invalid, 1=valid) |
| bit2 | 0 | Off | bit2-turn left (0-invalid, 1-valid) |
| bit3 | 0 | Off | bit3-turn right (0-invaid, 1-valid) |
| bit4 | 0 | Off | bit4-forward (0-invalid, 1-valid) |
| bit5 | 0 | Off | bit5-backword (0-invalid, 1-valid) |
| bit6 | 0 | Off | bit6-left front door (0-Close, 1-Open) |
| bit7 | 1 | Right front door open | bit7-right front door (0-close, 1-Open) |

[5] 0x00=00000000 (Basic Status bit analyzing 2)

|  |  |  |  |
| --- | --- | --- | --- |
|  | Value | Meaning | Rules |
| bit0 | 0 | Left middle door: close | bit0: left mid door (0: close, 1: Open) |
| bit1 | 0 | Right middle door: close | bit1: right mid door (0: close, 1: open) |
| bit2 | 0 | Left back door: close | bit2: left back door (0: close, 1: open) |
| bit3 | 0 | Right back door: close | bit3: right back door (0: close, 1: open) |
| bit4 | 0 |  |  |
| bit5 | 0 |  |  |
| bit6 | 0 |  |  |
| bit7 | 0 |  |  |

[6] 0x001f=00011111 (Module Working Status bit analyzing)

|  |  |  |  |
| --- | --- | --- | --- |
|  | Value | Meaning | Rules |
| bit0 | 1 | Data exist | bit0: mobile network (0: data not exist, 1: data exist) |
| bit1 | 1 | Data exist | bit1: location module (0:data not exist, 1:data exist) |
| bit2 | 1 | Data exist | bit2: WIFI module (0:data not exist, 1:data exist) |
| bit3 | 1 | Data exist | bit3: G-sensor (0:data not exist, 1:data exist) |
| bit4 | 1 | Data exist | bit4: recording status (0:data not exist, 1:data exist) |
| bit5 | 0 |  |  |
| bit6 | 0 |  |  |
| bit7 | 0 |  |  |

[7] 0x0000000f=000000001111 (Alarm Status bit analyzing)

|  |  |  |  |
| --- | --- | --- | --- |
|  | Value | Meaning | Rules |
| bit0 | 1 | Video loss alarm | bit0: video loss (0: data invalid, 1: data valid) |
| bit1 | 1 | Motion alarm | bit1: motion detection (0: data invalid, 1: data valid) |
| bit 2 | 1 | Video blind/cover | bit2: video blind (0: data invalid, 1: data valid) |
| bit3 | 1 | Input alarm | bit3: alarm input trigger (0: data invalid, 1: data valid) |
| bit4 | 0 | No overspeed | bit4: over speed alarm (0: no trigger, 1: trigger) |
| bit5 | 0 | No low speed | bit5: low speed alarm (0: no trigger, 1: trigger) |
| bit6 | 0 | No emergency alarm | bit6: emergency alarm (0: no trigger, 1: trigger) |
| bit7 | 0 | No overtime stop | bit7: over time stop (0: no trigger, 1: trigger) |
| bit8 | 0 | No vibration alarm | bit8: vibration alarm (0: no trigger, 1: trigger) |
| bit9 | 0 | No out geo fencing alarm | bit9: out of GEO fencing alarm (0: no trigger, 1: trigger) |
| bit10 | 0 | No enter geo alarm | bit10: enter GEO fencing alarm (0: no trigger, 1: trigger) |
| bit11 | 0 | No exit line alarm | bit11: exit line alarm (0: no trigger, 1: trigger) |

### Content Status bit description

|  |  |  |
| --- | --- | --- |
| Content | Length | Description |
| Content | 2 bytes | The contents of the following data, according to the bit corresponding to the specific content, if the bit is 0, that means no such data.  the following status definition refer to this rule, if the bit is 0, means no data  bit0-location info (0: no, 1: exist)  bit1- G-sensor (0: no, 1: exist)  bit 2-basic status (0: no, 1: exist)  bit3-communication module working status (0: no, 1: exist)  bit4-fuel consumption status (0: no, 1: exist)  bit5-network status (0: no, 1: exist)  bit6-WIFI network status (0: no, 1: exist)  bit7-hard disk status (0: no, 1: exist)  bit8-alarm status (0: no, 1: exist)  bit9-temperature and humidity status (0:no, 1: exist)  bit10—statistics data (0:no, 1: exist)  bit11—button info (0: none, 1: exist)  bit12—OBD info (0: none, 1: exist)  bit13—Power Voltage info (0: none, 1: exist)  bit14—Driver info (0: none, 1: exist)  bit15—Bluetooth info (0: none, 1: exist) |

HEX example:

4801411083000000217374617475732d32383038313130322d303030303031453936424446423031300012090e0b0320af03000112090e0b031a000800001815090071d88f080016472905000700000400000002000000810000001f00000103010f000000000000010001eaed0000000000000f00000000000000000000003f0000000000000000000000

Loading data analysis:

Session number length: 0x21

Session No.: status-28081102-000001E96BDFB010

Status data

Device time: 2018-09-14 11:03:32

Content: 0x03af (Means: location status exists, G-sensor exist, basic status exists, module working status exist, mobile network status exists, hard disk status exists, alarm status exists, temperature and humidity status exist)

Location info

Info: 0x00

Location type: 0x01

Time: 2018-09-14 11:03:26

Direction: 0x00

Satellite quantity: 0x08

Speed: 0x0000

Altitude: 0x1518

Location accuracy: 0x0009

Degree of longitude: 0x71

Minute of longitude: 0x00088fd8

Degree of latitude: 0x16

Minute of latitude: 0x00052947

G-sensor:

Identifier bit: 0x07 (Means there exists: x/y/z acceleration data, tilt data, impact data)

X: 0x0000

Y: 0x0004

Z: 0x0000

Tilt: 0x0002

Impact: 0x0000

Basic Status:

Identifier bit 1: 0x81 (Means ignition key/ACC valid, right front door open)

Identifier bit 2: 0x00

Reserved: 0x0000

Module working status

Identifier bit: 0x001f (Means there exists: mobile network data, location module data, Wi-Fi module data, G-sensor data, recording status data)

Mobile network: 0x00

Location module: 0x01

WIFI module: 0x03

G-sensor: 0x01

Recording status: 0x000f

Mobile network status:

Identifier ID1: 0x00

Signal Strength: 0x00

Network type: 0x00

Reserved: 0x0000

Hard disk status

Identify bit: 0x01

Numbering: 0x00

Disk status: 0x01

Disk size: 0x0000edea

Disk balanced capacity: 0x00000000

Alarm status

Identifier bit: 0x0000000f (Means: Video loss data is valid, motion detection data is valid, Video cover data is valid, input alarm data is valid, other alarm is not triggered)

Video loss: 0x0000

Motion detection: 0x0000

Video cover: 0x0000

Input trigger: 0x0000

Temperature and Humidity Status (Not Implemented Yet)

Identifier bit: 0x003f

Temperature in the vehicle: 0x0000

Temperature out of the vehicle: 0x0000

Engine temperature: 0x0000

Device temperature: 0x0000

Humidity in the vehicle: 0x00

Humidity out of the vehicle: 0x00

### Service data response

:

For our newer firmwares after June 2018, the FMS platform need to add 2.7.6 Service data response. So, the server has to respond (0x4041) to 0x1041. Otherwise, the MDVR will keep sending the first piece GPS coordinates, then the FMS will mistakenly consider the MDVR is not moving.

|  |  |
| --- | --- |
| Content | Description |
| Message No. | 0x4041 |
| Direction | MDVR ←← Server |
| Link Type | Signal link |
| Loading data | None |

HEX example:

4801414000000000

## Alarm Event

### Subscription Request

|  |  |  |  |
| --- | --- | --- | --- |
| Content | Description | | |
| Message No. | 0x4050 | | |
| Direction | MDVR 🡨🡨 Server | | |
| Link Type | signal link | | |
| loading data | adopt JSON encoding rule | | |
| Content | Field name | Description |
| Session No. | ss | Generated by the device, i.e.: 12FB-01DE-0001-0203” |
| request | ct | Refer to [Status context bits description](#_Status_context_bits) |
| Optional items | | |
| Additional info | ei | Determines if the status info contains session number.  It is used to be compatible with older version:  0 – not contain[default], 1 – contain, Other – reserved |
| Upload mode | rt | 0-real time priority 1-history priority (Default is 0) |
| Ack response | ack | 0-no need to reply ack(Default is 0) -1-need to reply ack |

Loading data sample:

{

“ss”:”12FB-01DE-0001-0203”,

“ct”:”0x01”

}

, means if alarm trigger, device will report to server for the below data

bit0—location information

alarm load

HEX example:

48015040340000007b226374223a223435222c227373223a22616c61726d2d32383038313130322d30303030303145393642444642303130227d0a00

Plain text example:

HP@4{"ct":"45","ss":"alarm-28081102-000001E96BDFB010"}

Loading data analysis:

Session No.: alarm-28081102-000001E96BDFB010

Subscription: 45

### Subscription Respond

|  |  |  |  |
| --- | --- | --- | --- |
| Content | Description | | |
| Message No. | 0x1050 | | |
| Direction | MDVR →→Server | | |
| Link Type | signal link | | |
| loading data | JSON /adopt JSON encoding rule | | |
| Content | Field name | Description |
| Session No. | ss | Generated by the sever, i.e.: 12FB-01DE-0001-0203” |
| Error Code | err | [\_错误代码](#_错误代码)please refer to the Error Code list |

Loading data sample:

{

“ss”:”12FB-01DE-0001-0203”,

“err”:”0”

}

HEX example:

48015010340000007b22657272223a2230222c227373223a22616c61726d2d32383038313130322d30303030303145393642444642303130227d0a00

Plain text example:

HP4{"err":"0","ss":"alarm-28081102-000001E96BDFB010"}

Loading data analysis:

Session No.: alarm-28081102-000001E96BDFB010

Error code: 0 (Success)

### Service Data

Alarm service data format as below:

Message header + JSON load (alarm detail) +status data

|  |  |  |  |
| --- | --- | --- | --- |
| Content | Description | | |
| Message No. | 0x1051 | | |
| Direction | MDVR →→ Server | | |
| Link Type | signal link | | |
| loading data | Binary coded format | | |
| Content | Length | Description |
| Session No. length | 1 byte | Including terminator, if Session No.is empty, the session number field needs to add terminator, length is 1 |
| Session No. | N byte | 1~255 byte |
| Content length | 4 bytes | Length of Alarm content description string, including terminator/ending mark |
| adopt JSON encoding rule (alarm content description) | | |
| Content | Field name | Description |
| Items that must be filled in | | |
| Device Time | dtu | For example: 2017-01-01 12:11:31 |
| start time | st | for example: 2017-01-01 11:05:31, trigger time may not be the report time, need to separate them |
| End Time | et | empty means trigger, not empty means end time |
| Event Type | ec | [\_Event Type Code](#_事件类型代码)refer to the [Event Type Code](#_Event_Type_Code)  <1000: alarm notification  >1000: event notification |
| Picture address | pa | save path of related pictures (data have not been used, invalid value) |
| Recording address | ra | save path of related recording files (data have not been used, invalid value) |
| Alarm ID | uuid | Null |
| alarm description | det | The definition for different event type is different, refer to the below description, the content in description is included in det  For example, if video loss, it will be “det”:{“ch”:”1”}; |
| Driver ID | drid | Can be null |
| Driver name | drname | Can be null |
| location status data (If the subscribed data is 0, it will not load the data) | | |
| Binary coded format | | |
| [\_状态数据\_1](#_状态数据_1)refer to [Status Data](#_Status_Data) | | |

#### Video loss, motion detection, video blind, input trigger, emergency alarm, Output

|  |  |  |
| --- | --- | --- |
| Video loss, motion detection, video blind, input trigger, emergency alarm | | |
| Content | Field name | description |
| channel | ch | trigger channel, starting from 1 |

#### Input Trigger

|  |  |  |
| --- | --- | --- |
| Input trigger | | |
| Content | Field name | Description |
| Channel | ch | Triggered channel, starting from 1 |
| Number | num | 1. close. 2. Emergency/ Panic 3. F-door 4. M- door 5. B-door 6. Near light 7. Far light 8. R-Turn (right turn) 9. L-Turn (left turn) 10. Braking, 11. Reverse 12. Reserved 1 13. F-door close 14. M-Door Close 15. B-door close 16. Talk (start the intercom) 17. Raise up 18. Airtight 19. Load 20. Custom defines 21. Safe to load   31-IBT2 |

#### Speed alarms, etc.

|  |  |  |
| --- | --- | --- |
| low speed alarm, over speed alarm, low speed warning, high speed warning, harsh acceleration, harsh braking, low temperature alarm, high temperature alarm, idle alarm | | |
| Content | Field name | description |
| trigger threshold | vt | conditional value, if >90 is over speed, then the trigger threshold is 90 |
| time threshold | tt | if > 90 over 5 second is over speed, then the time threshold is 5 second |
| maximum value | max | Maximum speed value during the alarm |
| minimum value | min | Minimum speed value during the alarm |
| average | avg | Average speed value during the alarm |
| current value | cur | Current speed value when reporting |
| Previous second | pre | The speed value of one second before |
| Duration | dur | Unit: s (valid when idling, other alarms are 0) |
| Speed resource | spds | 0—GPS speed 1—OBD speed |

#### Overtime parking

|  |  |  |
| --- | --- | --- |
| Overtime parking | | |
| Content | Field name | Description |
| trigger value | vt |  |
| parking time | st | second |

#### Vibration Alarm

|  |  |  |
| --- | --- | --- |
| vibration alarm / Acceleration Alarm | | |
| Content | Field name | Description |
| trigger threshold | vt | When dt=5: \*10  Other: \*100 |
| time threshold | tt | Anti-shake time (s): \*10 |
| maximum value | max | Maximum speed value during the alarm |
| minimum value | min | Minimum speed value during the alarm |
| current value | avg | Average speed value in a period |
| current value | cur | Current speed value |
| direction | dt | 1—X direction, 2—Y direction, 3—Z direction, 4—impact, 5—tilt, 6-turn, 7-Harsh acceleration, 8—harsh braking |
| Previous second | pre | The speed value of one second before |

#### Geofence

|  |  |  |
| --- | --- | --- |
| Electronic fencing, Electronic route | | |
| Content | Field name | description |
| numbering | num | fencing or route numbering |
| status | st | 0-enter  1-exit  2- over-speed alarm  3- over speed warning  4-low speed alarm  5-low speed warning  6-forbidden parking engine star  7-forbidden parking engine off  8-overtime stay in geofence  9-Pre-entry  10- Pre-exit |
| Trigger Threshold | vt | Valid when st = 2 or 4, unit: Km/h |

#### Door open/close

|  |  |  |
| --- | --- | --- |
| Abnormal open/ close door | | |
| Content | Field name | description |
| Channel | Ch | Triggered channel of inputs, starting from 1 |
| numbering | num | 2—front door, 3—mid door, 4—back door |
| status | st | 0—close, 1—open |

#### Storage abnormal

|  |  |  |
| --- | --- | --- |
| Storage abnormal | | |
| Content | Field name | description |
| numbering | num | For example: sd1, sd2, hdd1, hdd2 |
| status | st | 0 - Missing  1 -- Broken (disk partition fatal error)  2--The log cannot be overwritten  3--Failed to write Block (EIO write error)  4--Disk failure (disk cannot be partitioned)  5--The disk cannot be mounted: the log partition cannot be mounted  6--There are too many bad blocks in disk video storage, more than 20%  7--Disk invalid block: Judge the video partition, at the beginning of formatting, or when the key information of the corresponding file is updated later  8--Disk video sampling verification failed: Failed when compare key information, after a file is finished  9--Disk pauses to write video: 3 consecutive pauses will be reported once  10--Disk recording overwrite exception: a kind of verification for false writing  11--The disk has not recorded for a long time: no recording has been written for more than 2 minutes  12--The disk is written slowly, causing the cached data to be overwritten |

#### People counting

|  |  |  |
| --- | --- | --- |
| People counting | | |
| Content | Field name | description |
| Front door get-on people number | Up0 | The number of onbus people, <0 means invalid |
| Front door get-off people number | Dw0 | The number of offbus people, <0 means invalid |
| Back door get-on people number | Up1 | The number of onbus people, <0 means invalid |
| back door get-off people number | Dw1 | The number of offbus people, <0 means invalid |
| Middle door get-on people number | Up2 | The number of onbus people, <0 means invalid |
| Middle door get-off people number | Dw2 | The number of offbus people, <0 means invalid |
| [Reserved] get-on people number | Up3 | The number of onbus people, <0 means invalid |
| [Reserved] get-off people number | Dw3 | The number of offbus people, <0 means invalid |
| longitude | lon |  |
| latitude | lat |  |
|  | Pat | 0-real time 1-stored and upload (data was resent after network works) |
| time | tm | Format: “ yyyy-mm-dd hh:mm:ss” |
|  | Va | Current onbus people number byte is valid or not (device calculated), 0-invalid , 1-valid |
|  | Cur | the current number of people onbus |

#### DMS&ADAS

|  |  |  |
| --- | --- | --- |
| Fatigue driving (DMS & ADAS ) | | |
| Content | Field name | Description |
| fatigue level | tp | Refer to alarm type |
| ID | id |  |
| Identification name | name |  |

#### Fuel level abnormal alarm

|  |  |  |
| --- | --- | --- |
| fuel level abnormal alarm | | |
| Content | Field name | Description |
| trigger threshold | vt |  |
| oil tank capacity | to | ~~unit : Liter~~ 0-invalid / not supported |
| balance fuel capacity | fr | ~~unit : Liter~~ 0-invalid / not supported |
| Alarm Type | dt | 1: Refuel 2: Fuel theft |

#### Swipe card

|  |  |  |
| --- | --- | --- |
| Swipe Card (RFID/NFC/ Magnetic Card reader etc.) | | |
| Content | Field name | Description |
| Swipe card type | tp | 1-Driver, 2-Student, 3-invalid card |
| Swipe card info | cn | Card number, etc. |
| Onboard/offboard | up | 1: Onboard (check-in), 2: Offboard (check out), else—invalid  if for Driver swipe card: 1-login, 2-log out. Other-invalid |
| History | ht | 1—Historical data 2—Realtime data, Else—invalid |
| Type | it | 0—RFID;1—IBT (i-button); 2—face recognition, 3-ibutton+Face Recognition |

#### Voltage

|  |  |  |
| --- | --- | --- |
| Voltage | | |
| Content | Field name | Description |
| High/low voltage | dt | 1—low voltage 2—high voltage 3—Power off 4—Power on 5-Power off when moving 6—Low voltage shutdown 7—Power on |
| Trigger Threshold | vt | Threshold； \*100 |
| Current value | cur | Current voltage value when reporting；\*100 |

#### Fatigue Detection (built-in DMS)

|  |  |  |
| --- | --- | --- |
| Fatigue detection（built-in DMS）（Only for firmware with built-in fatigue function） | | |
| Content | Field name | Description |
| Fatigue detection | appDefinedCode | 1133Fatigue alarm（close eye, shake head, Overlooking the mobile phone and etc.） |

**Non-alarm event**

#### Trip notification

|  |  |  |
| --- | --- | --- |
| Trip Notification | | |
| Content | Field name | Description |
| Average speed | avg |  |
| Max Speed | max |  |
| Duration | dur |  |
| Driver ID | drid |  |
| Start longitude | slng |  |
| Start latitude | slat |  |

#### Tire pressure

|  |  |  |
| --- | --- | --- |
| Notification of Tire pressure, (a group of tire pressures) | | |
| Content | Field | Description |
| ID | id |  |
| Temperature | temp |  |
| Pressur | pres |  |
| Group | gp | A1, A2, A3 |
| TPMSAlarm Data | data | Id=0, means it gets TPMS alarm data, comma to separate from different TPMS models, 1-TPMS, 2-undifined |

#### Alarm File

|  |  |  |
| --- | --- | --- |
| Notification of file generated | | |
| Content | Field | Description |
| File type | ft | Refer to the file type code: [File Type Code](#_文件类型代码) |
| File name | fn |  |

#### Alarm file in visible partition

|  |  |  |
| --- | --- | --- |
| Notification of alarm file in visible partiion generated (mp4/jpg) | | |
| Content | Field | Description |
| Channel | ch |  |
| Duration | dur |  |
| File size | fs |  |
| File type | ft | Refer to the file type code: [File Type Code](#_文件类型代码) |
| File name | fn |  |

{"ch":"1","dur":"20","fn":"/mnt/sd2/REC-ALARM/20220811/171059\_1/1\_1\_0\_1660237859.mp4","fs":"2557615","ft":"2"}

#### Timer Snapshot

|  |  |  |
| --- | --- | --- |
| Timer Snapshot | | |
| Content | Field | Description |
| Channel | ch |  |
| File type | ft | Refer to the file type code: [File Type Code](#_文件类型代码) |
| File name | fn |  |

{"ch":"3","fn":"/mnt/sd2/capture/20220811/1660238445073CH03T1.jpg","ft":"3"}

#### Ftp file upload

|  |  |  |
| --- | --- | --- |
| Notification of ftp file upload | | |
| Content | Field | Description |
| Channel | ch |  |
| File type | ft | Refer to the file type code: [File Type Code](#_文件类型代码) |
| File name | fn |  |

{"ch":"3","fn":"/mnt/sd2/capture/20220811/1660238445073CH03T1.jpg","ft":"3"}

Some data in the alarm load data is not yet implemented.

HEX example:

48015110bc00000020616c61726d2d32383038313130322d3030303030314539364244464230313000640000007b22646574223a7b226368223a2231227d2c22647475223a22323031382d30392d31342031343a33313a3037222c226563223a2232222c226574223a22222c227061223a22222c227374223a22323031382d30392d31342031343a33313a3037227d0a0012090e0e1f072d00000112090e0e1f07000b00008214080071588f0800165a280500810000001f00000103010f000000000000

Loading data analysis:

Session No. length: 0x20

Session No.: alarm-28081102-000001E96BDFB010

Content length: 0x00000064

Content (JSON) : {"det":{"ch":"1"},"dtu":"2018-09-14 14:31:07","ec":"2","et":"","pa":"","st":"2018-09-14 14:31:07"}

Device time: 2018-09-14 14:31:07

Start time: 2018-09-14 14:31:07

End time: Null (means triggered)

Event type: 2

Photo location: Null

Alarm description: {"ch":"1"} (means Ch1)

Location status data

Device time: 2018-09-14 14:31:07

Content: 0x002d (Means there is location info, basic status, module working status, mobile network status)

Location info

Info: 0x00

Locating type: 0x01

Time: 2018-09-14 14:31:07

Direction: 0x00

Satellite quantity: 0x0b

Speed: 0x0000

Altitude: 0x1482

Location accuracy: 0x0008

Longitude degree: 0x71

Longitude minute: 0x00088f58

Latitude degree: 0x16

Latitude minute: 0x0005285a

Basic Status

Identifier bit 1: 0x81 (Means ignition key valid, right front door open)

Identifier bit 2: 0x00

Reserve: 0x0000

Module working status

Identifier bit: 0x001f (Means there exists: mobile network data, location module data, Wi-Fi module data, G-sensor data, recording status data)

Mobile network: 0x00

Location module: 0x01

WIFI module: 0x03

G-sensor: 0x01

Recording status: 0x000f

Mobile network status

Identifier bit 1: 0x00

Signal strength: 0x00

Network type: 0x00

Reserved: 0x0000

### Business data response

Note: It is valid when the 4050 ack is 1

|  |  |
| --- | --- |
| Content | Description |
| Message No. | 0x4051 |
| Direction | MDVR ←← Server |
| Link Type | Signaling link |
| Load Data | Null |

Hexadecimal example:

4801514000000000

### Upgrade Status Notification

|  |  |  |  |
| --- | --- | --- | --- |
| Content | Description | | |
| Message No. | 0x1052 | | |
| Direction | MDVR →→ Server | | |
| Link Type | Signal link | | |
| Load Data | adopt JSON encoding rule | | |
| Mandatory fields | | |
| Content | Field | Description |
| Session Number | ss | Generated by the sever, i.e.: 12FB-01DE-0001-0203 |
| Upgrade type | ut | 1. —Main firmware 2. -MCU 3. —MCU font 4. extension program |
| Upgrade status | us | 0: succeed, 1: start, other: failed |

## File Query

### Query Request

|  |  |  |  |
| --- | --- | --- | --- |
| Content | Description | | |
| Message No. | 0x4060 | | |
| Direction | MDVR ←←Server | | |
| Link Type | Signal link | | |
| loading data | JSON adopt JSON encoding rule | | |
| Items that must be filled in | | |
| Content | Field name | Description |
| Session No. | ss | Generated by the device, i.e.: 12FB-01DE-0001-0203” |
| start time | st | start time, for example: “2017-01-01 12:30:30”  Start date, for example: “2017-01-01” |
| end time | et | end time, for example “2017-01-02 10:30:30”  End date, for example: “2017-01-31” |
| channel list | chl | corresponding to the exact channel, starting from 1, and split by “;”, for example “1;2;5” means channel 1, channel 2, and channel 5 |
| file type | ft | [\_File Type Code](#_文件类型代码)refer to the file type code |
|  |  |  |
| optional items | | |
| storage list | ml | Correspond to the storage location, split by “;”, all type including sd1, sd2, hd1, hd2, for example “sd1; hd1”means searching recording file from sd1 and hd1  If this item not exist, then search all the storage as default.  (not yet implemented) |
| Upload server | srv | The sever address or domain name of auto upload server. For example: [www.how.com:31500](http://www.how.com:31500)。 [www.how.com](http://www.how.com) is the domain name and 31500 is the port number  If there is not this field, then follow signal link. Otherwise after adding this field, will create a new media link |

“st” and “et” cannot be same, otherwise cannot get search result.

Loading data sample:

{

“ss”:”12FB-01DE-0001-0203”,

"chl": "1;3",

"st": "2017-01-01 00:00:00",

"et": "2017-01-02 12:30:00",

"ft": "1"

}

HEX example:

48016040670000007b2263686c223a22313b323b34222c226574223a22323031382d30392d31332032333a35393a3539222c226674223a2231222c227373223a2266696c655f71756572795f74657374222c227374223a22323031382d30392d31332030303a30303a3030227d0a00

Plain text example:

H`@g{"chl":"1;2;4","et":"2018-09-13 23:59:59","ft":"1","ss":"file\_query\_test","st":"2018-09-13 00:00:00"}

Loading data analysis:

Session No.: file\_query\_test

Start time: 2018-09-13 00:00:00

End time: 2018-09-13 23:59:59

Channel list: 1;2;4

File type: 1 (Means: normal recording)

### File Result

|  |  |  |  |
| --- | --- | --- | --- |
| Content | description | | |
| Message No. | 0x1060 | | |
| Direction | MDVR →→Server | | |
| Link Type | signal link/Media link | | |
| loading data | adopt JSON encoding rule | | |
| Items that must be filled in | | |
|  | Field name | Description |
| Session No. | ss | Generated by the sever, i.e.: 12FB-01DE-0001-0203” |
| Error Code | err | [\_错误代码](#_错误代码)please refer to the error code list, No.8 and No. 9 error type |
| Optional items (if error code is No. 8, there is data coming, else no data coming) | | |
| file information |  | file data, refer to the below file result list |
|  |  |  |

|  |  |  |
| --- | --- | --- |
| file information fi (content included in fi field) | | |
| Optional items | | |
| Content | Field name | Description |
| start time | st | start time, for example “2017-01-01 12:30:30” |
| End time | et | end time, for example “2017-01-01 13:30:30” |
| Channel list | chl | corresponding to the exact channel, starting from 1, and split by “;”, for example “1;2;5” means channel 1, channel 2, and channel 5 |
| file type | ft | [\_File Type Code](#_文件类型代码)refer to file type code |
| file path | fn | For example, “/mnt/sd1/xxxx.264” |
| file size | fs | byte |
| file duration length | fd | second |

Loading Data Sample:

{

“ss”:”12FB-01DE-0001-0203”,

“err”:”8”,

“fi”:{

"chl": "1;2;3",

"st": "2017-01-01 00:00:00",

"et": "2017-01-02 01:30:00",

"ft": "1",

"fn ": "/mnt/sd1/20170111.jpg",

"fs": "102400"

}

}

Loading example of Date result ：

{

“ss”:” 12FB-01DE-0001-0203” ,

“err”:”8” ,

“fi”:{

"chl": "0",

"st": "2017-01-01",

"et": "2017-01-01",

" ft": "1",

" fn ": "",

" fs": "0"

}

}

HEX example:

48016010c50000007b22657272223a2238222c226669223a7b2263686c223a2234222c226574223a22323031382d30392d31332031353a33333a3132222c226664223a223339222c22666e223a222f303030335f30306537303630305f355f313533363835323735335f313533363835323739325f325f35343834392e617669222c226673223a223534383439222c226674223a2231222c227374223a22323031382d30392d31332031353a33323a3333227d2c227373223a2266696c655f71756572795f74657374227d0a00

Plain text example:

H`Å{"err":"8","fi":{"chl":"4","et":"2018-09-13 15:33:12","fd":"39","fn":"/0003\_00e70600\_5\_1536852753\_1536852792\_2\_54849.avi","fs":"54849","ft":"1","st":"2018-09-13 15:32:33"},"ss":"file\_query\_test"}

Loading data analysis:

Session No.: file\_query\_test

Error code: 8 (Means: there is data following)

File info

Starting time: 2018-09-13 15:32:33

End time: 2018-09-13 15:33:12

Channel list: 4

File type: 1 (Means: normal recording)

File path: /0003\_00e70600\_5\_1536852753\_1536852792\_2\_54849.avi

File size: 54849 Byte

File duration time: 39 seconds

HEX example:

48016010240000007b22657272223a2239222c227373223a2266696c655f71756572795f74657374227d0a00

Plain text example:

H`${"err":"9","ss":"file\_query\_test"}

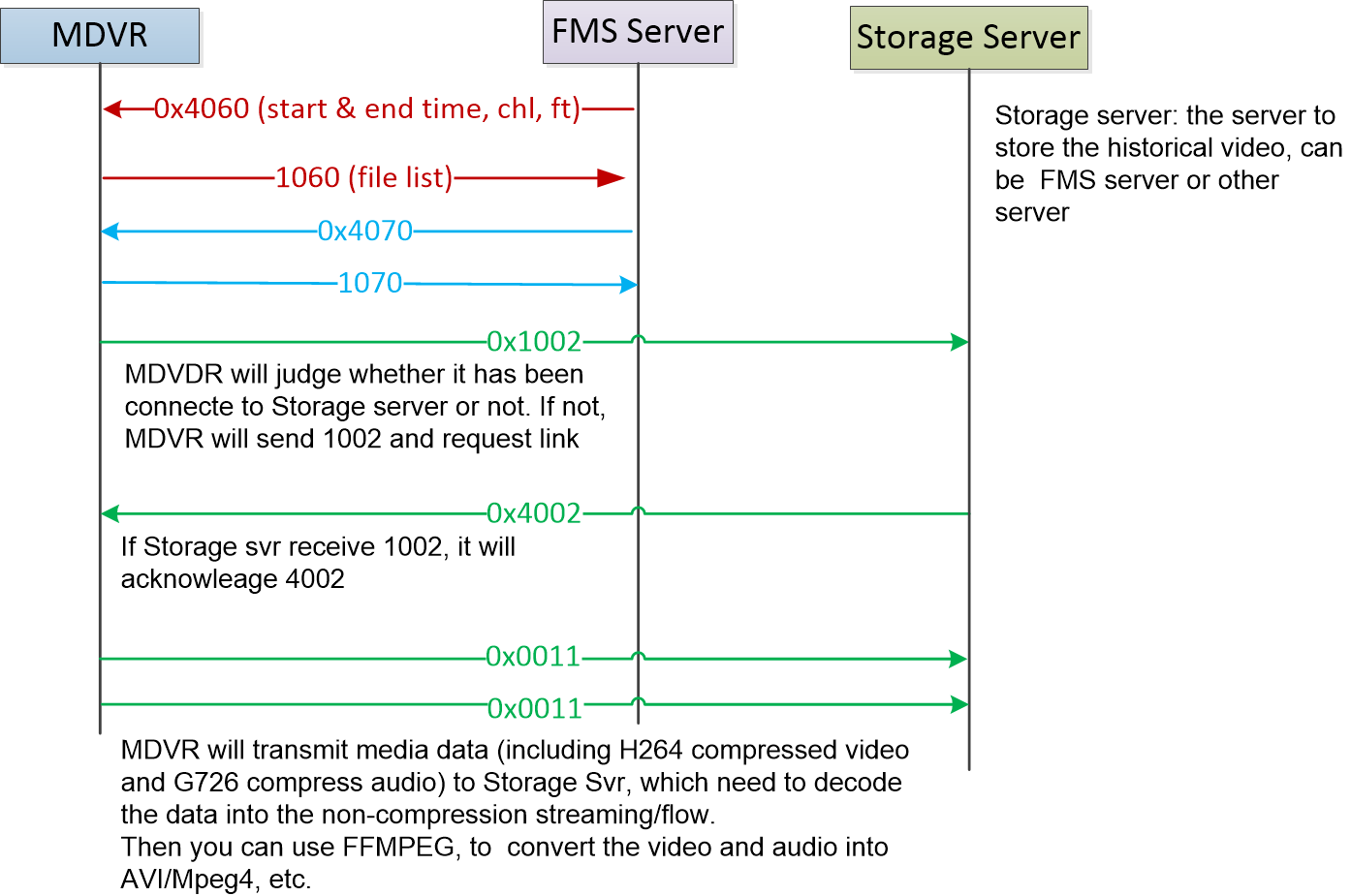
Loading data analysis:

Session No.: file\_query\_test

Error code: 9 (Means file searching ends)

## Recording Playback

### Playback Request



|  |  |  |  |
| --- | --- | --- | --- |
| Content | Description | | |
| Message No. | 0x4070 | | |
| Direction | MDVR ←←Server | | |
| Link Type | signal link | | |
| loading data | adopt JSON encoding rule | | |
| Items that must be filled in | | |
| Content | Field name | Description |
| Session No. | ss | Generated by the sever, i.e.: 12FB-01DE-0001-0203” |
| Channel list | chl | corresponding to the exact channel, starting from 1, and split by “;”, for example “1;2;5” means channel 1, channel 2, and channel 5 |
| Upload server | srv | upload Server IP address or Domain Name, for example” [www.how.com:31500](http://www.how.com:31500)“, the [www.how.com](http://www.how.com) is domain name, 31500 is port  (remark: 31500 port is just a sample port) |
| start time | st | start time, for example “2017-01-01 12:30:30” |
| End time | et | end time, for example “2017-01-02 10:30:30” |
| Optional items | | |
| Data frame list | fl | List of data frame in transmission. Refer to [Data Frame Code](#_Data_Frame_Code).  e.g., “1;2;3” means needing to transmit data of type1,2,3 |
| File name | fn | Corresponding file name of recording file. It is usually used in alarm recording playback, and start time/end time is invalid in this mode. |
| Playback way | act | The default is 0, 0- download playback (full speed playback), 1-stream playback (normal speed playback) |

Loading Data Sample:

{

“ss”:” 12FB-01DE-0001-0203”,

"chl": "1;3",

"st": "2017-01-01 00:00:00",

"et": "2017-01-02 12:30:00",

"srv": "192.168.3.210:5678"

" fl ": "1",

}

HEX example:

480170408e0000007b2263686c223a2231222c226574223a22323031382d30392d31342031353a31363a3131222c22666c223a22313b323b33222c22666e223a22222c22737276223a223139322e3136382e332e3231303a3333303030222c227373223a227265706c61792d72656d6f74652d66696c65222c227374223a22323031382d30392d31342031353a31343a3337227d0a00

Plain text example:

Hp@{"chl":"1","et":"2018-09-14 15:16:11","fl":"1;2;3","fn":"","srv":"192.168.3.210:33000","ss":"replay-remote-file","st":"2018-09-14 15:14:37"}

Loading data analysis:

Session No.: replay-remote-file

Channel list: 1

upload server: 192.168.3.210:33000

Starting time: 2018-09-14 15:14:37

Ending time: 2018-09-14 15:16:11

Data frame list: 1;2;3

File name: Null

### Request Respond

|  |  |  |  |
| --- | --- | --- | --- |
| Content | Description | | |
| Message No. | 0x1070 | | |
| Direction | MDVR →→Server | | |
| Link Type | signal link | | |
| loading data | adopt JSON encoding rule | | |
| Items that must be filled in | | |
| Content | Field name | Description |
| Session No. | ss | Generated by the sever, i.e.: 12FB-01DE-0001-0203” |
| Error Code | err |  |

Loading Data Sample:

{

“ss”:”12FB-01DE-0001-0203”,

“err”:”0”

}

HEX example:

48017010270000007b22657272223a2230222c227373223a227265706c61792d72656d6f74652d66696c65227d0a00

Plain text example:

Hp'{"err":"0","ss":"replay-remote-file"}

Loading data analysis:

Session No.: replay-remote-file

Error code: 0

### Media Data

[\_媒体数据](#_媒体数据)refer to [Media Data](#_Media_Data)

After all the data has been sent, a packet with a media length of 0 is sent, as a mark that replay is completed.

### Time control (specify the time)

|  |  |  |  |
| --- | --- | --- | --- |
| Content | Description (specify the time duration for video playback) | | |
| Message No. | 0x4071 | | |
| Direction | MDVR ←←Server | | |
| Link Type | Media link | | |
| loading data | adopt JSON encoding rule | | |
| Items that must be filled in | | |
| Content | Field name | Description |
| control type | act | 0-seek, 1-pause, 2-play |
| Optional items | | |
| offset time | of | exact time, for example “2017-01-01 12:35:58”, offset time valid |
|  |  |  |

Loading Data Sample:

{

“act”:”0”,

“of”:” 2017-01-01 12:35:58”,

}

HEX example:

48017140280000007b22616374223a2230222c226f66223a22323031382d30392d31342031353a33333a3333227d0a00

Plain text example:

Hq@({"act":"0","of":"2018-09-14 15:33:33"}

Loading data analysis:

Control type: 0

Offset time: 2018-09-14 15:33:33

## Series port transparent transmission

### Transparent transmission Request

|  |  |  |  |
| --- | --- | --- | --- |
| Content | Description | | |
| Message No. | 0x4080 | | |
| Direction | MDVR ←←Server | | |
| Link Type | signal link | | |
| loading data | adopt JSON encoding rule | | |
| Items that must be filled in | | |
| Content | Field name | Description |
| Session No. | ss | Generated by the sever, i.e.: 12FB-01DE-0001-0203” |
| Port numbering | si | starting from 1(The corresponding serial port function, can only select the third-party transparent transmission 1) |
| stop bit | sb | 0 -- 1; 1--1.5; 2--2 |
| check bit | cb | 0—no 1—odd 2--Even numbers 3—sign 4--space |
| data bit | db | value from 4~8 |
| baud rate | br |  |
| registered server | srv | Registered Server IP address or Domain Name, for example” [www.how.com:31500](http://www.how.com:31500)“, the [www.how.com](http://www.how.com) is domain name, 31500 is port |

Loading Data Sample:

{

“ss”:” 12FB-01DE-0001-0203”,

"si": "3",

"sb": "2",

"cb: "0",

"db: "8",

"br: "8000",

"srv": "192.168.3.210:5678"

}

### Request Respond

|  |  |  |  |
| --- | --- | --- | --- |
| Content | Description | | |
| Message No. | 0x1080 | | |
| Direction | MDVR →→Server | | |
| Link Type | signal link | | |
| loading data | adopt JSON encoding rule | | |
| Items that must be filled in | | |
| Content | Field name | Description |
| Session No. | ss | Generated by the sever, i.e.: 12FB-01DE-0001-0203” |
| Error Code | err |  |

Loading Data Sample:

{

“ss”:”12FB-01DE-0001-0203”,

“err”:”0”

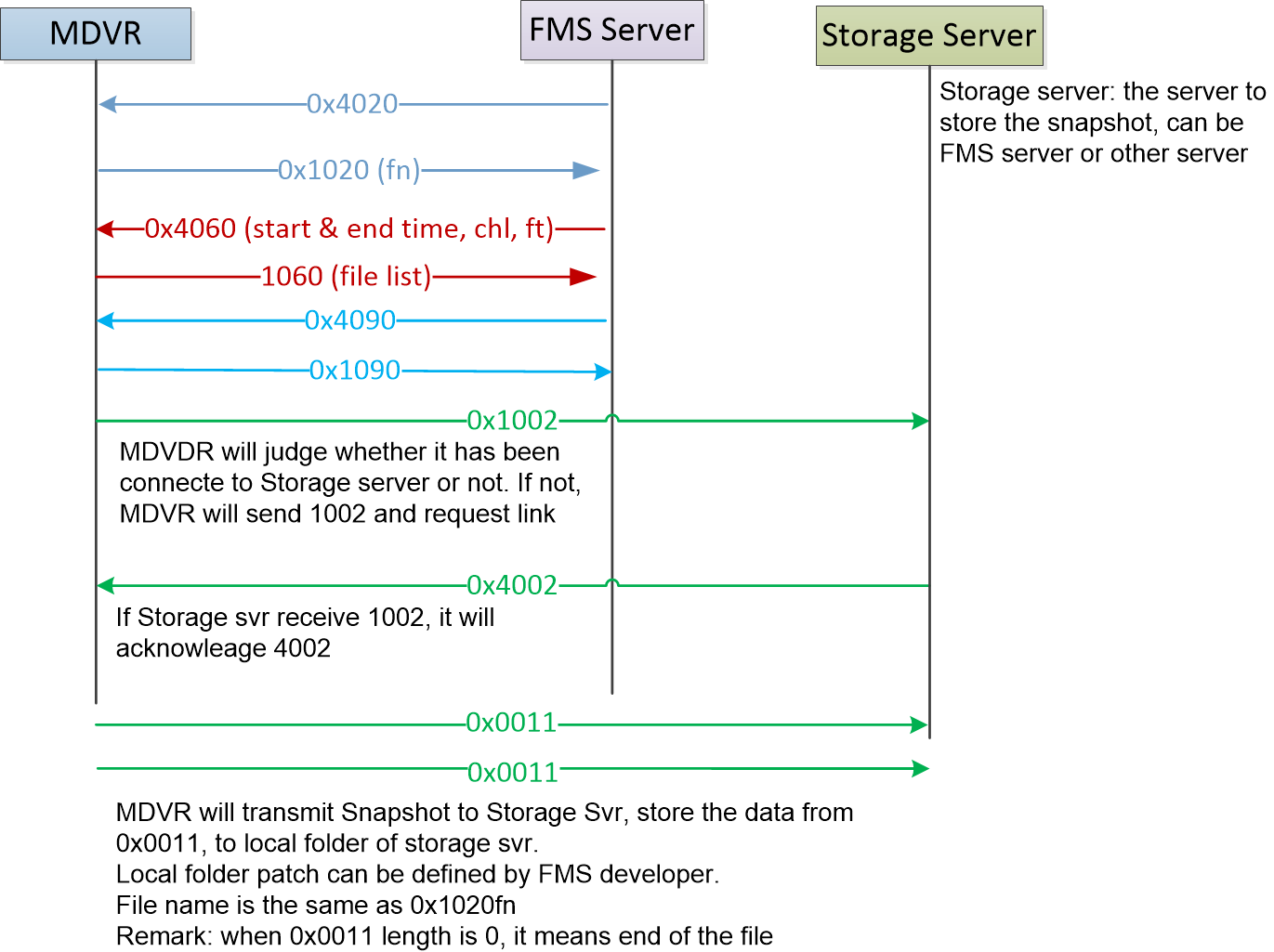
}

### Media Data

refer to [Media data](#_Media_Data)

## File Transmission

### Request to transmit the file to Device



|  |  |  |  |
| --- | --- | --- | --- |
| Content | Description | | |
| Message No. | 0x4090 | | |
| Direction | MDVR ←←Server | | |
| Link Type | signal link | | |
| Loading data | adopt JSON encoding rule | | |
| Items that must be filled in | | |
| Content | Field name | Description |
| Session No. | ss | Generated by the sever, i.e.: 12FB-01DE-0001-0203” |
| Action | act | 0—download from device 1—download from server |
| Registered Server | srv | Registered Server IP address or Domain Name, for example” [www.how.com:31500](http://www.how.com:31500)“, the [www.how.com](http://www.how.com) is domain name, 31500 is port |
| File type | ft | Reference [3.4 File Type Code](#_File_Type_Code) |
| file name | fn | device save file name, if empty, device can define the name |
| File size | fs | Numbers of bytes |
| File offset | fo | The offset bytes from file begin |

Loading Data Sample:

{

“ss”:” 12FB-01DE-0001-0203”,

"act": "0",

“ft”: “1”,

"fs": "10240",

"fn": "aa.avi",

"srv": "192.168.3.210:5678",

"of": "0"

}

Note: You can get the file name by sending a 0x4060 request.  
  
Remark:   
when server send 4090 command to download history recording file, MDVR will send the H.264 streaming (RAW data) to upload server ( the server to receive and store file )

server need to decode the RAW data base on the device protocol, and write the media data into file, then convert the file into AVI/ MP4

please refer to the steps as below:

1, create a file in the registration server, name it xxxx.h264 , for example tmp.h264

2, decode the device protocol raw data after MDVR sending the history recording file ( streaming ) to server, the raw data sending from MDVR to Server is 0X0011 media data, please decode the loading data base on device protocol document

3, write the decoded loading data into tmp.h264 file

4, when 0x0011 length is 0, it means end of the file.

5, after decoding all the 0x0011 data, exclude ffmpeg command to convert the tmp.h264 file into video file

demo command as below

ffmpeg -i test.h264 -c copy out.mp4

### Request Respond

|  |  |  |  |
| --- | --- | --- | --- |
| Content | Description | | |
| Message No. | 0x1090 | | |
| Direction | MDVR →→Server | | |
| Link Type | signal link | | |
| loading data | adopt JSON encoding rule | | |
| Items that must be filled in | | |
| Content | Field name | Description |
| Session No. | ss | Generated by the sever, i.e.: 12FB-01DE-0001-0203” |
| Error Code | err |  |
| offset address | of | the relative offset for file, for resume from break point uploading again |

Loading Data Sample:

{

“ss”:”12FB-01DE-0001-0203”,

“err”:”0”,

“of”:”0”

}

### Media Data

[\_媒体数据](#_媒体数据)refer to the [media data](#_Media_Data)

After all the data has been sent, a packet with a media length of 0 is sent, as a mark that file transfer is completed.

### ftp file transmission

|  |  |  |  |
| --- | --- | --- | --- |
| Content | Description | | |
| Message No. | 0x4091 | | |
| Direction | MDVR ←←Server | | |
| Link Type | signal link | | |
| loading data | adopt JSON encoding rule | | |
| Items that must be filled in | | |
| Content | Field name | Description |
| Session No. | ss | Generated by the sever, i.e.: 12FB-01DE-0001-0203” |
| ftp server | ftp | rule: <ftp://user> name:password@server: port |
| Action type | act | 0—upload files to ftp 1—download files from ftp |
| File name | fn | File name to be processed |
| Optional | | |
| File type | ft | Refer to: 3.4 File type code |
| Storage file name | sfn | server storage file name (ftp absolute path) act=0 valid |

Loading Data Sample:

ftp Download data to device

{

“ss”:”12FB-01DE-0001-0203”,

“ftp”:” <ftp://aa:123@192.168.0.5:32001>”,

“act”:”1”,

“ft”:”5”,

“fn”:”HW3521D-V19080902-V200108A0.sw"”,

}

Upload file to ftp

{

“ss”:”12FB-01DE-0001-0203”,

“ftp”:” <ftp://aa:123@192.168.0.5:32001>”,

“act”:”0”,

“sfn”:”20198002/2020-08-13/\*\*\*\*\*.jpg”,

“fn”:”/mnt/snap\_1.jpg"”,

}

### ftp transmission over report

|  |  |  |  |
| --- | --- | --- | --- |
| Content | Description | | |
| Message No. | 0x1091 | | |
| Direction | MDVR →→Server | | |
| Link Type | signal link | | |
| loading data | adopt JSON encoding rule | | |
| Items that must be filled in | | |
| Content | Field name | Description |
| Session No. | ss | 1. Generated by the sever, i.e.: 12FB-01DE-0001-0203”  2. Automatic upload of alarm linkage is consistent with 0x1051uuid |
| ftp server | ftp | rule: <ftp://user> name:password@server: port |
| action type | act | 0-upload file to ftp. 1-download file from ftp |
| Error Code | err |  |
| Optional items | | |
| version | ver | version need to be upgraded |
| file name | fn | file need to be processed |
| File channel | chl |  |

Loading Data Sample:

{

“ss”: “12FB-01DE-0001-0203”,

“ftp”: “<ftp://aa:123@192.168.0.5:32001>”,

“act”:”1”,

“ft”: “1”,

“ver”:”1.02.3”,

“err”:”0”

}

### Device file generation notification

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Content | Description | | | |
| Message No. | 0x1092 | | | |
| Direction | MDVR 🡪🡪 Server | | | |
| Link Type | Signal link | | | |
| loading data | adopt JSON encoding rule | | | |
| Items that must be filled in | | | |
| Content | | Field name | Description |
| Session No. | | ss | Generated by the device, such as "12FB-01DE-0001-0203", uses the session number corresponding to the registered link |
| File type | | ft | Refer to [File Type Code](#_File_Type_Code) |
| File name | | fn | File name to be processed |
|  | Optional field: | | | |
|  | Event type | | et | Event of file generated |
|  | Accessory content | | dt |  |
| File event (et) | | | | |
| 1280 | | Alarm files( jpg, recording of invisible partition, .avi） | | |
| 1281 | | Timed snapshot | | |
| 1282 | | Alarm triggered video clips (jpg, recording of visible partition, mp4） | | |

Loading Data Sample:

{  
 "dt": {  
 "images": {  
 "capturedTime": "2021-06-30 14:08:53",  
 "channel": "1",  
 "latitude": "22.558142",  
 "longitude": "113.946671",  
 "speed": "0.000000"  
 }  
 },  
 "et": "1281",  
 "fn": "/mnt/sd2/capture/20210630/1625062133319CH01T1.jpg",  
 "ft": "3",  
 "ss": ""  
}

### Notification of File transmission Status

|  |  |  |  |
| --- | --- | --- | --- |
| Content | Description | | |
| Session Number | 0x1093 | | |
| Direction | MDVR 🡪🡪 Server | | |
| Link Type | Signal link | | |
| Load Data | adopt JSON encoding rule | | |
| Items that must be filled in | | |
| Content | Field name | Description |
| Session No. | ss | Generated by the device, such as "12FB-01DE-0001-0203", uses the session number corresponding to the registered link |
| File type | ft | Refer to [File Type Code](#_File_Type_Code) |
| File name | fn | File name to be processed |
|  | Transmission Status | ts | 1--Start   1. -End |

## Parameter Configuration

### Configuration Request

|  |  |  |  |
| --- | --- | --- | --- |
| Content | Description | | |
| Message No. | 0x40A0 | | |
| Direction | MDVR ←←Server | | |
| Link Type | signal link | | |
| Loading data | adopt JSON encoding rule | | |
| Items that must be filled in | | |
| Content | Field name | Description |
| Session No. | ss | Generated by the sever, i.e.: 12FB-01DE-0001-0203” |
| Optional items | | |
| Content | sc | the definition is different for each parameter configuration, Field name is different as well.  the described content is included in the Field name, if the data is empty behind Field name, that means operation for gain parameter, refer to parameter description  for example:  set the clock parameter, it will be “clock”:{“a”:”1”,”b”:”6”} Gain the clock parameter, it will be “clock”:“”  Sub-module parameter: “Mod”: “AI BOX”, Get the Mod parameter, it will be “Mod”: “ ” |
|  | Upload Server | srv | IP address or domain name of upload server[e.g., [www.how.com:31500](http://www.how.com:31500), [www.how.com](http://www.how.com) is address and 31500 is port]. It will use signal link if there are no server settings, otherwise it will create a new link like media data transfer. |

Loading Data Sample:

1, Set clock and time at the same time

{

"ss" : "12FB-01DE-0001-0203"

"sc" :

{

"clock" :

{

"timezone" : "3"

},

"time" :

{

"interval" : "7",

"ntp" : "www.ntp.com"

}

},

}

2, obtain clock, time and record at the same time

{

"ss" : "12FB-01DE-0001-0203"

"sc" :

{

"clock" :

{

"timezone" : "3"

},

"time" :

{

"interval" : "7",

"ntp" : "www.ntp.com"

}

},

}

### Request Respond

|  |  |  |  |
| --- | --- | --- | --- |
| Content | Description | | |
| Message No. | 0x10A0 | | |
| Direction | MDVR →→Server | | |
| Link Type | signal link | | |
| loading data | adopt JSON encoding rule | | |
| Items that must be filled in | | |
| Content | Field name | Description |
| Session No. | ss | Generated by the sever, i.e.: 12FB-01DE-0001-0203” |
| Error Code | err | [\_错误代码](#_错误代码)refer to the Error code list |
| Optional items | | |
| parameter content | pc | refer to the same content in the configuration request |

Loading Data Sample:

{

“ss”:” 12FB-01DE-0001-0203” ,

“err”:”0”,

"sc" :

{

“time”:{

"mode": "5"

}

}

}

## Device Control

The below protocol will not have relative MDVR respond except special remark.

### PTZ Control

|  |  |  |  |
| --- | --- | --- | --- |
| Content | Description | | |
| Message No. | 0x4100 | | |
| Direction | MDVR ←←Server | | |
| Link Type | signal link | | |
| loading data | adopt JSON encoding rule | | |
| Items that must be filled in | | |
| Content | Field name | Description |
| Session No. | ss | Generated by the sever, i.e.: 12FB-01DE-0001-0203” |
| action | act | [\_云台动作代码](#_云台动作代码)refer to [the PTZ action code](#_PTZ_Movement_Code) |
| channel | ch | Related channel, from 1 |
| Optional items | | |
| X direction speed | xs | X direction moving speed, 1~10 |
| Y direction speed | ys | Y direction moving speed, 1~10 |
| preset | pre | 0~255 |
|  |  |  |

Loading Data Sample:

{

“ss”:”12FB-01DE-0001-0203”,

“act”:”3”,

"xs": "3",

"ys": "10",

"pre”: "15"

}

### Restart

MDVR restart is based on Message No.to identify

|  |  |  |  |
| --- | --- | --- | --- |
| Content | Description | | |
| Message No. | 0x4102 | | |
| Direction | MDVR ←←Server | | |
| Link Type | signal link | | |
| loading data | adopt JSON encoding rule | | |
| Items that must be filled in | | |
| Content | Field name | Description |
| Session No. | ss | Generated by the sever, i.e.: 12FB-01DE-0001-0203” |

Loading Data Sample:

{

“ss”:”12FB-01DE-0001-0203”

}

### Upgrade

refer to command 4090 file transmission

### Factory Default Setting

|  |  |  |  |
| --- | --- | --- | --- |
| Content | Description | | |
| Message No. | 0x4103 | | |
| Direction | MDVR ←←Server | | |
| Link Type | signal link | | |
| loading data | adopt JSON encoding rule | | |
| Items that must be filled in | | |
| Content | Field name | Description |
| Session No. | ss | Generated by the sever, i.e.: 12FB-01DE-0001-0203” |

Loading Data Sample:

{

“ss”:”12FB-01DE-0001-0203”

}

### Vehicle Control

|  |  |  |  |
| --- | --- | --- | --- |
| Content | Description | | |
| Message No. | 0x4107 | | |
| Direction | MDVR ←←Server | | |
| Link Type | signal link | | |
| loading data | adopt JSON encoding rule | | |
| Items that must be filled in | | |
| Content | Field name | Description |
| Session No. | ss | Generated by the sever, i.e.: 12FB-01DE-0001-0203” |
| Action type | act | 1—cut the fuel, 2—resume the fuel(1 and 2 control out1; 1 is high level, 2 is low level)  3—cut the electronic 4—resume electronic(3 and 4 control out2; 3 is high level, 4 is low level)  5—open the door6—close the door(5 and 6 are reserved, not yet implemented) |
| Optional items | | |
| door ID | do | 1—left front door 2—right front door 3—left mid door  4—right mid door 5—left rear door 6—right rear door |
|  |  |  |

Loading Data Sample:

{

“act”:”5”,

“do”:”2”  
}

### Format Disk

|  |  |  |  |
| --- | --- | --- | --- |
| Content | Description | | |
| Message No. | 0x4108 | | |
| Direction | MDVR ←← Server | | |
| Link Type | signal link | | |
| loading data | adopt JSON encoding rule | | |
| Items that must be filled in | | |
| Content | Field name | Description |
| Session No. | ss | Generated by the sever, i.e.: 12FB-01DE-0001-0203” |
| Disk ID | num | For example, “sd1,sd2,hdd1,hdd2” |

Loading Sample:

{

“ss”:” 12FB-01DE-0001-0203”

“num”:”sd1”

}

### Gsensor Calibration

|  |  |  |  |
| --- | --- | --- | --- |
| Content | Description | | |
| Message No. | 0x4109 | | |
| Direction | MDVR ←← Server | | |
| Link Type | signal link | | |
| loading data | adopt JSON encoding rule | | |
| Items that must be filled in | | |
| Content | Field name | Description |
| Session number | ss | Generated by the sever, i.e.: 12FB-01DE-0001-0203” |

Loading Data Sample:

{

“ss”:”12FB-01DE-0001-0203”,

}

### OSD Speed overlay

|  |  |
| --- | --- |
| Content | Description |
| Message No. | 0x410A |
| Direction | MDVR ←← server |
| Link type | Signal link |
| Load data | adopts JSON encoding rules |
| Required |
| |  |  |  | | --- | --- | --- | | Content | Field name | Description | | Session ID | ss | Generated by the server, such as "12FB-01DE-0001-0203" | | OSD speed | ods | Such as obd, gps | |

Load sample:

{

“ss”:” 12FB-01DE-0001-0203”,

“ods”:”obd”

}

### Send Short Message

|  |  |
| --- | --- |
| Content | Description |
| Message No. | 0x410B |
| Direction | MDVR ←← Server |
| Link type | Signal Link |
| Load data | adopts JSON encoding rules |
| Required |
| |  |  |  | | --- | --- | --- | | Content | Field name | Description | | Session ID | ss | Generated by the server, such as "12FB-01DE-0001-0203" | | Short Message Type | tp | 1: Display in terminal | | Short Message Content | text | Max. 1024 characters | |

Load sample:

{

“ss”:” 12FB-01DE-0001-0203”,

“tp”:”1”,

“text”: “hello world”

}

### Device Log

|  |  |  |  |
| --- | --- | --- | --- |
| Content | Description | | |
| Message No. | 0x410C | | |
| Direction | MDVR ←← Server | | |
| Link Type | Signal Link | | |
| Load data | adopts JSON encoding rules | | |
| Required | | |
| Content | Field name | Description |
|  | Session ID | ss | Generated by the server, such as "12FB-01DE-0001-0203" |
|  | Log module | name | gps -- 0x4060 search log file, ended by .gps |
|  | Log duration | dur | Unit: minute |

Load sample:

{

“ss”:” 12FB-01DE-0001-0203”

“name”: “gps”，

“dur”, 30

}

### Reset Mileage

|  |  |  |  |
| --- | --- | --- | --- |
| Content | Description | | |
| Message No. | 0x410D | | |
| Direction | MDVR ←← Server | | |
| Interactive link | Signal Link | | |
| Load data | adopts JSON encoding rules | | |
| Required | | |
| Content | Field name | Description |
|  | Session No. | ss | Generated by the server, such as "12FB-01DE-0001-0203" |
|  | Mileage | mile | Km |

Load sample:

{

“ss”:” 12FB-01DE-0001-0203”

“mile”: 30

}

### Answer

|  |  |  |  |
| --- | --- | --- | --- |
| Content | Description | | |
| Message No. | 0x1100 | | |
| Direction | MDVR →→ server | | |
| Link Type | Signaling link (All requests in 2.14 will return this response, distinguished by session number) | | |
| Load data | adopts JSON encoding rules | | |
| Required | | |
| Content | Field name | Description |
| Session ID | ss | Session number generated by the server, for example ”12FB-01DE-0001-0203” |
| error code | err | Please refer: [Error Code](#_错误代码) |

Load sample:

{

“ss”:” 12FB-01DE-0001-0203” ,

“err”:”0”

}

## GPS Optimization switch

### GPS Optimization switch

Note: GPS turn-to-turn polling, based on the turning direction, providing more accurate tracking curves. (When the vehicle turns, will report a GPS coordinate when the vehicle turns every 10 degrees)

|  |  |  |  |
| --- | --- | --- | --- |
| Content | Description | | |
| Message No. | 0x42A0 | | |
| Direction | MDVR ←← Server | | |
| Link Type | Signal link | | |
| loading data | adopt JSON encoding rule | | |
| Items that must be filled in | | |
| Content | Field name | Description |
| Session No. | ss | The session No. generated by server, like ”12FB-01DE-0001-0203” |
| Switch | on | 1: Enable GPS optimization，0: Disable GPS optimization |
| Angle | dg | The value is angle \*100, and the value ranges from 1000 to 35900. i.e., 1000 means 10 degrees, and the angle is greater than or equal to 10 degrees, the position status will be reported. |
| Action | act | 1: obtain parameter  0: set parameter (if no act filed, default is set parameter; when act=1, on and dg value is invalid, could not be set) |

Loading example:

{

"ss":"12FB-01DE-0001-0203",

"on":"1",

"dg":"1000"

“act”:”1”

}

### Response to GPS Optimization switch

|  |  |  |  |
| --- | --- | --- | --- |
| Content | Description | | |
| Message No. | 0x12A0 | | |
| Direction | MDVR →→ Server | | |
| Link Type | Signal link | | |
| Loading data | Adopt JSON encoding rule | | |
| Items that must be filled in | | |
| Content | Field name | Description |
| Session No. | ss | The session No. generated by server, like ”12FB-01DE-0001-0203” |
| Error code | err | Please refer to [Error code](#_错误代码) |

Loading example:

Set parameter loading data sample:

{

"ss":"12FB-01DE-0001-0203",

"err":"0"

}

Obtain parameter loading data sample:

{

"ss":"12FB-01DE-0001-0203",

"err":"0",

"gpsAngleConfig":{

"on":"1",

"dg":"2000"

}

}

## External module status

### Query request

|  |  |  |  |
| --- | --- | --- | --- |
| Content | Description | | |
| Message No. | 0x4300 | | |
| Direction | MDVR ←← server | | |
| Link Type | signal link | | |
| loading data | adopt JSON encoding rule | | |
| Items that must be filled in | | |
| Content | Field name | Description |
| Session No. | ss | Generated by the sever, for example ”12FB-01DE-0001-0203” |
| Module name | mn | Module name: for example, ”pls” |
|  | Upload to server | srv | (added in firmware after 2021/12/24 )  Report the server address or domain name, such as "www.how.com:31500",  where www.how.com is the domain name and 31500 is the port  If there is no such field, the signaling link is taken,  Otherwise, after adding this definition, it will create a new link just like the media data. |

Loading Data Sample:

{

“ss”:” 12FB-01DE-0001-0203” ,

"mn": "pls"

}

### Module data

|  |  |  |  |
| --- | --- | --- | --- |
| Content | Description | | |
| Message No. | 0x1300 | | |
| Direction | MDVR →→ server | | |
| Link Type | signal link | | |
| loading data | Binary encoding format | | |
| Content | length | Description |
| Error code | 1 byte | [error code](#_错误代码 error) is 0 means there is loading data |
| Device ID length | 1 byte | Contains the terminator. If the session number is empty, the session number field needs to add an end character, length is 1 |
| Device ID | N byte | 1~N byte |
| Status data | N byte | Refer to [status data](#_状态数据_1) |
| Added in firmwares after 2021/12/24: | | | |
| Load data | Content | Field | Description |
| Length | 4 | Alarm content description string length, including terminator |
| Using JSON encoding rules (alarm content description) | | |
| Content | Fields | Description |
| Session No. | ss |  |
| Module | mn |  |
| Error code | err | [error code](#_错误代码 error) error code为0 有模块数据 |
| Different modules use different encodings (binary or JSON) | | |
| Module data | N Byte | Refer to Chapter 2.16.3 |

### Module Data

#### PLS (Product Level Sensor) ,

Note: Refer to 2.7.5 to transmit data, when the message ID is 0x1300, bit12 indicates pls data information

|  |  |  |
| --- | --- | --- |
| Use binary coding rules. Refer to [2.7.5](#_内容状态位描述) | | |
| Content | Length | Description |
| Content | 2 bytes | The content contained in the following data corresponds to the specific content by bit. If the bit is 0, it means that there is no data in this segment.  This rule is referenced in each subsequent state data definition. If it is 0, it means that there is no related data.  bit0--location information (0: no, 1: exist)  bit2--basic state (0: no, 1: exist)  Bit12--pls information (0: no, 1: exist) |

|  |  |  |
| --- | --- | --- |
| PLS status | | |
| type | 1 byte |  |
| data | n byte | Type 1(Dixon), type 2(3205) |

|  |  |  |  |
| --- | --- | --- | --- |
| PLS  Dixon  (23 byte) | Content | length | Introduction refer to Dixon Bayco Communication Protocol rev D.pdf |
| STX | 1 byte | 0x03 |
| RCD | 1 byte | 0xA0 |
| CNT | 1 byte | 0x12 |
| PGMO/R | 2 bytes |  |
| STA | 16 bytes | Sensor DRY…………………........... 0x00  Sensor WET………………………... 0x80  Sensor NOT PROGRAMMED……..0xFF |
| CHK | 1 byte | 0x\*\* |
| ETX | 1 byte | 0x03 |

|  |  |  |  |
| --- | --- | --- | --- |
| PLS  3205  (9 byte) | Content | length | Introduction refer to H72589-12MAY19 - 3205 MODBUS Implementation Rev 2F.pdf |
| Slave Address | 1 byte | 0x01 |
| Func Code | 1 byte | 0x03 |
| Data Len | 1 byte | 0x08 |
| 204 Error number | 2 bytes |  |
| 205 Air pressure | 2 bytes |  |
| 206 Retain Sensor | 2 bytes |  |
| 207Overfill Sensor | 2 bytes |  |
|  | CRC | 2 bytes | ModbusCRC16 |

#### GPS

|  |  |  |
| --- | --- | --- |
| Use JSON encoding rules | | |
| Content | Field | Description |
| Satellite Number | num |  |
| Satellite details | star | array |
| Raw data | raw |  |

|  |  |  |
| --- | --- | --- |
| Satellite details (The content is contained in the star paragraph) | | |
| Content | Field | Description |
| No. | id |  |
| Signal Strength | sig |  |

## Description of electronic Geo fence configuration

At present the realization of the function of the electronic Geo fence is controlled through a configuration file, and no other interface between MDVR and platform.

Direct transmission configuration file (for example, the platform changed the new area of the Geo fence, and it will generate a new configuration file directly, and then through 0x4090 upload the new configuration file to MDVR, MDVR will automatically replace the new configuration files; Every time the MDVR is just started, the platform can also download the configuration file of the electronic Geo fence in the MDVR by sending a request 0x4090.

### Upload the Geo fence of the configuration file

0x4090 loading example:

{

“ss”:” 12FB-01DE-0001-0203” ,

"act": "1",

“ft”: ”6”,

"fs": "65535",

"fn": "geofence.config",

"srv": "192.168.3.210:5678",

"of": "0"

}

After sending a 0x4090 request, MDVR will send a media channel registration request of 0x1002 to 192.168.3.2107:5678. After 192.168.3.2107:5678 replies to 0x4002, it reads the local modified Geofence configuration file, and package it as the media data of 0x0011 and send it to MDVR; Please notice that, when the local geofence.config file read and finish sending, and it need to send a loading data as 0 0x0011 data package to indicate the file transfer is complete.

### Download the Electronic Fence Configuration File

0x4090 Loading example:

{

“ss”:” 12FB-01DE-0001-0203” ,

"act": "0",

“ft”: ”6”,

"fs": "65535",

"fn": "/etc/config/geofence.config",

"srv": "192.168.3.210:5678",

"of": "0"

}

After sending a 0x4090 request, The MDVR will send a packet of 0x0011 to 192.168.3.210:5678, parse the contents inside, and when the length of media data in the load data of the received packet of 0x0011 is 0, it means that the document has been received

### Description of Electronic Geo Fence Configuration File Content

Configuration file:

{

"num":2,

"list":{

"a1":{

"id":3301,

"attr":23,

"st":1591887459,

"et":1599999999,

"spd":70,

"ostm":7,

"apNum":3,

"p1":{

"lo":"113.937332",

"la":"22.560095"

},

"p2":{

"lo":"113.940674",

"la":"22.560097"

},

"p3":{

"lo":"113.943733",

"la":"22.558964"

}

},

"a2":{

"id":3302,

"attr":23,

"st":1591887459,

"et":1599999999,

"spd":60,

"ostm":6,

"apNum":2,

"p1":{

"lo":"113.946999",

"la":"22.559135"

},

"p2":{

"lo":"113.946716",

"la":"22.561094"

}

}

}

}

Description of relevant parameters:

|  |  |  |  |
| --- | --- | --- | --- |
| Content | Field name | Description | |
| The total of region | num |  | |
| Region list | list |  | |
| Region 1 | a1（an） | ax to indicate a specific region | |
| Region id | id |  | |
| Regional attribute | attr | Check [2.17.4 Definition of regional attributes](#_区域属性定义（两个字节）) | |
| Starting time | st | Time range setting BCD[6] in area | |
| The end of time | et | Time range setting BCD[6] in area | |
| The highest speed | spd | The unit is kilometers per hour (km/h). If the speed limit in the area property is 0, there is no such field | |
| Overspeed duration | ostm | The unit is seconds (s). If the speed limit in the area property is 0, there is no such field | |
| Total number of vertices in a region | apNum |  | |
| vertices 1 | p1（pn） | px indicate a particular vertex | |
| Vertex longitude | lo | The longitude in degrees is multiplied by sixth power of 10,  and the precision is  one millionth of a degree | |
| Vertex latitude | la | Latitude in degrees is multiplied by sixth power of 10, and the precision is one millionth of a degree | |
| circle radius | lr | The radius of the circle centered on the vertex, valid when the number of vertices is 1. (unit: m) | |
| Linkage output | root node | over  preOver  low  preLow  intoArea  outArea  fbParkOn  fbParkOff  stayTimeout  preIntoArea  preOutArea | |
|  |  | Field name | Description |
|  |  | enable | Enable alarm |
|  |  | spd | Speed threshold |
|  |  | dut | Duration lasted |
|  |  | linkRecord | Enable Recording |
|  |  | linkOutput | Link Output |
|  |  | linkLockChn | Link recording channel |
|  |  | linkUploadChn | Link recording upload channel |
|  |  | linkSnapChn | Link snapshot channel |
|  |  | linkNetCamTTSSwitch | bit0--network  bit1--Camera  bit2—tts |
|  |  | linkBuzzer | Audio switch |
|  |  | Optional | |
|  |  | start\_spd | Start speed |
|  |  | end\_spd | End speed |

### Definition of regional attributes（Two bytes）

|  |  |
| --- | --- |
| bit | Sign |
| 0 | 1: According to the time |
| 1 | 1: The speed limit |
| 2 | 1: Enter the area, then send alert to the driver |
| 3 | 1: Enter the area, then send alert to the platform |
| 4 | 1: Get out of the area and alert the driver |
| 5 | 1: Get out of the area and alert the platform |
| 6 | 0: Turn on the camera when entering the area；1: Turn off the camera when entering the area |
| 7 | 0: Open the communication module when entering the zone；1: Close the communication module when entering the zone |
| 8-15 | Reserved |

Note: The definition here is two bytes, and stored in the configuration file are decimal Numbers

## Synch Driver Info

The driver information is in the form of a file and is sent to the device through 0x4090. The device will actively synchronize the driver information and report the synchronization status through http (https is not supported).

**Note:**

It does not support adding, deleting, modifying or checking the information of a single driver, and it must be fully synchronized.

Filename must be *drivers.config*

### Upload driver info file

0x4090 loading sample:

{

"ss": "12FB-01DE-0001-0203",

"act": "1",

"ft": "7",

"fs": "65535",

"fn": "drivers.config",

"srv": "192.168.3.210:5678"

}

The device initiates a media link connection to the srv service, the service media link sends the drivers.config face configuration file data after the response, and finally sends a data packet of 0x0011 with a payload of 0 to indicate that the file transfer is complete

### drivers.config File

|  |  |  |
| --- | --- | --- |
| Adopt JSON encoding rule | | |
| Content | Field name | Description |
| Synchronization status reporting address | taskNotifyUrl | Customer defined |
| Driver info | dataList | array |
|  | guid | ID |
| name | Name |
| cardID | Card No. |
| photoUrl | Driver Photo address(.jpg) |
| photoMD5 | Driver Photo md5 value (32bit) |
| photoFlag | Driver Photo status 0--not updated 1--updated |

Loading sample:

{

"taskNotifyUrl": "http://localhost:8080/notify",

"dataList": [

{

"guid": "153A5F15-B18447EF-A0651C85-37D650C5",

"name": "Oscar2",

"cardID": "318B73DC",

"photoUrl": "http://localhost:8080/drivers/abc.jpg",

"photoMD5": "aba72498a77b49dec6f80580a9e71cfd",

"photoFlag": 0

},

{

"guid": "A0651C85-37D650C5-A0651C85-37D650C5",

"name": "fsfs",

"cardID": "123456",

"photoUrl": "http://localhost:8080/drivers/fsdfsfsd.jpg",

"photoMD5": "e7172498a77b49dec6f80580a9e71cfd",

"photoFlag": 0

}

]

}

1. The device will download the driver picture according to the http address provided by photoUrl, and verify the md5 value of the picture file

2. Modify the driver's picture: set photoFlag: 1, set a new picture photoMD5 value; if the download address of the picture changes, please update photoUrl synchronously

3. Delete driver: delete the driver information in drivers.config, and synchronize drivers.config to the device.

### Synchronization status report

**Note:**

invalid for Non-AI devices

Request URL: url set by taskNotifyUrl

Request method: POST

Request parameters:

{

"deviceID":"",

"dataList":[

{

"guid": "153A5F15-B18447EF-A0651C85-37D650C5",

"state": "",

"rpguid": "",

"photoMD5": ""

}

]

}

After all driver information synchronization is completed, all driver synchronization information will also be sent to the service at one time.

|  |  |
| --- | --- |
| Field | Description |
| state | Status code:  0--success  1--Not synced  2--The picture is downloading  3--The picture is being certified  10--The picture is not legal  11--Download failed  12--Repeat face  13--The number of faces exceeds the maximum number  99--Other errors |

# Code List

## Error Code: error

|  |  |
| --- | --- |
| Value | Description |
| 0 | Success |
| 1 | Duplicated ID |
| 2 | invalid parameter |
| 3 | invalid command |
| 4 | device busy |
| 5 | connection lost |
| 6 | related file not exist |
| 7 | disk not exist |
| 8 | follow up data |
| 9 | file search finish |
| 10 | Device is not authorized |
| 255 | Unknown error |

## Network Type Code: at

|  |  |
| --- | --- |
| Value | Description |
| 0 | unknown |
| 1 | wired |
| 2 | WIFI |
| 3 | 2G |
| 4 | 3G |
| 5 | 4G |
| 6 | 5G |
| 7 | WIFI+3/4/5G, connect with mobile network proxy via WIFI to access Internet |
| 8 | CABLE+3/4/5G, connect with mobile network proxy via CABLE to access Internet |

## Event Type Code: ec

|  |  |
| --- | --- |
| Value | Description |
| 0 | unknown |
| 1 | video lost |
| 2 | motion detection |
| 3 | video blind |
| 4 | input trigger |
| 5 | emergency alarm |
| 6 | low speed alarm |
| 7 | over speed alarm |
| 8 | low temperature alarm |
| 9 | high temperature alarm |
| 10 | humidity alarm |
| 11 | parking over time |
| 12 | acceleration alarm |
| 13 | GEO fencing |
| 14 | electronic route |
| 15 | abnormal open/close the door |
| 16 | storage abnormal |
| 17 | fatigue driving |
| 18 | fuel consumption abnormal |
| 19 | ACC off. (compatible with old firmwares. In old firmwares: During ACC-off delay, if ignites (et > st), will report “accoff ends”; in new firmware: During ACC-off delay, if ignites (et > st), will report “accon”) |
| 20 | GPS module abnormal |
| 21 | front panel open |
| 22 | Swipe card |
| 23 | IBUTTON |
| 24 | Harsh acceleration |
| 25 | Harsh braking |
| 26 | Low speed warning |
| 27 | High speed warning |
| 28 | Voltage alarm |
| 29 | People counting |
| 30 | DMS and ADAS alarm (Driver monitoring system, and Advanced Driving Assistant System) |
| 31 | “Acc on”. Report once at boot |
| 32 | Idle |
| 33 | Gps antenna break |
| 34 | Gps antenna short |
| 35 | IO output |
| 36 | CAN Bus connection abnormal |
| 37 | Towing |
| 38 | Free wheeling |
| 39 | RPM exceeds |
| 40 | Vehicle Move |
| 41 | Trip start（st/et/dtu time same） |
| 42 | In trip |
| 43 | Trip ends (periodically report after acc off) |
| 44 | GPS location recover |
| 45 | Video abnormal |
| 46 | None trip position (report periodically after trip ends) |
| 47 | Main unit anomly (Device not connected for long time, periodical alarms) |
| 768 | Trip notification |
| 769 | Tire pressure notification |
| 1280 | Alarm file |
| 1281 | Timer Snapshot |
| 1282 | Alarm file (in visible partition) |
| 1283 | ftp file upload notification |

## File Type Code: ft

|  |  |
| --- | --- |
| Value | Description |
| 0 | unknown |
| 1 | general recording |
| 2 | alarm recording |
| 3 | general snapshot file |
| 4 | alarm snapshot file |
| 5 | upgrade file |
| 6 | log file |
| 7 | Configuration file |
| 8 | Black box file |
| 9 | Visible alarm video/snapshot |

## PTZ Movement Code: act

|  |  |
| --- | --- |
| Value | Description |
| 0 | unknown |
| 1 | up |
| 2 | down |
| 3 | left |
| 4 | right |
| 5 | left up |
| 6 | left down |
| 7 | right up |
| 8 | right down |
| 9 | call preset |
| 10 | set preset |
| 11 | clear preset |
| 12 | Iris + |
| 13 | Iris - |
| 14 | zoom - |
| 15 | zoom + |
| 16 | focus - |
| 17 | focus+ |
| 18 | auto pan |
| 19 | wiper ON |
| 20 | Wiper OFF |
| 21 | Patrol ON |
| 22 | Patrol OFF |
| 23 | light ON |
| 24 | Light OFF |

## Data Frame Code: fl

|  |  |
| --- | --- |
| Value | Description |
| 0 | Invalid |
| 1 | I frame of video (H264) |
| 2 | P frame of video(H264) |
| 3 | Audio frame (G726 contains a special head of 2 bytes) |
| 4 | Serial data frame |
| 5 | File data frame (If the length of media data and other info are 0, it means file transmission is finished or file playback is finished.) |
| 6 | Status data frame (Only valid in playback, there are gps, gsensor, and acc three status) |
| 7 | Alarm data frame (Only valid in playback) |
|  |  |

## AI Alarm Type: tp

When the ec=30, there will be data in tp. Otherwise, there will not be tp data.  
remark: 1-21 is ADAS alarm ; 33 to 83 is DMS alarm

|  |  |
| --- | --- |
| Value | Description |
| 1 | Forward Collision Warning |
| 2 | Lane departure warning |
| 3 | Headway Monitoring Warning |
| 4 | Pedestrian collision alarm |
| 5 | Frequently Lane departure warning |
| 6 | Traffic Sign Violation |
| 7 | Harsh Acceleration |
| 8 | Harsh Breaking |
| 9 | Safety Distance |
| 16 | Traffic Sign Recognition |
| 17 | FCW: Forward collision warning |
| 18 | HMW: Headway monitoring warning |
| 19 | Left Lane departure warning |
| 20 | Right Lane departure warning |
| 21 | VB Forward Collision Warning |
| 33 | Fatigue driving alarm |
| 34 | Phone call alarm |
| 35 | Smoking alarm |
| 36 | Distraction |
| 37 | Driver abnormal |
| 49 | Driver changed |
| 65 | Eye closed |
| 66 | Yawning |
| 67 | Camera cover |
| 68 | Distracted Driving |
| 69 | Seat belt not fastened |
| 70 | No driver |
| 72 | Driver shift |
| 73 | Driver back |
| 80 | Infrared sunglasses |
| 81 | Driver ID identified successfully |
| 82 | Driver ID identified failed |
| 83 | No Driver face detected |
| 85 | Mask not worn |

## Serial port function: func

|  |  |
| --- | --- |
| Value | Description |
| 0 | Shutdown serial port |
| 1 | TTX transparent transmission |
| 2 | PTZ |
| 3 | External GPS |
| 4 | User define 1 |
| 5 | User define 2 |
| 6 | Vehicle OBD interface |
| 7 | Ultrasonic fuel sensor, 0 model (tub): HW-UFS05 |
| 8 | Ultrasonic fuel sensor, 1 model (tub): HW-UFS05 |
| 9 | Student swipe card |
| 10 | People counting |
| 11 | Fatigue detection |
| 12 | TTS ( GB2312 string encode) |
| 13 | Fuel sensor , model: CR-606 |
| 14 | DAVITEQ capacitance fuel sensor (Daviteq fuel sensor, model:PulseCAP10 S2, 19200 baud rate, RS232 interface integration) |
| 15 | Transparent transmission 1 |
| 16 | LLS30160 capacitance fuel sensor (OMNICOMM LLS30160 , RS232 interface connection) |
| 17 | 808 standard transparent transmission |
| 18 | THI Temperature and humidity |
| 19 | User define 3 |
| 20 | HW-ADAS (HW-DMAD01) |
| 21 | TL800 fuel sensor |
| 22 | Transparent transmission 2 |
| 23 | Driver swipe card |
| 24 | ADAS |
| 25 | ADAS |
| 26 | ADAS |
| 27 | DSM |
| 28 | People counting |
| 29 | People counting (HW-PCC021 / HW-PCC022) |
| 30 | RFID |
| 31 | Transparent transmission 3 (reserved ) |
| 32 | fingerprint |
| 33 | Loading |
| 34 | Roof light |
| 38 | Howen-LED |
| 39 | Howen-PCS (refer to Chapter 4.34) |
| 40 | Reserved DMS |
| 41 | Reserved ADAS |
| 4096 | LLSE fuel sensor |
| 4097 | VEHAA Digital-to-analog conversion box |
| 4098 | OPW-3205E |
| 4099 | DB-FT208 |
| 4150 | DTU-1 |
| 4151 | HW-VAR04 |

## IO input alarm: *enab**les* types

|  |  |
| --- | --- |
| Value | Description |
| 0 | Close |
| 1 | Emergency |
| 2 | Front door |
| 3 | Middle door |
| 4 | Back door |
| 5 | Dipped headlight (near light) |
| 6 | High beam (far light) |
| 9 | Right turn light |
| 10 | Left turn light |
| 11 | Brake |
| 12 | Back a vehicle |
| 13 | (Reserved) |
| 14 | The front door close |
| 15 | The middle door close |
| 16 | The back door close |
| 17 | Intercom |
| 18 | Lifting |
| 19 | seal |
| 20 | loading |
| 22 | Customer define |
| 23 | Safe to load |
| 31 | Ibutton2 |

# Parameter Description

Please note that parameters are case sensitive.

If there is no corresponding description in the obtained parameter, please keep the original value.

## Clock

|  |  |  |  |
| --- | --- | --- | --- |
| Field Name | CLOCK | | |
| loading data description | | | |
| Content | | Field name | Description |
| version | | --version | "1.0.1.1" (0-16 byte) |
| Calibration mode | | switch | 0--Manual 1—GPS adjust 2—NTP |
| time zone | | time zone | GMT-12 0: 0.0  GMT-12 15: 2.5  GMT-12 30: 5.0  GMT-12 45: 7.5  GMT-11 0: 10.0  ...  GMT+0 0: 120.0  GMT+0 15: 122.5  ...  GMT+8 0: 200.0  ...  GMT+13 45: 247.5 |
| NTP server | | ntpserver | 0~64 byte |
| NTP server port | | ntpport | (0-65535) |
| date display mode | | DateType | 0—YY/MM/DD 1—DD/MM/YY 2—MM/DD/YY |
| buzzer | | buzzerSwitch | 0--OFF 1--ON |
| operation time out | | OprTimeOut | 30~3600 second |
| DST switch | | onoff | 0--close 1--Open |
| DST start month | | sMonth | 0--Jan ... 11—Dec. |
| DST start week | | sWeek | 0—1st week  1—2nd week  2—3rd week  3—4th week  4—last week |
| DST start day | | sDate | 0--Suny 1--Mond ... 6--Sat |
| DST start hour | | sHour | 0~23 |
| DST ending month | | eMonth | 0~11 represents: 1-12 |
| DST ending week | | eWeek | 0—1st week  1—2nd week  2—3rd week  3—4th week  4—last week |
| DST ending day | | eDate | 0--Suny 1--Mond ... 6--Sat |
| DST ending hour | | eHour | 0~11 represents: 1-12 |
| Offset time | | offset | 0—15min  1—30min  2—45min  3—60min |

remark: timezone calculation method

GMT+0 15: 122.5 ( GMT+0 is HH, 15 is mm)

Hour calculation method: (122.5 \*10)/100 , get integer bit 12, that is GMT+0

11 (11 - 12) is GMT - 1

12 (12 - 12) is GMT + 0

13 (13 - 12) is GMT + 1

Minutes calculation method: (((122.5 \*10)%100)/25)\*15 is 15  
  
Demo:

{

"CLOCK": {

"--version": "1.0.1.1",

"switch": "1",

"timezone": "200",

"ntpserver": "www.ntp.com",

"ntpport": "123",

" DateType": "0",

"buzzerSwitch": "1",

"OprTimeOut": "60",

“onoff”:”0”,

“sMonth”:”0”,

“sWeek”:”0”,

“sDate”:”0”,

“sHour”:”0”,

“eMonth”:”0”,

“eWeek”:”0”,

“eDate”:”0”,

“eHour”:”0”,

“offset”:”0”

}

}

## Mobile Network

Notice: this parameter could only obtain, and cannot modify remotely

|  |  |  |  |
| --- | --- | --- | --- |
| Field Name | DIALUP | | |
| loading data description | | | |
| Content | | Field name | Description |
| version | | --version | "1.0.1.1" (0-16 byte) |
| function switch | | switch | 0--OFF 1--ON |
| type | | type | 0--WCDMA 1--EVDO 2--TD-SCDMA, 3--TDD-LTE 4--FDD-1(), 5--FDD-2() |
| apn | | apn | 0~64 byte |
| Server Code | | servercode | 0~64 byte |
| User Name | | user | 0~64 byte |
| password | | passwd | 0~64 byte |
| Service number | | SmsService | 0~32 byte |

Demo:

{

"DIALUP": {

"--version": "1.0.1.0",

"switch": "1",

"type": "0",

"apn": "3gnet",

"servercode": "\*99#",

"user": "card",

"passwd": "card",

"smsservice": "13800138000"

}

}

## Disk Abnormal// storage abnormal

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Field Name | DiskAbnormal | | | | |
| loading data description | | | | | |
| Content | | Field name | Description | | |
| version | | --version | "1.0.1.1" | | |
| disk root node | | disk | ID from 0~3, for example disk 0 is disk0, there are 4 disks in total | | |
|  | |  | Content | Field name | Description |
| enable | enable |  |
|  | interval | reserved |
|  | delay | reserved |
|  | holdTime | reserved |
| linkage | linkage | reserved |
|  |  |  |

Demo:

{

"DiskAbnormal": {

"--version": "1.0.1.1",

"disk0": {

"enable": "0",

"interval": "600",

"delay": "15",

"holdTime": "60",

"linkage": "0"

},

"disk1": {

"enable": "0",

"interval": "600",

"delay": "15",

"holdTime": "60",

"linkage": "0"

}

}

}

## Live Viewing

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Field Name | DISPLAY | | | | |
| loading data description | | | | | |
| Content | | Field name | Description | | |
| version | | --version | "1.0.1.1" | | |
| resolution | | DisplayType | 0--720x576 1--1024x768 2--1280x720  3--1920x1080 4-- Maximization | | |
| channel root node | | chn | chn0 is channel 1, chn1 is channel 2, and so on. There are 16 channels in total | | |
|  | |  | Content | Field name | Description |
| chroma | Brior | 0~255 |
| brightness | Coght | 0~255 |
| contrast | Colntrast | 0~255 |
| saturation | Saturation | 0~255 |
| display position | DisPos | 0—left up 1—left down, 2—right up 3—right down |
| live view | Preview | 0--OFF 1--ON |
| channel name | ChnName | 0~12byte |

Demo:

{

"DISPLAY ": {

"--version": "1.0.1.1",

"DisplayType": "1",

"chn0": {

"Brior": "64",

"Coght": "64",

"Colntrast": "304",

"Saturation": "32",

"DisPos": "1",

"Preview": "1",

"ChnName": "1"

},

"chn1": {

"Brior": "64",

"Coght": "64",

"Colntrast": "304",

"Saturation": "32",

"DisPos": "1",

"Preview": "1",

"ChnName": "CH2"

}

}

}

## GSENSOR

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Field Name | GSENSOR | | | |
| loading data description | | | | |
| Content | Field name | Description | | |
| version | --version | "1.0.1.1" | | |
| switch | switch | 0: OFF 1: ON | | |
| unit | unit | reserved | | |
|  | brakedirect | 0: LED panel facing front 1: LED panel facing back | | |
| X direction calibration value | correctx | X direction calibration value | | |
| Y direction calibration value | correcty | Y direction calibration value | | |
| Z direction calibration value | correctz | Z direction calibration value | | |
| direction root node |  | The below name is corresponded to each direction  xalarm—x direction  yalarm—y direction  zalarm—z direction  hitalarm--impact  tiltalarm--tilt  turnalarm - turn  Acceleration – Harsh Acceleration  SharpSlowdown – Harsh slow down | | |
|  |  | Content | Field name | Description |
| enable | enable | 0--OFF 1--ON |
| Threshold | limit | threshold |
| Deley | delay | in tiltalarm node: degree\*10 (0~999),  in other nodes: acceleration\*100 (0~999) g |
| record | record | 0--OFF 1--ON |
| Hold | holdtime | unit: second (0-9999) |
| linkage | linkage | bit0—Alarm output1  bit1—Alarm output 2  bit2—buzzer  bit3—snapshot  bit4—request for intercom  bit5—center server  bit6—GUI prompt |
| Linkage out output | linkOutput | 0-No out output, bit0-output out1, bit1-output out2 |
| Buzzer switch | linkBuzzer | 0-off 1-on |
| Preview mode | linkPreviewMode |  |
| Video lock | linkLockChn | bit0-channel 1, bit1-channel 2, bit2-channel 3… |
| Video upload | linkUploadChn | bit0-channel 1, bit1-channel 2, bit2-channel 3… |
| Snapshot upload | linkSnapChn | bit0-channel 1, bit1-channel 2, bit2-channel 3… |
| Preview channel | PreviewChn | bit0-channel 1, bit1-channel 2, bit2-channel 3… |

Demo:

{

"GSENSOR": {

"--version": "1.0.1.0",

"switch": "0",

"unit": "0",

"brakedirect": "0",

"correctx": "0",

"correcty": "0",

"correctz": "0",

"xalarm": {

"enable": "0",

"limit": "80",

"delay": "0",

"record": "0",

"holdtime": "5",

"linkage": "0",

"PreviewChn": "0",

"linkOutput": "0",

"linkBuzzer": "0",

"linkPreviewMode": "0",

"linkLockChn": "0",

"linkUploadChn": "0",

"linkSnapChn": "0"

},

"yalarm": {

"enable": "0",

"limit": "80",

"delay": "0",

"record": "0",

"holdtime": "5",

"linkage": "0",

"PreviewChn": "0",

"linkOutput": "0",

"linkBuzzer": "0",

"linkPreviewMode": "0",

"linkLockChn": "0",

"linkUploadChn": "0",

"linkSnapChn": "0"

}

}

}

## Alarm input and output

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Field Name | IOSET | | | | |
| loading data description | | | | | |
| Content | | Field name | Description | | |
| version | | --version | "1.0.1.1" (0-16 byte) | | |
| input root node | | input |  | | |
|  | |  | Content | Field name | Description |
| channel root node | chn | chn0 is channel 1, chn1 is channel 2, and so on |
|  |  | please refer to the below input parameter for the exact configuration |
| output root node | | output |  | | |
|  | |  | Content | Field name | Description |
| channel root node | chn | chn0 is channel 1, chn1 is channel 2, and so on |
|  |  | please refer to the below output parameter for the exact configuration |
| Trigger type | | frequency | 0: Periodically 1: one time | | |

|  |  |  |
| --- | --- | --- |
| Alarm Input Parameter | | |
| Content | Field name | Description |
| Name | name |  |
| Enable | enable | [Details](#_IO_input_warning) |
| Level | limit | 0--low, 1--high |
| Delay | delay | Alarm delay duration, unit: second (0-99) |
| Record | record | 0--OFF 1--ON |
| Hold | holdtime | Duration of state protection, unit: second (0-99) |
| linkage | linkage | bit0—alarm output 1  bit1—alarm output 2  bit2—buzzer  bit3—snapshot  bit4—request for intercom  bit5—central server  bit6—GUI prompt |
| live view channel | PreviewChn | channel 1 ~n is corresponding to the number starting from 0 |
|  | MixChn |  |
| Linkage out output | linkOutput | 0-no out output, bit0- output out1, bit1- output out2 |
| Buzzer switch | linkBuzzer | 0-off, 1-on |
| Preview mode | linkPreviewMode |  |
| Video lock | linkLockChn | bit0-channel 1, bit1-channel 2, bit2-channel 3… |
| Video upload | linkUploadChn | bit0-channel 1, bit1-channel 2, bit2-channel 3… |
| Snapshot upload | linkSnapChn | bit0-channel 1, bit1-channel 2, bit2-channel 3… |

|  |  |  |
| --- | --- | --- |
| alarm output parameter | | |
| Content | Field name | Description |
| Name | name |  |
| enable | enable | 0--OFF 1--ON |
|  | limit | 0--low, 1--high |
|  | delay | reserved |
| record | record | 0--OFF 1--ON |
|  | holdtime | reserved |
| linkage | linkage | bit0—alarm output 1  bit1- alarm output 2  bit2—buzzer  bit3—snapshot  bit4—request for intercom  bit5—Central Server  bit6—GUI Prompt |
| live view channel | PreviewChn | channel 1 ~n is corresponding to the number starting from 0 |
|  | MixChn |  |
| Linkage out output | linkOutput | 0-no out output, bit0- output out1, bit1- output out2 |
| Buzzer switch | linkBuzzer | 0-off, 1-on |
| Preview mode | linkPreviewMode |  |
| Video lock | linkLockChn | bit0-channel 1, bit1-channel 2, bit2-channel 3… |
| Video upload | linkUploadChn | bit0-channel 1, bit1-channel 2, bit2-channel 3… |
| Snapshot upload | linkSnapChn | bit0-channel 1, bit1-channel 2, bit2-channel 3… |

Demo:

{

"IOSET": {

"--version": "1.0.1.0",

"input": {

"chn0": {

"name": "in1",

"enable": "0",

"limit": "1",

"delay": "0",

"record": "1",

"holdtime": "5",

"linkage": "1",

"PreviewChn": "1",

"MixChn": "0",

"linkOutput": "0",

"linkBuzzer": "0",

"linkPreviewMode": "0",

"linkLockChn": "0",

"linkUploadChn": "0",

"linkSnapChn": "0"

}

"chn1": {

"name": "in2",

"enable": "0",

"limit": "1",

"delay": "0",

"record": "1",

"holdtime": "5",

"linkage": "1",

"PreviewChn": "1",

"MixChn": "0",

"linkOutput": "0",

"linkBuzzer": "0",

"linkPreviewMode": "0",

"linkLockChn": "0",

"linkUploadChn": "0",

"linkSnapChn": "0"

}

},

"output": {

"chn0": {

"name": "out1",

"enable": "0",

"limit": "0",

"delay": "0",

"record": "0",

"holdtime": "0",

"linkage": "0",

"PreviewChn": "0",

"MixChn": "0",

"linkOutput": "0",

"linkBuzzer": "0",

"linkPreviewMode": "0",

"linkLockChn": "0",

"linkUploadChn": "0",

"linkSnapChn": "0"

}

"chn1": {

"name": "out2",

"enable": "0",

"limit": "0",

"delay": "0",

"record": "0",

"holdtime": "0",

"linkage": "0",

"PreviewChn": "0",

"MixChn": "0",

"linkOutput": "0",

"linkBuzzer": "0",

"linkPreviewMode": "0",

"linkLockChn": "0",

"linkUploadChn": "0",

"linkSnapChn": "0"

}

}

}

}

## Basic Configuration ( for China market only)

Note: Because of the Infrastructure reason, the device ID corresponds to the field phonenum; The device ID is not allowed to change, so the values passed by phonenum are not changed

|  |  |  |
| --- | --- | --- |
| Field Name | JTBASE | |
| loading data description | | |
| Content | Field name | Description |
| version | --version | "1.0.1.1" (0-16 byte) |
| Province Code | province | 0~8 byte |
| City Code | city | 0~8 byte |
| Manufacturer | manufacturer | 0~32 byte |
| Device ID | DevId | 0~32 byte |
| Phonenum | phonenum | 0~16 byte |
| terminal model | model | 0~32 byte |
| terminal ID | TerminalId | 0~32 byte |
|  | color |  |
| vehicle License | license | 0~16 byte |
| center Server 1-protocol type | protocol1 | 0: close, 1: T protocol, 2: H protocol |
| Center server 2 protocol type | protocol2 | 0: close, 1: H protocol, 4: Bubiao protocol |
| GPS interval | gpsInterval | Not used |
| Server 1 GPS interval | gpsInterval1 | Unit: s (0-9999) |
| Server 2 GPS interval | gpsInterval2 | Unit: s (0-9999) |
| GPS position mode | gpsPosMode | 0: default. 1: GPS 2:BD 3:GLONASS 4:GPS+BD 5:GPS+GL |

Demo:

{

"JTBASE": {

"--version": "1.0.1.2",

"province": "9",

"city": "8",

"manufacturer": "99999999999",

"DevId": "88888888888",

"phonenum": "013900000002",

"model": "99999999999",

"TerminalId": "88888888888",

"color": "0",

"license": "AAAAAA",

"protocol1": "1",

"protocol2": "0",

"gpsInterval": "0"

"gpsPosMode": "0"

}

}

## Wired Network

|  |  |  |  |
| --- | --- | --- | --- |
| Field Name | LOCAL | | |
| loading data description | | | |
| Content | | Field name | Description |
| IP address | | ip | 0~20 byte |
| subnet mask | | mask | 0~20 byte |
| gateway | | gw | 0~20 byte |
| domain name | | dns | 0~20 byte |
| MAC address | | mac | 0~20 byte |
| Network connect type | | LinkType | 0-local network, 1-external WIFI, 2-accessaries |
|  | |  |  |
|  | |  |  |

Demo:

{

"LOCAL": {

"--version": "1.0.1.0",

"ip": "192.168.001.010",

"mask": "255.255.255.000",

"gw": "192.168.001.001",

"dns": "113.068.119.068",

"mac": "113.68.119.68",

"LinkType": "0"

}

}

## Motion Detection

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Field Name | MOTIONDETECT | | | | |
| loading data description | | | | | |
| Content | | Field name | Description | | |
| version | | --version | "1.0.1.1" (0-16byte) | | |
| channel root node | | chn | chn0 is channel 1, chn1 is channel 2, and so on. maximum 16 channel | | |
|  | |  | Content | Field name | Description |
| channel root node | chn | chn0 is channel 1, chn1 is channel 2, and so on, maximum 16 channel |
| sensitivity | Sensitivity | (0-6) |
| alarm parameter root node | alarm | alarm linkage triggers relative parameter, refer to the alarm parameter |
| region parameter root node | Rect | motion detection region parameter, refer to the region parameter |
|  |  |  |

|  |  |  |
| --- | --- | --- |
| Alarm Parameter (alarm nodes) | | |
| Content | Field name | Description |
| enable | enable | 0--OFF 1—MOVE 2--COVER |
| Threshold | limit | 0-999 |
| Delay | delay | 0-999 |
| record | record | 0--OFF 1--ON |
|  | holdtime | reserved |
| linkage | linkage | bit0—alarm output 1  bit1—alarm output 2  bit2—buzzer  bit3—snapshot  bit4—request intercom  bit5—center server  bit6—GUI prompt |
| live view channel | PreviewChn | channel 1 ~n is corresponding to the number starting from 0 |
| Linkage out output | linkOutput | 0-no out output, bit0- output out1, bit1- output out2 |
| Buzzer switch | linkBuzzer | 0-off, 1-on |
| Preview mode | linkPreviewMode |  |
| Video lock | linkLockChn | bit0-channel 1, bit1-channel 2, bit2-channel 3… |
| Video upload | linkUploadChn | bit0-channel 1, bit1-channel 2, bit2-channel 3… |
| Snapshot upload | linkSnapChn | bit0-channel 1, bit1-channel 2, bit2-channel 3… |

|  |  |  |
| --- | --- | --- |
| region parameter (invalid) | | |
| Content | Field name | Description |
| Start X coordinate | sx | region start X coordinate |
| start Y coordinate | sy | region start Y coordinate |
| width | width | region Width |
| height | height | region Height |

Demo:

{

"MOTIONDETECT": {

"--version": "1.0.1.0",

"chn0": {

"Sensitivity": "20",

"alarm": {

"enable": "0",

"limit": "1",

"delay": "15",

"record": "1",

"holdtime": "5",

"linkage": "1",

"PreviewChn": "1",

"linkOutput": "0",

"linkBuzzer": "0",

"linkPreviewMode": "0",

"linkLockChn": "0",

"linkUploadChn": "0",

"linkSnapChn": "0"

},

"rect": {

"sx": "1",

"sy": "1",

"width": "1",

"height": "1"

}

}

}

}

## OSD

GUI character display on screen.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Field Name | OSD | | | | |
| loading data description | | | | | |
| Content | | Field name | Description | | |
| version | | --version | "1.0.1.1" (0-16 byte) | | |
| region Node | | region | Region0 is Region 0, Region 1 is Region 2, and so on. There are 9 regions at max. | | |
|  | |  | Content | Field name | Description |
| Start X coordinate | sx | Region Start X coordinate (0-999) |
| Start Y coordinate | sy | Region Start Y coordinate (0-999) |
| width | width | Region width (ignore) |
| Height | height | Region Height (ignore) |
| display type | type | 0--no 1--date 2-- Pulse velocity3—GPS location information 4--text |
| text information | text | 0~64 byte |

Demo:

{

"OSD": {

"--version": "1.0.1.3",

"region0": {

"sx": "50",

"sy": "900",

"width": "304",

"height": "32",

"type": "1",

"text": "CH1"

}

"region1": {

"sx": "50",

"sy": "400",

"width": "304",

"height": "32",

"type": "1",

"text": "CH2"

}

}

}

## Power Management

set power ON/OFF time, configuration.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Field Name | POWER | | | | |
| loading data description | | | | | |
| Content | | Field name | Description | | |
| version | | --version | "1.0.1.1" | | |
| Switch | | switch | 0--OFF 1--ACC 2—schedule | | |
| delay power off | | delay | Second | | |
| screen off time | | ScreenOffTime | Second | | |
| power startup | | PowerOnTime | relative to the exact time (second) in a day | | |
| power off time | | PowerOffTime | relative to the exact time (second) in a day | | |
| ACC power off recording channel | | AccPowerOffRecEnable | Channels keep recording when acc is off. Set by bit.  0--OFF 1—ON. E.g., 15 means 0x0f, so channel 1 – 4 will keep recording | | |
| ACC power off recording time | | AccOffRecTime | Second | | |
| Enable reboot schedule | | TimeRebootEn | 0—off, 1--on | | |
| Scheduled time to reboot | | RebootTime | The second in a day | | |
| week root node | | week | week0 is Sunday, week1 is Monday, and so on | | |
|  | |  | Content | Field name | Description |
| time slot 1 | time0 | xx:xx-xx:xx format, xx means hour and minutes |
| time slot 2 | time1 | Same as above |
| time slot 3 | time2 | Same as above |
| time slot 4 | time3 | Same as above |
| ACC popup | | AccPowerStip | 1. default 2. simplified | | |

Demo:

{

"POWER": {

"--version": "1.0.1.0",

"switch": "1",

"delay": "1",

"AccOffRecTime": "1",

"ScreenOffTime": "3",

"PowerOnTime": "0",

"PowerOffTime": "86399",

"AccPowerOffRecEnable": "15",

" TimeRebootEn": "0",

" RebootTime": "0",

"week0": {

"time0": "00:00-23:59",

"time1": "00:00-00:00",

"time2": "00:00-00:00",

"time3": "00:00-00:00"

}

}

}

## PTZ (not implemented)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Field Name | PTZ | | | | |
| loading data description | | | | | |
| Content | | Field name | Description | | |
| version | | --version | "1.0.1.1" (0-16 byte) | | |
| channel root | | chn | chn0 is channel 1, chn1 is channel 2, and so on. There are 16channels in max. | | |
|  | |  | Content | Field name | Description |
| protocol | Protocol | 0--Pelco-D, 1--Pelco-P |
| number Address | Number | 1~63 |
| preset | Perset | 1~27 |
|  |  |  |

Demo:

{

"PTZ": {

"--version": "1.0.1.0",

"chn0": {

"Protocol ": "1",

"Number": "1",

"Perset": "1"

}

"chn1": {

"Protocol ": "1",

"Number": "2",

"Perset": "1"

}

}

}

## Record

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Field Name | RECORD | | | | |
| loading data description | | | | | |
| Content | | Field name | Description | | |
| version | | --version | "1.0.1.1" (0-16 byte) | | |
| Sysnorm | | SysNorm | 0--PAL 1--NTSC | | |
| recording mode | | RecMode | 0--start 1—schedule 2--alarm | | |
| over writing | | AutoCover | 0--OFF 1--Enable | | |
| Audio output gain | | AOVolume | (invalid) | | |
| pack time | | PackTime | (invalid) | | |
| Video encode format | | EncodeType | 0-H264, 1-H265 | | |
| Display resolution | | DisplayType | 0--720x576 1--1024x768 2--1280x720  3--1920x1080 4--maximize | | |
| camera type | | CameraType | 0—8\*1080P [Means 8 channels 1080P]  1—4\*1080P  2—8\*720P  3—8\*1080N  4—4\*1080P+4\*D1[Mixed mode,4 ch 1080P and 4ch D1]  5—4\*720P+4\*D1  6-- 2\*1080P+6\*720P  7-- 2\*1080P+4\*720P  8-- 2\*1080P+6\*D1  9-- 2\*1080P  10-- 2\*720P  11-- 4\*1080N  12-- 4\*720P  13-- 2\*720P+2\*D1  14-- 4\*D1  15-- 1\*1080P+1\*D1  16-- 4\*D1+4\*720P  17-- 4\*D1+2\*1080N  18-- 2\*1080P+2\*720P  19-- 2\*1080P+2\*D1  20-- 6\*720P+2\*D1  21-- 2\*720P+6\*D1  22-- 8\*960H  23-- 4\*960H  24-- 6\*1080P+2\*960H  25-- 4\*D1+2\*1080P | | |
| time root node | | RecTimers | Summary of time node | | |
|  | |  | Content | Field name | Description |
| time root node | time | Time0 for Sunday, time1 for Monday, and so on. There are 7 root nodes for time.  Refer to the following time period for details |
|  |  |  |
| Main stream root node | | MainChn | Summary of main stream node | | |
|  | |  | Content | Field name | Description |
| channel root node | chn | chn0 is channel 1, chn1 is channel 2, and so on. There are 16channels. for more detail, please refer to the below main stream description |
|  |  |  |
|  |  |  |
|  |  |  |
| sub stream root node | | SubChn | Summary of sub stream node | | |
|  | |  | Content | Field name | Description |
| channel root node | chn | chn0 is channel 1, chn1 is channel 2, and so on. There are 16channels. for more detail, please refer to the below sub stream description |
|  |  |  |
| IPC root node | | IPCChn | summary of IPC root node | | |
|  | |  | Content | Field name | Description |
| channel root node | chn | chn0 is channel 1, chn1 is channel 2, and so on. There are 8channels. for more detail, please refer to the below IPC description |
|  |  |  |

|  |  |  |
| --- | --- | --- |
| Time parameter | | |
| Content | Field name | Description |
| start time1 | start1 | relative to the exact time (second) in a day (0-86399) |
| End time1 | end1 | relative to the exact time (second) in a day (0-86399) |
| start time2 | start2 | relative to the exact time (second) in a day (0-86399) |
| End time2 | end2 | relative to the exact time (second) in a day (0-86399) |

|  |  |  |
| --- | --- | --- |
| main stream parameter | | |
| Content | Field name | Description |
| record | isRec | 0--OFF 1--ON |
| frame rate | FrameRate | 1~25(PAL) 1~30(NTSC) |
| resolution | Resolution | 0--HD1080 1--HD720 2—VGA,  3--D1 4--HD1 5--CIF 6--WD1 |
| quality | Quality | 0(best) ~7 |
| with audio | HaveAudio | 0--OFF 1-ON |
| bit rate | Bitrate |  |
|  | PicLevel |  |
|  | Gop |  |
| mirror | Mirror | 0--OFF 1—left / right mirror 2—up / down mirror 3—Mirror flip |
|  |  |  |

|  |  |  |
| --- | --- | --- |
| sub stream parameter | | |
| Content | Field name | Description |
| record | isRec | 0--OFF 1--ON |
| frame rate | FrameRate | 1~25(PAL), 1~30(NTSC) |
| resolution | Resolution | 0--HD1080, 1--HD720 2—VGA, 3--D1 4--HD1, 5—CIF, 6--WD1 |
| quality | Quality | 0 (best) ~7 |
| with audio | HaveAudio | 0--OFF 1--ON |
| bit rate | Bitrate |  |
|  | PicLevel |  |
|  | Gop |  |
| mirror | Mirror | 0--OFF 1—left / right mirror 2—up/ down mirror 3—Mirror flip |

|  |  |  |
| --- | --- | --- |
| IPC parameter | | |
| Content | Field name | Description |
| switch | isOpen | 0--OFF 1--ON |
| device type | DevType | 0--IPC 1--DVR |
| protocol | Protocol | 0--ONVIF 1-user define |
| remote channel No. | ChlNo |  |
| remote port | CameraPort |  |
| remote address | CameraIP | 0~20 byte |
| user name | UserName | 0~20 byte |
| password | UserPwd | 0~20 byte |
| IPC address | ipcAddr | 0~256 byte |
| rtsp address 1 | rtspUrl\_0 | 0~256 byte |
| rtsp address 2 | rtspUrl\_1 | 0~256 byte |

Demo:

{

"RECORD": {

"--version": "1.0.1.1",

"SysNorm": "0",

"RecMode": "0",

"AutoCover": "1",

"AOVolume": "1",

"AudioType": "1",

"PackTime": "1",

"CameraType": "12",

"RecTimers": {

"time0": {

"start1": "0",

"end1": "12000",

"start2": "0",

"end2": "0"

}

"time0": {

"start1": "12000",

"end1": "86399",

"start2": "0",

"end2": "0"

}

},

"MainChn": {

"chn0": {

"isRec": "1",

"FrameRate": "25",

"Resolution": "1",

"Quality": "4",

"HaveAudio": "1",

"Bitrate": "4096",

"PicLevel": "1",

"Gop": "25",

"Mirror": "0"

}

"chn0": {

"isRec": "1",

"FrameRate": "25",

"Resolution": "1",

"Quality": "4",

"HaveAudio": "1",

"Bitrate": "4096",

"PicLevel": "1",

"Gop": "25",

"Mirror": "0"

}

},

"SubChn": {

"chn0": {

"isRec": "1",

"FrameRate": "6",

"Resolution": "5",

"Quality": "4",

"HaveAudio": "0",

"Bitrate": "1",

"PicLevel": "1",

"Gop": "1"

}

},

"IPCChn": {

"chn0": {

"isOpen": "1",

"DevType": "1",

"Protocol": "1",

"ChlNo": "1",

"CameraPort": "1",

"CameraIP": "1",

"UserName": "1",

"UserPwd": "1",

"ipcAddr": "1",

"rtspUrl\_0": "1",

"rtspUrl\_1": "1"

}

}

}

}

## Serial port

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Field Name | RSBASE | | | | |
| loading data description | | | | | |
| Content | | Field name | Description | | |
| version | | --version | "1.0.1.1" (0-16 byte) | | |
| series node | | rs | rs0 is channel 1, rs1 is channel 2, and so on. There are 8channels. | | |
|  | |  | Content | Field name | Description |
| baudrate | baudrate | baudrate, for example: 9600,  19200, 38400, 57600, 115200 |
| data bit | databit | data bit, 5, 6, 7, 8 |
| stop bit | stopbit | stop bit, 1 or 2 |
| parity bit | parity | parity. 0-Even parity, 1-Odd parity, 2-No parity 3-MarkParity, 4-SpaceParity |
| function | func | 0x00--series port close  0x0--transparent transmission  0x02—PTZ  0x03--external GPS  0x04--user define 1  0x05-user define 2  0x06 --car OBD interface  0x07--Ultrasonic fuel sensor 0  ID: TUWS02-2 manuafacturer:XMXD  0x08-- Ultrasonic fuel sensor 1  ID: TUWS02-2 manufacturer: XMXD  0x09—card swapping machine, manufacturer: DK  0xa—people counting  0xb—Fatigue driving sensor  0xc—TTS. For Chinese voice; Encode with GB2312; Manufacturer: HDKJ  0xd—Capacitive fuel sensor.ID:CR-606 Manufacturer: HNCR  0xe—DAVITEQ Capacitive Fuel Sensor  0xf—Third party transparent transmission  0x10--LLS30160CapacitiveFuel Sensor  0x11—Transparent transmission with ministerial standard protocol  0x100--STD GPS send  0x200—Serial port test |

Demo:

{

"RSBASE": {

"--version": "1.0.1.1",

"rs0": {

"baudrate": "38400",

"databit": "8",

"stopbit": "1",

"parity": "0",

"func": "0"

}

"rs1": {

"baudrate": "11500",

"databit": "8",

"stopbit": "1",

"parity": "0",

"func": "9"

}

}

}

## Central Server setup

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Field Name | SERVER | | | |
| loading data description | | | | |
| Content | Field name | Description | | |
| version | --version | "1.0.1.1" (0-16 byte) | | |
| Server node | server | server0 is server 1, server1 is server 2, and so on, maximum 4 servers | | |
|  |  | Content | Field name | Description |
| switch | enable | 0--OFF 1--ON |
| connection type | conntype | reserved |
| IP address for main server | mainip | IP address for main server, 0~64 byte |
| main port 5V | mainport | main server port (0-65536) |
| main udp port | mainudpport | reserved |
| backup address | bakip | backup server address, 0~64 byte |
| backup port | bakport | backup server port(0-65536) |
| backup udp port | bakudpport | reserved |
|  |  |  |

Demo:

{

"SERVER": {

"--version": "1.0.1.0",

"server0": {

"enable": "1",

"conntype": "0",

"mainip": "192.168.001.37",

"mainport": "6608",

"mainudpport": "8000",

"bakip": "113.108.120.47",

"bakport": "6608",

"bakudpport": "9000"

}

"server1": {

"enable": "0",

"conntype": "0",

"mainip": "192.168.001.121",

"mainport": "6608",

"mainudpport": "8000",

"bakip": "113.108.120.47",

"bakport": "6608",

"bakudpport": "9000"

}

}

}

## Speed parameter

speed setup

|  |  |  |  |
| --- | --- | --- | --- |
| Field Name | SPEED | | |
| loading data description | | | |
| Content | | Field name | Description |
| version | | --version | "1.0.1.1" (0-16 byte) |
| source | | source | 0--GPS 1--OBD 2—mixed |
| unit | | unit | speed unit: 0-km/h, 1-miles per hour, 2- nautical miles per hour |
| Velocity coefficient | | pulse | Coefficient between pulse and velocity (invalid) |
| position mode | | posmode | 0x01—GPS 0x02—beidou 0x03—dual mode |
| stop alarm | | stopalarm | stop alarm sub node, for more detail, please refer to the alarm parameter |
| low speed warning | | lowprealarm | sub node, for more detail, please refer to the alarm parameter |
| low speed alarm | | lowalarm | sub node, for more detail, please refer to the alarm parameter |
| high speed warining | | highprealarm | sub node, for more detail, please refer to the alarm parameter |
| high speed alarm | | highalarm | sub node, for more detail, please refer to the alarm parameter |
| harsh break | | harshbraking | sub node, for more detail, please refer to the alarm parameter |
| harsh acceleration | | harshacc | sub node, for more detail, please refer to the alarm parameter |
| Idling | | idle | sub node, for more detail, please refer to the alarm parameter |
| Vehicle Move | | vehicleMovement | sub node, for more detail, please refer to the alarm parameter |
| Towing Detection | | trailerDetection | sub node, for more detail, please refer to the alarm parameter |

|  |  |  |
| --- | --- | --- |
| Alarm Parameter | | |
| Content | Field name | Description |
| Enable | enable | 0--OFF 1--ON |
| Threshold | limit | (0-999) |
| Delay | delay | alarm delay duration, unit: second (0-999) |
| record | record | 0--OFF 1--ON |
|  | holdtime | Duration of state protection, unit: second (0-999) |
| linkage | linkage | bit0—alarm output 1  bit1—alarm output 2  bit2—buzzer  bit3—snapshot  bit4—request intercom  bit5—center server  bit6—GUI marks |
| Linkage out output | linkOutput | 0-no out output, bit0- output out1, bit1- output out2 |
| Buzzer switch | linkBuzzer | 0-off, 1-on |
| Preview mode | linkPreviewMode |  |
| Video lock | linkLockChn | bit0-channel 1, bit1-channel 2, bit2-channel 3… |
| Video upload | linkUploadChn | bit0-channel 1, bit1-channel 2, bit2-channel 3… |
| Snapshot upload | linkSnapChn | bit0-channel 1, bit1-channel 2, bit2-channel 3… |
| live view channel | PreviewChn | bit0-channel 1, bit1-channel 2, bit2-channel 3… |

Demo:

{

"SPEED": {

"--version": "1.0.1.1",

"source": "0",

"unit": "0",

"pulse": "0",

"posmode": "0",

"stopalarm": {

"enable": "0",

"limit": "0",

"delay": "0",

"record": "0",

"holdtime": "0",

"linkage": "0"

},

"lowprealarm": {

"enable": "0",

"limit": "0",

"delay": "0",

"record": "0",

"holdtime": "0",

"linkage": "2"

},

"lowalarm": {

"enable": "0",

"limit": "10",

"delay": "0",

"record": "0",

"holdtime": "0",

"linkage": "0"

},

}

}

## Storage management setup

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Field Name | STORE | | | | |
| loading data description | | | | | |
| Content | | Field name | Description | | |
| alarm pre-record | | prerecord | Unit: second (0-600) | | |
| alarm post-record | | delayrecord | Unit: second (0-3600) | | |
| Record file protect | | protectEnable | 0—OFF, 1--Enabled | | |
| Record protect days | | protectday | Day (0-365) | | |
|  | | stdThreshold |  | | |
| Encryption switch | | EncryptEnable | 0-OFF 1-ON | | |
| Encryption channel | | EncryptMap | Bit0-channel 1, bit1- channel 2, bit2-channel 3… | | |
| Encryption key | | EncryptKey | 0-32 byte | | |
| alarm recording push switch | | sendEnable | 0—OFF 1--CMS 2--H-FTP 3--FTP | | |
|  | |  |  | | |
| disk info root node | | diskinfo |  | | |
|  | |  | Content | Field name | Description |
|  | |  | disk list | disk | disk0 is disk 0, disk1 is disk 2, and so on. There are 6 disks.  0—no 1—main recording  2--mirror 3--backup |
|  | |  |  |  |  |
|  | | stdpartsize |  | | |
|  | |  | Content | Field name | Description |
| disk list | disk | disk0 is disk 0, disk1 is disk 2, and so on. There are 6 disks.  0—non, 1—main stream recording,  2—mirror, 3—backup.  For more detail info, please refer to the below disk parameter |
|  | | priblksize |  | | |
|  | |  | Content | Field name | Description |
| disk list | disk | disk0 is disk 0, disk1 is disk 2, and so on. There are 6 disks.  0—non, 1—main stream recording, 2—mirror, 3—backup  For more detail info, please refer to the below disk parameter |
| Black box record enable | | VdrEnable | 1—ON 0--OFF | | |
| Black box data write interval | | VdrWtinterval | Unit: s（0~99） | | |

Demo:

{

"STORE": {

"--version": "1.0.1.3",

"prerecord": "10",

"delayrecord": "120",

"protectEnable": "0",

"protectday": "0",

"stdThreshold": "0",

"EncryptEnable": "0",

"EncryptMap": "0",

"EncryptKey": "",

"diskinfo": {

"disk0": "1",

"disk1": "0",

"disk2": "0"

"disk3": "0"

"disk4": "0"

"disk5": "0"

},

"sendEnable": "1",

"stdPartSize": {

"disk0": "0",

"disk1": "0",

"disk2": "0"

"disk3": "0"

"disk4": "0"

"disk5": "0"

},

"priblksize": {

"disk0": "0",

"disk1": "0",

"disk2": "0"

"disk3": "0"

"disk4": "0"

"disk5": "0"

}

}

}

## Temperature

(no setup page in MDVR GUI)

|  |  |  |  |
| --- | --- | --- | --- |
| Field Name | TEMP | | |
| loading data description | | | |
| Content | | Field name | Description |
| unit | | unit |  |
| temperature root node | |  | the below name corresponding to each control type  lalarm—low temperature  halarm—high temperature  for more detail information, please refer to the alarm parameter |

|  |  |  |
| --- | --- | --- |
| alarm parameter | | |
| Content | Field name | Description |
| enable | enable | 0--OFF 1--ON |
|  | limit | the threshold |
|  | delay | alarm delay duration, unit: second |
| record | record | 0--OFF 1--ON |
|  | holdtime | Duration of state protection, unit: second |
| linkage | linkage | bit0—alarm output 1  bit1—alarm output 2  bit2—buzzer  bit3—snapshot  bit4—request intercom  bit5—center server  bit6—GUI prompt |

Demo:

{

"TEMP": {

"--version": "1.0.1.0",

"unit": "0",

"lalarm": {

"enable": "0",

"limit": "11",

"delay": "0",

"record": "0",

"holdtime": "0",

"linkage": "0"

},

"halarm": {

"enable": "0",

"limit": "15",

"delay": "0",

"record": "0",

"holdtime": "0",

"linkage": "17"

}

}

}

## Remote Upgrade

(ftp interface for upgrading is not implemented in firmware yet)

|  |  |  |  |
| --- | --- | --- | --- |
| Field Name | UPGRADE | | |
| loading data description | | | |
| Content | | Field name | Description |
| IP address of Server | | ip | FTP server address, 0~64 byte |
| Port of Server | | port | FTP server port （0~32767） |
| user name | | user | FTP server user name, 0~32 byte |
| password | | passwd | FTP Server password, 0~32 byte |

Demo:

{

"UPGRADE": {

"--version": "1.0.1.0",

"ip": "192.168.001.100",

"port": "21",

"user": "test",

"passwd": "123456"

}

## Video lost

(no setup page in MDVR GUI)

|  |  |  |  |
| --- | --- | --- | --- |
| Field Name | VideoLostAlm | | |
| loading data description | | | |
| Content | | Field name | Description |
| version | | --version | "1.0.1.1" (0-16 byte) |
| channel root node | | chn | chn0 is channel 1, chn1 is channel 2, and so on, there are 16 channels. for more detail, please refer to the configuration parameter |

|  |  |  |
| --- | --- | --- |
| Configuration parameter | | |
| Content | Field name | Description |
| enable | enable | 0--OFF 1--ON |
|  | interval | reserved |
|  | delay | reserved |
|  | holdTime | reserved |
|  | linkage | bit0—alarm output 1  bit1—alarm output 2  bit2—buzzer  bit3—snapshot  bit4—request intercom  bit5—center server  bit6—GUI prompt |

Demo:

{

"VideoLostAlm": {

"--version": "1.0.1.1",

"chn0": {

"enable": "0",

"interval": "600",

"delay": "15",

"holdTime": "60",

"linkage": "0"

},

"chn1": {

"enable": "0",

"interval": "600",

"delay": "15",

"holdTime": "60",

"linkage": "0"

},

"chn2": {

"enable": "0",

"interval": "600",

"delay": "15",

"holdTime": "60",

"linkage": "0"

},

"chn3": {

"enable": "0",

"interval": "600",

"delay": "15",

"holdTime": "60",

"linkage": "0"

}

}

## Video Output

control the video output layout type via remote controller

|  |  |  |  |
| --- | --- | --- | --- |
| Field Name | VIDEOOUT | | |
| loading data description | | | |
| Content | | Field name | Description |
| version | | --version | "1.0.1.1" (0-16 byte) |
| screen mode | | mode | 0—single screen 1-2 screens  2—4 screens 3—6 screens  4—9screens |
|  | | chn | Set by bit |
|  | | ShowNum | reserved |
|  | | LoopTime | reserved |

Demo:

{

"VIDEOOUT": {

"--version": "1.0.1.0",

"mode": "2",

"chn": "15",

"ShowNum": "4",

"LoopTime": "0"

}

}

## Voltage setup

|  |  |  |  |
| --- | --- | --- | --- |
| Field Name | VOLTAGE | | |
| loading data description | | | |
| Content | | Field name | Description |
| version | | --version | "1.0.1.1" (0-16 byte) |
| unit | | powerdelay | delay power off when power voltage is abnormal, unit is second |
| voltage root | |  | The below name is corresponding to each type of control type  lalarm—low voltage  halarm—high voltage  for more detail, please refer to the configuration parameter |

|  |  |  |
| --- | --- | --- |
| Configuration parameters | | |
| Content | Field name | Description |
| enable | enable | 0--OFF 1--ON |
| threshold | limit | lalarm （8.5~24）  halarm （12~36） |
|  | delay | alarm delay duration, unit: second (0-999) |
| record | record | 0--OFF 1--ON |
|  | holdtime | Duration of state protection, unit: second (0~999) |
| linkage | linkage | bit0—alarm output 1  bit1-- alarm output 2  bit2—buzzer  bit3—snapshot  bit4—request intercom  bit5—center server  bit6--GUI prompt |
| Linkage out output | linkOutput | 0-no out output, bit0- output out1, bit1- output out2 |
| Buzzer switch | linkBuzzer | 0-off, 1-on |
| Preview mode | linkPreviewMode |  |
| Video lock | linkLockChn | bit0-channel 1, bit1-channel 2, bit2-channel 3… |
| Video upload | linkUploadChn | bit0-channel 1, bit1-channel 2, bit2-channel 3… |
| Snapshot upload | linkSnapChn | bit0-channel 1, bit1-channel 2, bit2-channel 3… |
| live view channel | PreviewChn | bit0-channel 1, bit1-channel 2, bit2-channel 3… |

Demo:

"VOLTAGE": {

"--version": "1.0.1.0",

"powerdelay": "0",

"lalarm": {

"enable": "0",

"limit": "110",

"delay": "0",

"record": "1",

"holdtime": "0",

"linkage": "0",

"PreviewChn": "0",

"linkOutput": "0",

"linkBuzzer": "0",

"linkPreviewMode": "0",

"linkLockChn": "0",

"linkUploadChn": "0",

"linkSnapChn": "0"

},

"halarm": {

"enable": "0",

"limit": "150",

"delay": "0",

"record": "1",

"holdtime": "0",

"linkage": "0",

"PreviewChn": "0",

"linkOutput": "0",

"linkBuzzer": "0",

"linkPreviewMode": "0",

"linkLockChn": "0",

"linkUploadChn": "0",

"linkSnapChn": "0"

}

}

}

## WIFI setup

|  |  |  |  |
| --- | --- | --- | --- |
| field name | WIFI | | |
| loading data description | | | |
| Content | | Field name | Description |
| version | | --version | "1.0.1.1" (0-16 byte) |
| module open | | isOpen | 0--OFF 1--ON |
| password open | | EncSw | 0--OFF 1--ON |
| authorized mode | | AuthMode | 0—open type 1—share mode  2--WPA 3--WPA-PS |
| encryption | | Encrypt | 0--No 1—WEP  2--TKIP 3--AES |
| Purpose | | Purpose | 0--Station, 1--AP |
| Dhcp | | Dhcp | 1-DHCP, 0—static IP |
| SSID | | SSID | 0~32 byte |
| password | | Pwd | 0~16 byte |
| IP address | | IpAddr | 0~20 byte |
| Subnet masker | | SubNet | 0~20 byte |
| gateway | | GateWay | 0~20 byte |

Demo:

{

"WIFI": {

"--version": "1.0.1.0",

"isOpen": "0",

"EncSw": "1",

"AuthMode": "3",

"Encrypt": "2",

"Purpose": "0",

"Dhcp": "1",

"SSID": "howen",

"Pwd": "123123",

"IpAddr": "192.168.002.202",

"SubNet": "255.255.255.000",

"GateWay": "192.168.002.002"

}

}

## DLT setting for magnetic card reader



If the portNumber is modified, you must reset the configuration of the corresponding serial port through the serial port management.

The new serial port configuration is: (where rs0 is the newly modified portNumber)  
 "rs0": {

"baudrate": "9600",

"databit": "8",

"stopbit": "1",

"parity": "2",

"func": "15"

}

|  |  |  |
| --- | --- | --- |
| Field name | TaiDLT | |
| loading data description | | |
| Content | Field name | Description |
| Enable or not | enable | 0—disabled, 1—enabled |
| Upload moe | uploadMode | 1—Driver swipe card， 2—Swipe card proxy |
| Serial port number | portNumber | 0, 1, 2: serial port 1, 2, 3. Other number: invalid |
| Valid license | validLicense | |  |  |  | | --- | --- | --- | | Content | Field name | Description | | Valid license type | item | Example: 11 | | Valied license type | item | Example: 21 | | Remarks: item field, its corresponding value is an array item0 is first valid card, item1 is second valid card, and so on | | | |
|  | beepStartCommand | Start command of “di-di-di” sound, the value is BZ01Txxxx format, where xxxx is the number of milliseconds, from 0050~9999 |
|  | beepStopCommand | Stop command of “di-di-di” sound, the value is BZ01Txxxx format, where xxxx is the number of milliseconds, from 0050~9999 |
|  | beepTimeOut | Controls the time interval the sound loop, 100 to 9999, in milliseconds |
|  | stopBeepWithoutSwipeCard | The time (unit:Minute) )that the “didi” sound lasts, when nobody swipe card |

Loading data sample:

{

“TaiDLT”:{

“enable”:”1”,

“uploadMode”:”1”,

“portNumber”:”0”,

“validLicense”:{

“item0”:”11”,

“item1”:”21”

},

“beepStartCommand”:”BZ01T0100”,

“beepStopCommand”:”BZ01T0000”,

“beepTimeOut”:”500”

“stopBeepWithoutSwipeCard”:”30”

}

}

remark: the previous data structure is : “items” :[11,12], when obtain DLT parameter, only last parameter can be obtained, that is 12 ( this is due to xml format convert to json, only last data obtain, the xml format is not correct, so modified it to be new format)

## Set valid driver card

### Configure driver valid card

|  |  |  |
| --- | --- | --- |
| Field Name |  | |
| Load data description | | |
| Content | Field name | Description |
| Action | act | 1 : obtain parameter, 0: set parameter |
| User define type | type | User define type, default is 253 ( it’s fixed) |
| Data length | len | Data length( it has to be a multiple of 8, valid card length is 8) |
| Driver valid card | data | Valid card (if more than one valid card, just input more card, no need split in between) |

Loading data sample:

{

"UserDefineHowen":{

"act":0,

"type":253,

"len":16,

"data":"A9123456B8654321"

}

}

Note: The Infrastructure call to SetConfig saves the string into hexadecimal ASCII code in the configuration file of Userdefineconfig253.xml, and then converts it back to the string at GetConfig. So, after calling the interface that gets the parameters, it gets the hexadecimal ASCII code, which needs to be converted into a string. The format of the returned data is as follows:

{

"USRDEF":{

"data":"41393132333435364238363534333231",

"len":"16"

}

}

### Timing snapshot

|  |  |  |
| --- | --- | --- |
| Field |  | |
| Load description | | |
| Content | Field | Description |
| Action | act | 1 means get parameters, 0 means set parameters |
| User-defined type | type | Fixed at 300 |
| Data | data |  |
| Task type | res | 0-off, 1-main stream, 2-sub stream |
| Number of channels | channels | Decimal, short type, each represents a channel |
| Intervals | interval | Second |

Sample:

{

"UserDefineHowen":{

"act":0,

"type":300,

"data":{

“res”:0,

“channels”:1,

“interval”:12

}

}

}

### Buzzer parameter setting

|  |  |  |
| --- | --- | --- |
| Field name |  | |
| Load description | | |
| Content | Field name | Description |
| Action | act | 1 means get parameters, 0 means set parameters |
| User-defined type | type | Fixed at 301 |
| Data | data |  |
| Mission type | switch | 0-switch off，1-switch on |
| Number of channels | keepTime | 0 long beep; 10, 20, 30, etc Means the time of long beep duration |

Example:

{

"UserDefineHowen":{

"act":0,

"type": 301,

"data":{

“switch”:0,

“keepTime”: 0

}

}

}

### Driver's license settings

|  |  |  |
| --- | --- | --- |
| Field name |  | |
| Load description | | |
| Content | Field name | Description |
| Action | act | 1 means get parameters, 0 means set parameters |
| User-defined type | type | Fixed number254 |
| Data | data | Array of driver’s license numbers, up to two, a single maximum of 63 bytes |

Example:

{

"UserDefineHowen":{

"act":0,

"type": 254,

"data": [

“dirver license”,

“dirver license”

]

}

}

## Setup DMS ADAS alarm linkage (HW-DMAD01)

|  |  |  |
| --- | --- | --- |
| Filed |  | |
| Load data description | | |
| Content | Field name | Description |
| ADAS type | adas | |  |  |  | | --- | --- | --- | | Content | Field name | Description | | Rule name | item0 | Rule 1 | | ADAS alarm type | type | Refer to alarm type | | Output Swith (ON/OFF) | outsw | 0-OFF, 1-ON | | Remark: item0 is first rule, item1 is second rule, and so on | | | |
| DMS type | dms | |  |  |  | | --- | --- | --- | | Content | Field name | Description | | Rule name | item0 | Rule 1 | | DMS alarm type | type | Refer to alarm type | | Output switch(ON/OFF) | outsw | 0-OFF, 1-ON | | Remark: item0 is first rule, item1 is second rule, and so on | | | |

Loading data sample:

{

"ActiveSafety":{

"adas":{

"item0":{

"type":"11",

"outsw":1

},

"item1":{

"type":"12",

"outsw":0

}

},

"dms":{

"item0":{

"type":"65",

"outsw":1

},

"item1":{

"type":"66",

"outsw":0

}

}

}

}

## GPS angle optimization parameter configuration

|  |  |
| --- | --- |
| Field Name | Pls refer 2.15 |

Example000:

{

"gpsAngleConfig":{

"act":"1",

"on":"1",

"dg":"2000"

}

}

## DMS parameter settings

|  |  |  |  |
| --- | --- | --- | --- |
| Field Name | DMS | | |
| Load description | | | |
| Content | | Field name | Description |
| Dms camera channel | | chn | From 1 |
| Active photo strategy | | PhotoPolicy | 0: Not open 1: Timed photo 2: Fixed distance photo 3: Card trigger |
| Snapshot interval | | PhotoTimeInterval | The unit is second, the value range is 60~60000, the default value is 3600, 255 means not to modify the parameter |
| Active fixed distance camera distance interval | | PhotoDistInterval | The unit is meter, the value range is 0~60000, the default value is 200, 0 means no capture, 65535 means no parameter modification, and it is valid when the active camera strategy is 2 |
| Number of photos taken at a time | | PhotoNumOneTime | Value range 1-10 |
| Time interval of single active photo | | TimeIntervalOneTime | The unit is 100ms, the value range is 1~5 |
| Photo resolution | | PhotoResolution | 1: 352×288， 2: 704×288，3: 704×576，4: 640×480，5: 1280×720，6: 1920×1080 |
| Video recording resolution | | VideoResolution | 1: CIF, 2: HD1,3: D1, 04: WD1,5: VGA, 6: 720P, 7: 1080P |
| Distracted driving angle left | | YawLeft | Range : [-45，-35] |
| Distracted driving angle right | | YawRight | Range : [25，35] |
| Distracted driving angle | | PitchUp | Range : [15，25] |
| Distracted driving angle | | PitchDown | Range : [-25，-15] |

|  |  |  |
| --- | --- | --- |
| DMS function |  | Function list  call\_alarm--calling  smoke\_alarm--smoking  close\_eys\_alarm--eye closing  yawn\_alarm--yawning  distract\_driving\_alarm--distraction  driver\_abnormal\_alarm--driver left  ir\_blocking\_alarm--Infrared sunglasses  seatbelt\_unfastened\_alarm--Seatbelt detection  lens\_covered\_alarm--lens covered  pls check the configuration details |

|  |  |  |
| --- | --- | --- |
| Parameters | | |
| Content | Field name | Description |
| enable | enable | 0--off 1--on |
| threshold | limit | （0~999） |
|  | delay | Alarm delay time, in seconds（5~3600） |
| Video recording | record | 0--off 1--on |
|  | holdtime | State anti-shake hold time, unit second（0~5） |
| Linkage | linkage | bit0--Level output 1 bit1--Level output 2 bit2--buzzer bit3--Snapshot and report bit4--Request intercom bit5--Center Service bit6--GUI remind |
| Linkage out output | linkOutput | 0--off out output，bit0--output out1，bit1--output out2 |
| Buzzer switch | linkBuzzer | 0--off 1--on |
| Preview mode | linkPreviewMode |  |
| Video lock | linkLockChn | bit0--channel 1，bit1--channel 2，bit2--channel 3 ... |
| Video upload | linkUploadChn | bit0--channel 1，bit1--channel 2，bit2--channel 3 ... |
| Alarm trigger hold time | AlmTrigerHoldTime | Range [0.5-10],unit: second |
| Alarm photo interval | PhotoInterval | Unit: 100ms , Range 1~10 |
| Number of alarm photos | PhotoNum | Range [0-5] |
| Linkage preview channel | PreviewChn | bit0--Range 1，bit1--Range 2，bit2--Range 3 ... |
| Unmarked parameters do not support remote configuration of the platform for the time being | | |

{

"DMS": {

"PhotoDistInterval": "200",

"PhotoNumOneTime": "1",

"PhotoPolicy": "0",

"PhotoResolution": "1",

"PhotoTimeInterval": "3600",

"PitchDown": "-20",

"PitchUp": "20",

"TimeIntervalOneTime": "2",

"VideoResolution": "1",

"YawLeft": "-40",

"YawRight": "30",

"call\_alarm": {

"AlmTrigerHoldTime": "2.0",

"PhotoInterval": "2",

"PhotoNum": "1",

"PreviewChn": "1",

"delay": "10",

"enable": "1",

"holdtime": "5",

"limit": "10",

"linkBuzzer": "1",

"linkLockChn": "0",

"linkOutput": "0",

"linkPreviewMode": "0",

"linkSnapChn": "1",

"linkUploadChn": "1",

"linkage": "0",

"record": "1"

},

"chn": "1",

"close\_eys\_alarm": {

"AlmTrigerHoldTime": "1.0",

"PhotoInterval": "2",

"PhotoNum": "1",

"PreviewChn": "1",

"delay": "10",

"enable": "1",

"holdtime": "5",

"limit": "10",

"linkBuzzer": "1",

"linkLockChn": "0",

"linkOutput": "0",

"linkPreviewMode": "0",

"linkSnapChn": "1",

"linkUploadChn": "1",

"linkage": "0",

"record": "1"

},

"distract\_driving\_alarm": {

"AlmTrigerHoldTime": "1.0",

"PhotoInterval": "2",

"PhotoNum": "1",

"PreviewChn": "1",

"delay": "10",

"enable": "1",

"holdtime": "5",

"limit": "10",

"linkBuzzer": "1",

"linkLockChn": "0",

"linkOutput": "0",

"linkPreviewMode": "0",

"linkSnapChn": "1",

"linkUploadChn": "1",

"linkage": "0",

"record": "1"

},

"driver\_abnormal\_alarm": {

"AlmTrigerHoldTime": "3.0",

"PhotoInterval": "2",

"PhotoNum": "1",

"PreviewChn": "1",

"delay": "300",

"enable": "1",

"holdtime": "5",

"limit": "10",

"linkBuzzer": "1",

"linkLockChn": "0",

"linkOutput": "0",

"linkPreviewMode": "0",

"linkSnapChn": "1",

"linkUploadChn": "1",

"linkage": "0",

"record": "1"

},

"ir\_blocking\_alarm": {

"AlmTrigerHoldTime": "2.0",

"PhotoInterval": "2",

"PhotoNum": "1",

"PreviewChn": "1",

"delay": "10",

"enable": "1",

"holdtime": "5",

"limit": "50",

"linkBuzzer": "1",

"linkLockChn": "0",

"linkOutput": "0",

"linkPreviewMode": "0",

"linkSnapChn": "1",

"linkUploadChn": "1",

"linkage": "0",

"record": "1"

},

"lens\_covered\_alarm": {

"AlmTrigerHoldTime": "3.0",

"PhotoInterval": "2",

"PhotoNum": "1",

"PreviewChn": "1",

"delay": "300",

"enable": "1",

"holdtime": "5",

"limit": "10",

"linkBuzzer": "1",

"linkLockChn": "0",

"linkOutput": "0",

"linkPreviewMode": "0",

"linkSnapChn": "1",

"linkUploadChn": "1",

"linkage": "0",

"record": "1"

},

"seatbelt\_unfastened\_alarm": {

"AlmTrigerHoldTime": "4.0",

"PhotoInterval": "2",

"PhotoNum": "1",

"PreviewChn": "1",

"delay": "900",

"enable": "1",

"holdtime": "5",

"limit": "10",

"linkBuzzer": "1",

"linkLockChn": "0",

"linkOutput": "0",

"linkPreviewMode": "0",

"linkSnapChn": "1",

"linkUploadChn": "1",

"linkage": "0",

"record": "1"

},

"smoke\_alarm": {

"AlmTrigerHoldTime": "2.0",

"PhotoInterval": "2",

"PhotoNum": "1",

"PreviewChn": "1",

"delay": "10",

"enable": "1",

"holdtime": "5",

"limit": "10",

"linkBuzzer": "1",

"linkLockChn": "0",

"linkOutput": "0",

"linkPreviewMode": "0",

"linkSnapChn": "1",

"linkUploadChn": "1",

"linkage": "0",

"record": "1"

},

"yawn\_alarm": {

"AlmTrigerHoldTime": "1.0",

"PhotoInterval": "2",

"PhotoNum": "1",

"PreviewChn": "1",

"delay": "10",

"enable": "1",

"holdtime": "5",

"limit": "10",

"linkBuzzer": "1",

"linkLockChn": "0",

"linkOutput": "0",

"linkPreviewMode": "0",

"linkSnapChn": "1",

"linkUploadChn": "1",

"linkage": "0",

"record": "1"

}

}}

## ADAS parameter settings

|  |  |  |  |
| --- | --- | --- | --- |
| Field | ADAS | | |
| Load description | | | |
| Content | | Field | Description |
| Adas camera | | chn | From 1 |
| Active photo strategy | | PhotoPolicy | 0: Not open 1: Timed photo 2: Fixed distance photo 3: Card trigger |
| Snapshot interval | | PhotoTimeInterval | The unit is second, the value range is 60~60000, the default value is 3600, 255 means not to modify the parameter vv |
| Active fixed distance camera distance interval | | PhotoDistInterval | The unit is meter, the value range is 0~60000, the default value is 200, 0 means no capture, 65535 means no parameter modification, and it is valid when the active camera strategy is 2 |
| Number of photos taken at a time | | PhotoNumOneTime | Ranges[1-10] |
| Time interval of single active photo | | TimeIntervalOneTime | Unit 100ms，Range [1-5] |
| Forward collision sensitivity | | fcw\_sensitivity | Range [0-15] |
| Sensitivity of car distance too close | | hmw\_sensitivity | Range [0-15] |
| Lane departure sensitivity | | ldw\_sensitivity | Range [0-20] |
| Pedestrian collision sensitivity | | pcw\_sensitivity | Range [0-15] |
| Start sensitivity of the vehicle ahead | | psw\_sensitivity | Range [0-15] |
| ADAS | |  | Function list  fcw\_alarm--Forward collision  hmw\_alarm--Car is too close  ldw\_alarm--Lane departure  pcw\_alarm--Pedestrian collision  psw\_alarm--Front car starts |
|  | |  |  |
|  | |  |  |

|  |  |  |
| --- | --- | --- |
| Configuration parameter | | |
| Content | Field | Description |
| enable | enable | 0--off 1--on |
| Threshold | limit | (0-999) |
|  | delay | Alarm delay time, in seconds（5~3600） |
| Recording | record | 0--off 1--on |
|  | holdtime | State anti-shake hold time, unit second（0~5） |
| Linkage | linkage | bit0--level output 1  bit1--level output 2  bit2--buzzer  bit3--Snapshot and report  bit4--request intercom  bit5--center service  bit6--GUI prompt |
| Linkage out output | linkOutput | 0--no out output，bit0--output out1，bit1--output out2 |
| Buzzer switch | linkBuzzer | 0--off 1--on |
| Preview mode | linkPreviewMode |  |
| Video lock | linkLockChn | bit0--channel 1，bit1--channel 2，bit2--channel 3 ... |
| Video upload | linkUploadChn | bit0--channel 1，bit1--channel 2，bit2--channel 3 ... |
| Alarm trigger hold time | AlmTrigerHoldTime | Unit 100ms , range 1~10 |
| Alarm photo interval | PhotoInterval | Range [0-5] |
| Number of alarm photos | PhotoNum | bit0--channel 1，bit1--channel 2，bit2--channel 3 ... |
| Unmarked parameters do not support remote configuration of the platform for the time being | | |

{

"ADAS": {

"PhotoDistInterval": "200",

"PhotoNumOneTime": "1",

"PhotoPolicy": "0",

"PhotoResolution": "1",

"PhotoTimeInterval": "3600",

"TimeIntervalOneTime": "2",

"VideoResolution": "1",

"cam\_dist\_axle": "171",

"cam\_dist\_head": "171",

"camera\_height": "130",

"chn": "0",

"fcw\_alarm": {

"PhotoInterval": "2",

"PhotoNum": "1",

"PreviewChn": "1",

"delay": "5",

"enable": "1",

"holdtime": "5",

"limit": "30",

"linkBuzzer": "1",

"linkLockChn": "0",

"linkOutput": "0",

"linkPreviewMode": "0",

"linkSnapChn": "1",

"linkUploadChn": "1",

"linkage": "0",

"record": "1"

},

"fcw\_sensitivity": "5",

"hmw\_alarm": {

"PhotoInterval": "2",

"PhotoNum": "1",

"PreviewChn": "1",

"delay": "30",

"enable": "1",

"holdtime": "5",

"limit": "30",

"linkBuzzer": "1",

"linkLockChn": "0",

"linkOutput": "0",

"linkPreviewMode": "0",

"linkSnapChn": "1",

"linkUploadChn": "1",

"linkage": "0",

"record": "1"

},

"hmw\_sensitivity": "5",

"horizon\_line": "539",

"iCameraCenter": "0",

"iHood": "1079",

"ldw\_alarm": {

"PhotoInterval": "2",

"PhotoNum": "1",

"PreviewChn": "1",

"delay": "5",

"enable": "1",

"holdtime": "5",

"limit": "50",

"linkBuzzer": "1",

"linkLockChn": "0",

"linkOutput": "0",

"linkPreviewMode": "0",

"linkSnapChn": "1",

"linkUploadChn": "1",

"linkage": "0",

"record": "1"

},

"ldw\_sensitivity": "10",

"pcw\_alarm": {

"PhotoInterval": "2",

"PhotoNum": "1",

"PreviewChn": "1",

"delay": "5",

"enable": "1",

"holdtime": "5",

"limit": "30",

"linkBuzzer": "1",

"linkLockChn": "0",

"linkOutput": "0",

"linkPreviewMode": "0",

"linkSnapChn": "1",

"linkUploadChn": "1",

"linkage": "0",

"record": "1"

},

"pcw\_sensitivity": "5",

"psw\_alarm": {

"PhotoInterval": "2",

"PhotoNum": "1",

"PreviewChn": "1",

"delay": "5",

"enable": "1",

"holdtime": "5",

"limit": "0",

"linkBuzzer": "1",

"linkLockChn": "0",

"linkOutput": "0",

"linkPreviewMode": "0",

"linkSnapChn": "1",

"linkUploadChn": "1",

"linkage": "0",

"record": "1"

},

"psw\_sensitivity": "0",

"vehicle\_Mid\_line": "0",

"vehicle\_width": "174"

}}

## MASK Parameter Setting

|  |  |  |  |
| --- | --- | --- | --- |
| Section name | MASK | | |
| Load description | | | |
| Content | Section name | Description | |
| The camera | CHn | Channel N starts at 0 | |
| Regioin | regionn | Region n starts at 0 | |
|  |  | Section name | Description |
| enable | Switch 0-- off 1-- on |
| color | Color 0- white 1- black 2- red 3- blue 4- yellow 5- green 6- orange 7- cyan |
| sx | X coordinate |
| sy | y |
| width |  |
| height |  |

{

"MASK": {

"CH0": {

"region0": {

"color": "1",

"enable": "0",

"height": "100",

"sx": "100",

"sy": "100",

"width": "100"

},

"region1": {

"color": "1",

"enable": "0",

"height": "100",

"sx": "300",

"sy": "300",

"width": "100"

},

"region2": {

"color": "1",

"enable": "0",

"height": "100",

"sx": "500",

"sy": "500",

"width": "100"

},

"region3": {

"color": "1",

"enable": "0",

"height": "100",

"sx": "700",

"sy": "700",

"width": "100"

}

},

"CH1": {

"region0": {

"color": "1",

"enable": "0",

"height": "100",

"sx": "100",

"sy": "100",

"width": "100"

},

"region1": {

"color": "1",

"enable": "0",

"height": "100",

"sx": "300",

"sy": "300",

"width": "100"

},

"region2": {

"color": "1",

"enable": "0",

"height": "100",

"sx": "500",

"sy": "500",

"width": "100"

},

"region3": {

"color": "1",

"enable": "0",

"height": "100",

"sx": "700",

"sy": "700",

"width": "100"

}

}

}

}

## Sleep mode parameter configuration

|  |  |  |
| --- | --- | --- |
| Section name | WakeUpConfig | |
| Load description | | |
| Content | Section name | Description |
| Timing boot | TimeSwitch | 0- Off 1- on |
| Timing startup duration | DormantTime |  |
| I/O Triggered startup switch | IOSwitch | 0- Off 1- on |
| IO values | IOTriggered | Bit0 - IO1, bit1 - IO2 |
| Gsensor hits triggered power switch | SensorSwitch | 0- Off 1- on |
| Gsensor value | SensorTriggered |  |
| Capture at startup | SnapBitmap | Bit0 -- channel 1, bit1-- channel 2, bit2-- channel 3... |
| Report Gps after startup | UploadGPS | 0- Off 1- on |
| Switch on the video | RecordBitmap | Bit0 -- channel 1, bit1-- channel 2, bit2-- channel 3... |
| The running time | FunctionTime |  |

{

"WakeUpConfig": {

"DormantTime": "0",

"FunctionTime": "0",

"IOTriggered": "0",

"RecordBitmap": "0",

"SensorSwitch": "0",

"SensorTriggered": "0",

"SnapBitmap": "0",

"IOSwitch": "0",

"TimeSwitch": "0",

"UploadGPS": "0"

}

}

## Driver Face Recognition alarm linkage configuration

|  |  |  |
| --- | --- | --- |
| Section name | faceReInfo | |
| Load description | | |
| Content | Section name | Description |
| Face event linkage main switch | faceEnable | 0-- off 1-- on |
| Event root node |  | The following names correspond to the various control types  AuthenticationFailure\_alarm -- Authentication fails  AuthenticationSuccess\_alarm -- Authentication succeeds  DriverBack\_alarm - The driver returns to work  DriverGuard\_alarm - The driver leaves his post  For details, see the following configuration parameters |

|  |  |  |
| --- | --- | --- |
| The event Content | | |
| Content | Section name | Description |
| To enable the | enable | 0-1 - open |
| video | record | 0-1 - open |
| The pre - recorded time | holdtime | Unit of second (0-5) |
| linkage | linkage | Bit0 -- level output 1  bit1-- level output 2  bit2-- buzzer  bit3 -- Capture report  bit4 -- Request intercom  bit5-- Central service  bit6--GUI prompt |
| Linkage out output | linkOutput | 0-- not out output,  bit0-- out1 output,  bit1-- out2 output |
| Buzzer switch | linkBuzzer | 0-- off, 1-- on |
| Preview mode | linkPreviewMode |  |
| Video lock | linkLockChn | Bit0 -- channel 1,  bit1-- channel 2, b  it2-- channel 3... |
| Video report | linkUploadChn | Bit0 -- channel 1,  bit1-- channel 2,  bit2-- channel 3... |
| Alarm photo interval | PhotoInterval | Unit: 100ms the value ranges from 1 to 10 |
| Number of alarm photos taken | PhotoNum | The range [0-5] |
| Linked preview channel | PreviewChn | Bit0 -- channel 1, bit1-- channel 2, bit2-- channel 3... |
| Unspecified parameters do not support remote configuration of the platform | | |

{

"faceReInfo": {

"CmpBetween": "0",

"CmpTimeOut": "0",

"authenticationFailure\_alarm": {

"PreviewChn": "0",

"delay": "0",

"enable": "0",

"holdtime": "0",

"limit": "0",

"linkBuzzer": "0",

"linkLockChn": "0",

"linkOutput": "0",

"linkPreviewMode": "0",

"linkSnapChn": "0",

"linkUploadChn": "0",

"linkage": "0",

"record": "0"

},

"authenticationSuccess\_alarm": {

"PreviewChn": "0",

"delay": "0",

"enable": "0",

"holdtime": "0",

"limit": "0",

"linkBuzzer": "0",

"linkLockChn": "0",

"linkOutput": "0",

"linkPreviewMode": "0",

"linkSnapChn": "0",

"linkUploadChn": "0",

"linkage": "0",

"record": "0"

},

"driverBack\_alarm": {

"PreviewChn": "2",

"delay": "0",

"enable": "1",

"holdtime": "5",

"limit": "0",

"linkBuzzer": "1",

"linkLockChn": "0",

"linkOutput": "0",

"linkPreviewMode": "0",

"linkSnapChn": "2",

"linkUploadChn": "2",

"linkage": "4",

"record": "1"

},

"driverGuard\_alarm": {

"PreviewChn": "2",

"delay": "0",

"enable": "1",

"holdtime": "5",

"limit": "0",

"linkBuzzer": "1",

"linkLockChn": "0",

"linkOutput": "0",

"linkPreviewMode": "0",

"linkSnapChn": "2",

"linkUploadChn": "2",

"linkage": "4",

"record": "1"

},

"faceEnable": "1"

}

## Passenger counting Configuration

|  |  |  |  |
| --- | --- | --- | --- |
| Section name | HWPCSINFO | | |
| Load description | | | |
| Content | Section name | Description | |
| The root node | devn | Node n starts at 0 | |
|  |  | Section name | Description |
| BusId | Bus ID |
| DevId | Device ID |

{

"HWPCSINFO": {

"DEVINFO": {

"dev0": {

"BusId": "0",

"DevId": "0"

},

"dev1": {

"BusId": "0",

"DevId": "0"

},

"dev2": {

"BusId": "0",

"DevId": "0"

},

"dev3": {

"BusId": "0",

"DevId": "0"

}

}

}

}

## Extend Parameter

|  |  |  |  |
| --- | --- | --- | --- |
| Field | EXTEXTALARM | | |
| Load Descriptino | | | |
| Content | | Field name | Description |
| Version | | --version | "1.0.1.1" |
| Regular position sttus | | regularpositionAlarm | sub node, for more detail, please refer to the alarm parameter |
| Non-trip position | | NonTripPositionAlarm | sub node, for more detail, please refer to the alarm parameter |
| GPS Loss | | gpsLost | sub node, for more detail, please refer to the alarm parameter |
| GPS recover | | gpsRecovery | sub node, for more detail, please refer to the alarm parameter |
| Free-wheeling | | neutralGear | sub node, for more detail, please refer to the alarm parameter |
| RPM exceed | | highSpeed | sub node, for more detail, please refer to the alarm parameter |

|  |  |  |
| --- | --- | --- |
| Alarm parameter | | |
| Content | Field name | Description |
| Enable | enable | 0--off 1--on |
| Threshold | limit | Threshold of ignition ON/OFF: 0-14400 seconds  Threshold of PS lost, GPS recovery: 0-3600 seconds  Neutral sliding, high engine RPM: 0-20000 units RPM/MIN (revolution/min) |
| Speed threshold | delay | delay field is a specific field for the neutral sliding type, and other types do not have this field  Range: 0-100 KM/H |
| Record | record | 0--off 1--on |
| Linkage | linkage | bit0--output 1  bit1--output 2  bit2--buzzer  bit3-- capture and report  bit4--request intercom  bit5--Central service  bit6--GUI prompt |
| Link output | linkOutput | 0—no output，bit0--out1，bit1--out2 |
| Buzzer switch | linkBuzzer | 0--off， 1--on |
| Preview mode | linkPreviewMode |  |
| Record lock | linkLockChn | bit0--channel 1, bit1--channel 2, bit2--channel 3... |
| Video upload | linkUploadChn | bit0--channel 1, bit1--channel 2, bit2--channel 3... |
| Snapshot upload | linkSnapChn | bit0--channel 1, bit1--channel 2, bit2--channel 3... |
| Preview channel | PreviewChn | bit0--channel 1, bit1--channel 2, bit2--channel 3... |
|  | | |

Note: The delay field is a specific field for the free-wheeling type, and other types do not have this field

Range: 0-100 KM/H

Example:

{

"EXTEXTALARM": {

"--version": "1.0.1.1",

"regularpositionAlarm": {

"enable": "0",

"delay": "0",

"limit": "0",

"holdtime": "0",

"record": "0",

"linkage": "0",

"PreviewChn": "0",

"linkOutput": "0",

"linkBuzzer": "0",

"linkPreviewMode": "0",

"linkLockChn": "0",

"linkUploadChn": "0",

"linkSnapChn": "0"

},

"NonTripPositionAlarm": {

"enable": "0",

"delay": "0",

"limit": "0",

"holdtime": "0",

"record": "0",

"linkage": "0",

"PreviewChn": "0",

"linkOutput": "0",

"linkBuzzer": "0",

"linkPreviewMode": "0",

"linkLockChn": "0",

"linkUploadChn": "0",

"linkSnapChn": "0"

},

"neutralGear": {

"enable": "0",

"limit": "0",

"delay": "0",

"holdtime": "0",

"record": "0",

"linkage": "0",

"PreviewChn": "0",

"linkOutput": "0",

"linkBuzzer": "0",

"linkPreviewMode": "0",

"linkLockChn": "0",

"linkUploadChn": "0",

"linkSnapChn": "0"

},

}

}

# AIBOX Parameter Description

## Clock

|  |  |  |  |
| --- | --- | --- | --- |
| Field Name | CLOCK | | |
| Load description | | | |
| Content | | Field name | Description |
| Load description | | --version | "1.0.1.1" |
| Calibration mode | | switch | 0--Manual 1--GPS Calibration 2--NTP |
| Time Zone | | timezone | GMT-12 0: 0.0  GMT-12 15: 2.5  GMT-12 30: 5.0  GMT-12 45: 7.5  GMT-11 0: 10.0  ...  GMT+0 0: 120.0  GMT+0 15: 122.5  ...  GMT+8 0: 200.0 //Beijing time...  GMT+13 45: 247.5 |
| NTPserver | | ntpserver | 0~64 byte |
| NTP Server port | | ntpport |  |
| Date display method | | DateType | 0--year, month, day 1--day, month, year, 2--month, day, year |
| buzzer | | buzzerSwitch | 0--off 1--on |
| Operation timeout | | OprTimeOut | 30~3600秒 |
| Daylight saving time switch | | onoff | 0-- off    1-- on |
| Daylight saving time start month | | sMonth | 0-- January ...11-- December |
| Daylight saving time start week | | sWeek | 0- first week 1- second 2- third 3- fourth 4- last week |
| Daylight saving time start day | | sDate | 0-- Sunday 1-- Monday ... 6-- Saturday |
| When daylight saving time starts | | sHour |  |
| Daylight saving time end month | | eMonth |  |
| Daylight saving time end week | | eWeek | 0- first week 1- second 2- third 3- fourth 4- last week |
| Daylight saving time end date | | eDate | 0-- Sunday 1-- Monday ... 6-- Saturday |
| Daylight saving time end hour | | eHour |  |
| Offset time | | offset | 0--15 minutes 1--30 minutes 2-45 minutes 3--60 minutes |

Remarks: Calculation method of time zone

              GMT+0 15: 122.5 (where GMT+0 means hour, 15 means minute)

              Time calculation method: (122.5 \*10)/100 takes the integer digit 12 , which is GMT+0

              11 (11-12) means GMT-1

              12 ( 12-12 ) means GMT + 0

              13 (13-12) means GMT + 1

              The calculation method of points: (((122.5 \*10)%100)/25)\*15  is 15

Example:

{

"CLOCK": {

"--version": "1.0.1.1",

"switch": "1",

"timezone": "200",

"ntpserver": "www.ntp.com",

"ntpport": "123",

" DateType": "0",

"buzzerSwitch": "1",

"OprTimeOut": "60",

“onoff”:”0”,

“sMonth”:”0”,

“sWeek”:”0”,

“sDate”:”0”,

“sHour”:”0”,

“eMonth”:”0”,

“eWeek”:”0”,

“eDate”:”0”,

“eHour”:”0”,

“offset”:”0”

}

## Basic configuration

Remarks: the value passed by phonenum will not be modified

|  |  |  |  |
| --- | --- | --- | --- |
| Field name | JTBASE | | |
| Load description | | | |
| Content | | Section name | description |
| version number | | - version | "1.0.1.1" |
| Provincial capital code | | province | 0~8 bytes |
| City code | | city | 0~8 bytes |
| Vendor | | manufacturer | 0~32 bytes |
| Device No | | DevId | 0~32 bytes |
| telephone number | | phonenum | 0~16 bytes |
| Terminal model | | model | 0~32 bytes |
| Terminal ID | | TerminalId | 0~32 bytes |
| number plate | | license | 0~16 bytes |
| Gps position mode | | gpsPosMode | 0 : Default 1 : GPS 2: BD 3: GLONASS 4: GPS+BD 5: GPS+GL |
| Unmarked parameters do not support remote configuration of the platform for the time being | | | |

Example:

{

"JTBASE": {

"--version": "1.0.1.2",

"province": "9",

"city": "8",

"manufacturer": "99999999999",

"DevId": "88888888888",

"phonenum": "013900000002",

"model": "99999999999",

"TerminalId": "88888888888",

"color": "0",

"license": "AAAAAA",

"protocol1": "1",

"protocol2": "0",

"gpsInterval": "0",

"gpsinterval1": "30",

"gpsinterval2": "30",

"gpsPosMode": "0"

}

}

## Wired network

|  |  |  |  |
| --- | --- | --- | --- |
| Field name | LOCAL | | |
| Load description | | | |
| Content | | Section name | description |
| website address | | ip | 0~20 bytes |
| Subnet mask | | mask | 0~20 bytes |
| Gateway | | gw | 0~20 bytes |
| DNS | | dns | 0~20 bytes |
| mac address | | mac | 0~20 bytes |
| Network connection type | | LinkType | 0- local network |

Example:

{

"LOCAL": {

"--version": "1.0.1.0",

"ip": "192.168.001.010",

"mask": "255.255.255.000",

"gw": "192.168.001.001",

"dns": "113.068.119.068",

"mac": "113.68.119.68",

"LinkType": "0"

}

}

## OSD

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Field name | | OSD | | | |
| Load description | | | | | |
| content | Section name | | description | | |
| version number | - version | | "1.0.1.1" | | |
| Area node | region | | region0 is region 0 , region1 is region 2 , and so on, up to 9 regions | | |
|  |  | | Content | Field name | description |
| Start x coordinate | sx | X coordinate of the starting point of the area |
| Start y coordinate | sy | Y coordinate of starting point of area |
| width | width | Area width |
| height | height | Area height |
| Display type | type | 0-- None    1-- Date    2-- Pulse Speed    3-- Positioning Information    4-- Text |
| Text message | text | 0~64 bytes |

Example:

{

"OSD": {

"--version": "1.0.1.3",

"region0": {

"sx": "50",

"sy": "900",

"width": "304",

"height": "32",

"type": "1",

"text": "CH1"

}

"region1": {

"sx": "50",

"sy": "400",

"width": "304",

"height": "32",

"type": "1",

"text": "CH2"

}

}

}

## Power Management

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Field name | POWER | | | |
| Load description | | | | |
| Content | Field name | description | | |
| version number | - version | "1.0.1.1" | | |
| Function switch | switch | 0-- Off    1 - ACC 2-- Timing | | |
| Delayed shutdown | delay | second | | |
| Screen saver delay | ScreenOffTime | second | | |
| boot time | PowerOnTime | The number of seconds corresponding to a specific time of day | | |
| Shutdown time | PowerOffTime | The number of seconds corresponding to a specific time of day | | |
| ACC shutdown recording channel | AccPowerOffRecEnable | After ACC is closed, the device opens the channel bitmap for recording. Enable by bit, 0-- off  1-- on. For example, 15 means 0x0f , which means 1~4 channel recording. | | |
| ACC shutdown recording time | AccOffRecTime | second | | |
| Timed restart switch | TimeRebootEn | 0-- off    1-- on | | |
| Timing restart time | RebootTime | The number of seconds corresponding to a specific time of day | | |
| Root of the week | w eek | week0 is Sunday, week1 is Monday, and so on | | |
|  |  | Content | Section name | description |
| Time period 1 | time0 | xx:xx-xx:xx format, xx means what time |
| Time period 2 | time1 | Same as above |
| Time period 3 | time2 | Same as above |
| Time period 4 | time3 | Same as above |
|  |  |  |  |  |

Example:

{

"POWER": {

"--version": "1.0.1.0",

"switch": "1",

"delay": "1",

"AccOffRecTime": "1",

"ScreenOffTime": "3",

"PowerOnTime": "0",

"PowerOffTime": "86399",

"AccPowerOffRecEnable": "15",

" TimeRebootEn": "0",

" RebootTime": "0",

"week0": {

"time0": "00:00-23:59",

"time1": "00:00-00:00",

"time2": "00:00-00:00",

"time3": "00:00-00:00"

}

}

}

## Recording

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Field name | RECORD | | | |
| Load description | | | | |
| Content | Field name | description | | |
| version number | - version | "1.0.1.1" | | |
| Standard | SysNorm | 0--PAL 1--NTSC | | |
| Video encoding format | EncodeType | 0-H264, 1-H265 | | |
| Time period root node | RecTimers | A summary of the sub-nodes of the time period | | |
|  |  | Content | Field name | description |
| Time root node | time | time 0 Sunday, TIME1 Monday, ... , is fixed at 7 Ge time    For specific content, refer to the time period description below |
|  |  |  |
| Main stream root node | MainChn | Summary of sub-nodes of the main stream | | |
|  |  | Content | Field name | description |
| Channel root node | chn | chn0 is channel 1 , chn1 is channel 2 , … , fixed to 16 channels    For specific content, refer to the main stream description below |
|  |  |  |
|  |  |  |
|  |  |  |
| Substream root node | SubChn | Summary of sub-stream sub-nodes | | |
|  |  | Content | Field name | description |
| Channel root node | chn | chn0 is channel 1 , chn1 is channel 2 , … , fixed to 16 channels    For specific content, refer to the sub-stream description below |
|  |  |  |

|  |  |  |
| --- | --- | --- |
| Main stream parameters | | |
| Content | Field name | description |
| Frame rate | FrameRate | 1~25(PAL) 1~30(NTSC) |
| Resolution | Resolution | 0--HD1080 1--HD720 2--VGA 3--D1 4--HD1 5--CIF 6--WD1 |
| quality | Quality | 0 (clearest) ~7 |
| Bit rate | Bitrate |  |

|  |  |  |
| --- | --- | --- |
| Sub-stream parameters | | |
| Content | Field name | description |
| Frame rate | FrameRate | 1~25(PAL) 1~30(NTSC) |
| Resolution | Resolution | 0--HD1080 1--HD720 2--VGA 3--D1 4--HD1 5--CIF 6--WD1 |
| quality | Quality | 0 (clearest) ~7 |
| Bit rate | Bitrate |  |
| Unmarked parameters do not support remote configuration of the platform for the time being | | |

Example:

{

"RECORD": {

"--version": "1.0.1.1",

"SysNorm": "0",

"RecMode": "0",

"AutoCover": "1",

"AOVolume": "1",

"AudioType": "1",

"PackTime": "1",

"CameraType": "12",

"DisplayType": "1",

"RecTimers": {

"time0": {

"start1": "0",

"end1": "12000",

"start2": "0",

"end2": "0"

}

"time0": {

"start1": "12000",

"end1": "86399",

"start2": "0",

"end2": "0"

}

},

"MainChn": {

"chn0": {

"isRec": "1",

"FrameRate": "25",

"Resolution": "1",

"Quality": "4",

"HaveAudio": "1",

"Bitrate": "4096",

"PicLevel": "1",

"Gop": "25",

"Mirror": "0"

}

"chn0": {

"isRec": "1",

"FrameRate": "25",

"Resolution": "1",

"Quality": "4",

"HaveAudio": "1",

"Bitrate": "4096",

"PicLevel": "1",

"Gop": "25",

"Mirror": "0"

}

},

"SubChn": {

"chn0": {

"isRec": "1",

"FrameRate": "6",

"Resolution": "5",

"Quality": "4",

"HaveAudio": "0",

"Bitrate": "1",

"PicLevel": "1",

"Gop": "1"

}

},

"IPCChn": {

"chn0": {

"isOpen": "1",

"DevType": "1",

"Protocol": "1",

"ChlNo": "1",

"CameraPort": "1",

"CameraIP": "1",

"UserName": "1",

"UserPwd": "1",

"ipcAddr": "1",

"rtspUrl\_0": "1",

"rtspUrl\_1": "1"

}

}

}

}

## Input and output

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Field name | IOSET | | | | |
| Load description | | | | | |
| Content | | Field name | description | | |
| version number | | --version | "1.0.1.1" | | |
| Input port root node | | input |  | | |
|  | |  | Content | Field name | description |
| Channel root node | chn | chn0 is channel 1 , chn1 is channel 2 , and so on |
|  |  | For specific configuration parameters, refer to the input port parameters below |
| Root node of output port | | output |  | | |
|  | |  | Content | Field name | description |
| Channel root node | chn | chn0 is channel 1 , chn1 is channel 2 , and so on |
|  |  | For specific configuration parameters, refer to the following input and output parameters |

|  |  |  |
| --- | --- | --- |
| Input port parameters | | |
| Content | Field name | description |
| Name | name |  |
| Enable | enable | [\_io报警enable类型说明](#_io报警enable类型说明) |
|  | limit | 0--low, 1--high |
|  | delay | Alarm delay time, in seconds |
|  | holdtime | State anti-shake hold time, unit second |
| Linkage | linkage | bit0 --level output 1 bit1 --level output 2 |
| Linkage out output | linkOutput | 0-- do not output out , bit0-- output out1 , bit1-- output out2 |

|  |  |  |
| --- | --- | --- |
| Output port parameters | | |
| Content | Field name | description |
| name | name |  |
| Enable | enable | 0--off 1--on |
|  | limit | 0--low, 1--high |
|  | delay | Unused |
|  | holdtime | Unused |
| Linkage | linkage | bit0 --level output 1 bit1 --level output 2 |
| Linkage out output | linkOutput | 0-- do not output out , bit0-- output out1 , bit1-- output out2 |
| Unmarked parameters do not support remote configuration of the platform for the time being | | |

Example:

{

"IOSET": {

"--version": "1.0.1.0",

"input": {

"chn0": {

"name": "in1",

"enable": "0",

"limit": "1",

"delay": "0",

"record": "1",

"holdtime": "5",

"linkage": "1",

"PreviewChn": "1",

"MixChn": "0",

"linkOutput": "0",

"linkBuzzer": "0",

"linkPreviewMode": "0",

"linkLockChn": "0",

"linkUploadChn": "0",

"linkSnapChn": "0"

}

"chn1": {

"name": "in2",

"enable": "0",

"limit": "1",

"delay": "0",

"record": "1",

"holdtime": "5",

"linkage": "1",

"PreviewChn": "1",

"MixChn": "0",

"linkOutput": "0",

"linkBuzzer": "0",

"linkPreviewMode": "0",

"linkLockChn": "0",

"linkUploadChn": "0",

"linkSnapChn": "0"

}

},

"output": {

"chn0": {

"name": "out1",

"enable": "0",

"limit": "0",

"delay": "0",

"record": "0",

"holdtime": "0",

"linkage": "0",

"PreviewChn": "0",

"MixChn": "0",

"linkOutput": "0",

"linkBuzzer": "0",

"linkPreviewMode": "0",

"linkLockChn": "0",

"linkUploadChn": "0",

"linkSnapChn": "0"

}

"chn1": {

"name": "out2",

"enable": "0",

"limit": "0",

"delay": "0",

"record": "0",

"holdtime": "0",

"linkage": "0",

"PreviewChn": "0",

"MixChn": "0",

"linkOutput": "0",

"linkBuzzer": "0",

"linkPreviewMode": "0",

"linkLockChn": "0",

"linkUploadChn": "0",

"linkSnapChn": "0"

}

}

}

}

## DMS Parameter setting

|  |  |  |
| --- | --- | --- |
| Field name | DMS | |
| Load description | | |
| Content | Field name | description |
| dms camera access channel | chn | Start from 1 |
| Active photo strategy | PhotoPolicy | 0 : Not open 1 : Timed photo 2 : Fixed distance photo 3 : Card trigger |
| Snapshot interval | PhotoTimeInterval | The unit is second, the value range is 60~60000 , the default value is 3600, 255 means not to modify the parameter |
| Active fixed distance camera distance interval | PhotoDistInterval | The unit is meter, the value range is 0~60000 , the default value is 200 , 0 means no capture, 65535 means no parameter modification , and it is valid when the active camera strategy is 2 |
| Number of photos taken at a time | PhotoNumOneTime | Value range 1-10 |
| Time interval of single active photo | TimeIntervalOneTime | The unit is 100ms , the value range is 1~5 |
| Distracted driving angle left | YawLeft | Range: [-45 , -35 ] |
| Distracted driving angle right | YawRight | Range: [25 , 35] |
| Distracted driving angle | PitchUp | Range: [15 , 25] |
| Distracted driving angle | PitchDown | Range: [-25 , -15] |
| DMS root node |  | The following names correspond to various control types  call\_alarm - call  smoke\_alarm - smoke  close\_eys\_alarm - eyes closed  yawn\_alarm - yawn  distract\_driving\_alarm - distracted driving  driver\_abnormal\_alarm - the driver out of position  ir\_blocking\_alarm - infrared blocking sunglasses  seatbelt\_unfastened\_alarm - seatbelt not fastened  lens\_covered\_alarm - lens covered  Specific parameters refer to the following configuration parameters |

|  |  |  |
| --- | --- | --- |
| Configuration parameter | | |
| Cotent | Field name | Dscription |
| Enable | enable | 0-- off    1-- on |
| Speed threshold | limit | Threshold |
| Alarm interval | delay | Alarm delay time, in seconds |
| Pre-recording and post-recording time | holdtime | Pre-recording and post-recording time, unit second (0-5s) |
| Linkage | linkage | bit0 --level output 1 bit1 --level output 2 |
| Video upload | linkUploadChn | bit0—ch 1，bit1--ch2，bit2--ch3 ... |
| Video lock | linkLockChn | bit0--ch1，bit1--ch2 |
| Snapshot channel | linkSnapChn | bit0--ch1，bit1--ch2 |
| Alarm trigger hold time | AlmTrigerHoldTime | Range [0.5-10], unit: second |
| Voice broadcast switch | linkBuzzer | 0-- off, 1-- on |
| Alarm photo interval | PhotoInterval | The unit is 100ms, the value range is 1~10 |
| Number of alarm photos | PhotoNum | Range [0- 5 ] |
| Unmarked parameters do not support remote configuration of the platform for the time being | | |

{

"DMS": {

"PhotoDistInterval": "200",

"PhotoNumOneTime": "1",

"PhotoPolicy": "0",

"PhotoResolution": "1",

"PhotoTimeInterval": "3600",

"PitchDown": "-20",

"PitchUp": "20",

"TimeIntervalOneTime": "2",

"VideoResolution": "1",

"YawLeft": "-40",

"YawRight": "30",

"call\_alarm": {

"AlmTrigerHoldTime": "2.0",

"PhotoInterval": "2",

"PhotoNum": "1",

"PreviewChn": "1",

"delay": "10",

"enable": "1",

"holdtime": "5",

"limit": "10",

"linkBuzzer": "1",

"linkLockChn": "0",

"linkOutput": "0",

"linkPreviewMode": "0",

"linkSnapChn": "1",

"linkUploadChn": "1",

"linkage": "0",

"record": "1"

},

"chn": "1",

"close\_eys\_alarm": {

"AlmTrigerHoldTime": "1.0",

"PhotoInterval": "2",

"PhotoNum": "1",

"PreviewChn": "1",

"delay": "10",

"enable": "1",

"holdtime": "5",

"limit": "10",

"linkBuzzer": "1",

"linkLockChn": "0",

"linkOutput": "0",

"linkPreviewMode": "0",

"linkSnapChn": "1",

"linkUploadChn": "1",

"linkage": "0",

"record": "1"

},

"distract\_driving\_alarm": {

"AlmTrigerHoldTime": "1.0",

"PhotoInterval": "2",

"PhotoNum": "1",

"PreviewChn": "1",

"delay": "10",

"enable": "1",

"holdtime": "5",

"limit": "10",

"linkBuzzer": "1",

"linkLockChn": "0",

"linkOutput": "0",

"linkPreviewMode": "0",

"linkSnapChn": "1",

"linkUploadChn": "1",

"linkage": "0",

"record": "1"

},

"driver\_abnormal\_alarm": {

"AlmTrigerHoldTime": "3.0",

"PhotoInterval": "2",

"PhotoNum": "1",

"PreviewChn": "1",

"delay": "300",

"enable": "1",

"holdtime": "5",

"limit": "10",

"linkBuzzer": "1",

"linkLockChn": "0",

"linkOutput": "0",

"linkPreviewMode": "0",

"linkSnapChn": "1",

"linkUploadChn": "1",

"linkage": "0",

"record": "1"

},

"ir\_blocking\_alarm": {

"AlmTrigerHoldTime": "2.0",

"PhotoInterval": "2",

"PhotoNum": "1",

"PreviewChn": "1",

"delay": "10",

"enable": "1",

"holdtime": "5",

"limit": "50",

"linkBuzzer": "1",

"linkLockChn": "0",

"linkOutput": "0",

"linkPreviewMode": "0",

"linkSnapChn": "1",

"linkUploadChn": "1",

"linkage": "0",

"record": "1"

},

"lens\_covered\_alarm": {

"AlmTrigerHoldTime": "3.0",

"PhotoInterval": "2",

"PhotoNum": "1",

"PreviewChn": "1",

"delay": "300",

"enable": "1",

"holdtime": "5",

"limit": "10",

"linkBuzzer": "1",

"linkLockChn": "0",

"linkOutput": "0",

"linkPreviewMode": "0",

"linkSnapChn": "1",

"linkUploadChn": "1",

"linkage": "0",

"record": "1"

},

"seatbelt\_unfastened\_alarm": {

"AlmTrigerHoldTime": "4.0",

"PhotoInterval": "2",

"PhotoNum": "1",

"PreviewChn": "1",

"delay": "900",

"enable": "1",

"holdtime": "5",

"limit": "10",

"linkBuzzer": "1",

"linkLockChn": "0",

"linkOutput": "0",

"linkPreviewMode": "0",

"linkSnapChn": "1",

"linkUploadChn": "1",

"linkage": "0",

"record": "1"

},

"smoke\_alarm": {

"AlmTrigerHoldTime": "2.0",

"PhotoInterval": "2",

"PhotoNum": "1",

"PreviewChn": "1",

"delay": "10",

"enable": "1",

"holdtime": "5",

"limit": "10",

"linkBuzzer": "1",

"linkLockChn": "0",

"linkOutput": "0",

"linkPreviewMode": "0",

"linkSnapChn": "1",

"linkUploadChn": "1",

"linkage": "0",

"record": "1"

},

"yawn\_alarm": {

"AlmTrigerHoldTime": "1.0",

"PhotoInterval": "2",

"PhotoNum": "1",

"PreviewChn": "1",

"delay": "10",

"enable": "1",

"holdtime": "5",

"limit": "10",

"linkBuzzer": "1",

"linkLockChn": "0",

"linkOutput": "0",

"linkPreviewMode": "0",

"linkSnapChn": "1",

"linkUploadChn": "1",

"linkage": "0",

"record": "1"

}

}}

## ADAS Parameter setting

|  |  |  |
| --- | --- | --- |
| Field name | ADAS | |
| Load description | | |
| Content | Field name | description |
| Adas camera access channel | chn | Start from 1 |
| Active photo strategy | PhotoPolicy | 0 : Not open 1 : Timed photo 2 : Fixed distance photo 3 : Card trigger |
| Snapshot interval | PhotoTimeInterval | The unit is second, the value range is 60~60000 , the default value is 3600, 255 means not to modify the parameter |
| Active fixed distance camera distance interval | PhotoDistInterval | The unit is meter, the value range is 0~60000 , the default value is 200 , 0 means no capture, 65535 means no parameter modification , and it is valid when the active camera strategy is 2 |
| Number of photos taken at a time | PhotoNumOneTime | Value range [ 1-10 ] |
| Time interval of single active photo | TimeIntervalOneTime | Unit 100ms , in the range [ . 1 - . 5 ] |
| Forward collision sensitivity | fcw\_sensitivity | Range [0 -1 5] |
| Sensitivity of car distance too close | hmw \_sensitivity | Range [0 -1 5] |
| Lane departure sensitivity | ldw \_sensitivity | Range [0 - 20] |
| Pedestrian collision sensitivity | pcw \_sensitivity | Range [0 -1 5] |
| Start sensitivity of the vehicle ahead | psw \_sensitivity | Range [0 -1 5] |
| ADAS root node |  | The following names correspond to various control types  fcw\_alarm--Forward Collision  hmw\_alarm--front Vehicle is too close  ldw\_alarm--Lane departure  pcw\_alarm--Pedestrian collision  psw\_alarm--front vehicle starts  Specific parameters refer to the following configuration parameters |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Configuration parameter | | | | |
| Content | Field name | | description | |
| Enable | enable | | 0-- off    1-- on | |
| Speed threshold | limit | | Threshold | |
| Alarm interval | delay | | Alarm delay time, in seconds | |
| Pre-recording and post-recording time | holdtime | | Pre-recording and post-recording time, unit second (0-5s) | |
| Linkage | linkage | | bit0 --level output 1 bit1 --level output 2 | |
| Video upload | linkUploadChn | | bit0—ch 1，bit1--ch2，bit2--ch3 ... | |
| Video lock | linkLockChn | | bit0--ch1，bit1--ch2 | |
| Snapshot channel | linkSnapChn | | bit0--ch1，bit1--ch2 | |
| Voice broadcast switch | | linkBuzzer | | 0-- off, 1-- on |
| Alarm photo interval | | PhotoInterval | | The unit is 100ms, the value range is 1~10 |
| Number of alarm photos | | PhotoNum | | Range [0- 5 ] |

{

"ADAS": {

"PhotoDistInterval": "200",

"PhotoNumOneTime": "1",

"PhotoPolicy": "0",

"PhotoResolution": "1",

"PhotoTimeInterval": "3600",

"TimeIntervalOneTime": "2",

"VideoResolution": "1",

"cam\_dist\_axle": "171",

"cam\_dist\_head": "171",

"camera\_height": "130",

"chn": "0",

"fcw\_alarm": {

"PhotoInterval": "2",

"PhotoNum": "1",

"PreviewChn": "1",

"delay": "5",

"enable": "1",

"holdtime": "5",

"limit": "30",

"linkBuzzer": "1",

"linkLockChn": "0",

"linkOutput": "0",

"linkPreviewMode": "0",

"linkSnapChn": "1",

"linkUploadChn": "1",

"linkage": "0",

"record": "1"

},

"fcw\_sensitivity": "5",

"hmw\_alarm": {

"PhotoInterval": "2",

"PhotoNum": "1",

"PreviewChn": "1",

"delay": "30",

"enable": "1",

"holdtime": "5",

"limit": "30",

"linkBuzzer": "1",

"linkLockChn": "0",

"linkOutput": "0",

"linkPreviewMode": "0",

"linkSnapChn": "1",

"linkUploadChn": "1",

"linkage": "0",

"record": "1"

},

"hmw\_sensitivity": "5",

"horizon\_line": "539",

"iCameraCenter": "0",

"iHood": "1079",

"ldw\_alarm": {

"PhotoInterval": "2",

"PhotoNum": "1",

"PreviewChn": "1",

"delay": "5",

"enable": "1",

"holdtime": "5",

"limit": "50",

"linkBuzzer": "1",

"linkLockChn": "0",

"linkOutput": "0",

"linkPreviewMode": "0",

"linkSnapChn": "1",

"linkUploadChn": "1",

"linkage": "0",

"record": "1"

},

"ldw\_sensitivity": "10",

"pcw\_alarm": {

"PhotoInterval": "2",

"PhotoNum": "1",

"PreviewChn": "1",

"delay": "5",

"enable": "1",

"holdtime": "5",

"limit": "30",

"linkBuzzer": "1",

"linkLockChn": "0",

"linkOutput": "0",

"linkPreviewMode": "0",

"linkSnapChn": "1",

"linkUploadChn": "1",

"linkage": "0",

"record": "1"

},

"pcw\_sensitivity": "5",

"psw\_alarm": {

"PhotoInterval": "2",

"PhotoNum": "1",

"PreviewChn": "1",

"delay": "5",

"enable": "1",

"holdtime": "5",

"limit": "0",

"linkBuzzer": "1",

"linkLockChn": "0",

"linkOutput": "0",

"linkPreviewMode": "0",

"linkSnapChn": "1",

"linkUploadChn": "1",

"linkage": "0",

"record": "1"

},

"psw\_sensitivity": "0",

"vehicle\_Mid\_line": "0",

"vehicle\_width": "174"

}}

# Parameter of Dashcam V2

## Registration info

|  |  |  |
| --- | --- | --- |
| Field name | TPT\_REG | |
| Registration info | | |
| Content | Field name | Description |
| Provincial ID | provinceId | Provincial ID |
| City ID | cityId | City ID |
| Producer ID | producerId | Producer ID |
| Device Model | devType | Device Model |
| Device ID | devId | Device ID |
| Plate color | plateColor | Plate color |
| Plate No. | plateNo | Plate No. |

{

"TPT\_REG": {

"provinceId": 1,

"cityId": 2,

"producerId": "howen",

"devType": 2,

"devId": "41903492",

"plateColor": 4,

"plateNo": "\*B:888888"

}

}

## Basic info

|  |  |  |  |
| --- | --- | --- | --- |
| Field name | TPT\_VER | | |
| Basic information (system parameters are not configured) | | | |
| Content | | Field name | Description |
| ICCID | | iccid |  |
| IMEI | | imie |  |
| Hardware version | | hardVersion |  |
| Software version | | softVersion |  |

{

"TPT\_VER": {

"iccid": "1111",

"imie": "2222",

"hardVersion": "hard\_v1.0",

"softVersion": "soft\_v1.0"

}

}

## Status

|  |  |  |  |
| --- | --- | --- | --- |
| Field name | TPT\_OPT | | |
| Status info | | | |
| Content | | Field name | Description |
| GPS upload interval | | gpsInterval | Unit: s |
| Automatic upload of alarm video | | avUpload | true/false |
| Pre-recording dutaion | | avPre | Unit: s |
| Post-recording duration | | avPost | Unit: s |
| Alarm recording lock days | | avLockDays |  |

{

"TPT\_OPT": {

"gpsInterval": 60,

"avUpload": true,

"avPre": 60,

"avPost": 60,

"avLockDays": 2

}

}

## Network configuration

|  |  |  |  |
| --- | --- | --- | --- |
| Field name | TPT\_NET | | |
| Network configuration | | | |
| Content | | Field name | Description |
| WIFI　SSID | | wifiSsid |  |
| WIFI　password | | wifiPwd |  |
| Server address or domain name | | serverAddr |  |
| Server port | | serverPort |  |

{

"TPT\_NET": {

"wifiSsid": "wifssid",

"wifiPwd": "12345678",

"serverAddr": "47.115.83.226",

"serverPort": "33000"

}

}

## APN

|  |  |  |  |
| --- | --- | --- | --- |
| Field Name | TPT\_APN | | |
| APN | | | |
| Content | | Field name | Description |
| MCC | | mcc |  |
| MNC | | mnc |  |
| APN name | | apnName |  |
| APN port | | apnPoint |  |
| User | | user |  |
| Password | | password |  |

{

"TPT\_APN": {

"mcc": "460",

"mnc": "07",

"apnName": "cmwap",

"apnPoint": "80",

"user": "wap",

"password": "12345678"

}

}

## Log

|  |  |  |  |
| --- | --- | --- | --- |
| Field name | TPT\_LOG | | |
| LOG | | | |
| Content | | Field name | Description |
| Status | | state | 0: off, 1: on |
| Parameter | | parameter | NULL |

{

"TPT\_LOG": {

"state": "0",

"parameter": "NULL"

}

}