TT18-4G-M HTTP 协议 v1.2

1、协议框架

请求：

{

"msgtype": , //类型，用于判断不同数据

"hw":”0407”,//"硬件型号",

"fw": “”,//"固件版本(格式：0.0.0.0)",

"imei": “”,//"唯一标识（即为 IMEI、SN、ID）",

"data":“”,//"数据区",

"rtc": 2021/09/09 03:42:04 ,//年月日时分秒

"sn": //数据序列号，当为-1 代表为空

}

响应：

{

"sta": 0, //状态编号，0 为正常、1 为错误

"data":””,// "返回数据区",

"error": “”//"如果错误，可以返回错误详细"

}

2、获取服务器时间（MsgType:1）

请求：

{

"msgtype": 1,

"hw":”0407”//"硬件型号",

"fw": //"固件版本(格式：0.0.0.0)",

"imei": //"唯一标识（即为 IMEI、SN、ID）",

"sn":

}

响应：

{

"sta": 0,

"data": {

"servertime": 2021/09/09 03:42:04

},

"error": ""

}

示例：

请求： {"msgtype":1,"hw":"0407","fw":"02.00.00.00","imei":"699999999999999","sn":1}

相应： {"sta":0,"data":{"servertime": "2021/09/10 10:06:53"},"error":""}

3、标准数据协议

请求：

```
{
"msgtype": 3,
"hw":”0407”,//"硬件型号",
"fw": “”,//"固件版本(格式：0.0.0.0)",
"imei": “”,//"唯一标识（即为 IMEI、SN、ID）",
"data": {
  “gps”:["latitude":22.537818,//纬度
        "longitude ":114.537818,//经度
        "angle":120,//角度
        "speed":12.3,//速度，单位：Knots
        “utc”:2023/02/21 17:11:56//utc 时间
       ],
  “lbs”:[
        {"mcc": “460”, //移动国家编码
        "mnc": “01”, //移动网络编码
        "lac": "2793 ", //区域编码
        "cell": "12AD", //基站编码
        “rxlev”:-68,//单位：-dBm,仅 2G 基站支持
        "type": "2G" //基站类型，2G、NB、CATM、LTE
        },
        {"mcc": “460”, //移动国家编码
        "mnc": “01”, //移动网络编码
        "lac": "1D2F ", //区域编码
        "cell": "0A7E743F", //基站编码
        “pci”:272,// Physical Cell ID,10 进制, NB、CATM、LTE 支持
        “earfcn”:3686,// 10 进制, NB、CATM、LTE 支持
        “rsrp”:-75,// Current reference signal received power in,单位：-dBm, NB、CATM、
    LTE 支持
        “rsrq”:-8,// The signal reception quality,单位：-dB, NB、CATM、LTE 支持
        “rssi”:-8,// Received signal strength indicator value,单位：-dBm, NB、CATM、LTE
    支持
        "type": "LTE " //基站类型，2G、NB、CATM、LTE
        },
        {"mcc": “460”, //移动国家编码
        "mnc": “01”, //移动网络编码
        "lac": "2793 ", //区域编码
        "cell": "12AE", //基站编码
        “rxlev”:-68,//单位：-dBm,仅 2G 基站支持
        "type": "2G " //基站类型，2G、NB、CATM、LTE
        }
       ],
```

"alert":”AA”,//报警类型，AA-常规数据,10-低压报警，A0-温湿度报警，A1-温湿度异常，
//A2-亮暗变化报警
"termsta":”00”,//终端信息，bit6-飞行模式标志，bit5-LSE 异常标志，bit4-按键标志，
//bit3-温湿度异常标志，bit2-温湿度超限标志，bit1-欠压标志，
//bit0-usb 连接标志
"gsm": {
"csq": 40, //信号强度
"sta": "37",//bit5-http 连接是否建立，bit4-gprs 网络是否 ok，bit3-是否漫游
//bit2-gsm 网络是否 ok，bit1-sim 卡是否检测到，bit0-是否开机
},
" bat ": 3.6, //电池电压
" temp": 33.6, //温度，单位 0.1c
" humi": 58.9, //湿度，单位：0.1%
" light": 0 //光感状态，0-亮，1-暗
},
"rtc": "2021/09/09 03:42:04",
"sn": 1
}
响应：
{
"sta": 0,
“data”:{
“ack”:1//收到的 sn，此项数据必须与机器发布的 sn 一致
},
"error": "",
"errorcode":""//错误码
}

请求：
{"msgtype":3,"hw":"0407","fw":"03.03.00.00","imei":"699999999999911","data":{"lbs":[{"mcc":"460","mnc":"00","lac":"1D2F","cell":"A7E743F","pci":272,"earfcn":3686,"rsrp":-73,"rsrq":-11,"rssi":-62,"type":"NB"}],"alert":"AA","termsta":"10","gsm":{"csq":26,"sta":"37"},"bat":4.00,"temp":21.7,"humi":49.8,"light":0},"rtc":"2023/02/21 10:02:45","sn":3}
响应：
{"sta":0,”data”{“ack”,3}, "error":"",”errorcode”:””}

请求：
{"msgtype":3,"hw":"0407","fw":"03.03.00.00","imei":"699999999999911","data":{"lbs":[{"mcc":"460","mnc":"00","lac":"2793","cell":"12CD","rxlev":-71,"type":"2G"},{"mcc":"460","mnc":"00","lac":"2793","cell":"12AF","rxlev":-71,"type":"2G"},{"mcc":"460","mnc":"00","lac":"2793","cell":"12CC","rxlev":-73,"type":"2G"}],"alert":"AA","termsta":"10","gsm":{"csq":12,"sta":"37"},"bat":4.00,"temp":22.2,"humi":49.9,"light":1},"rtc":"2023/02/21 10:08:18","sn":10}
响应：
{"sta":0,”data”{“ack”,10}, "error":"",”errorcode”:””}

请求：
{"msgtype":3,"hw":"0407","fw":"03.03.00.00","imei":"699999999999911","data":{"gps":["latitude":22.538564,"longitude":114.069624,"angle":0,"speed":0.0,"utc":2023/02/21 10:15:55],"lbs":[{"mcc":"460","mnc":"00","lac":"2793","cell":"12CD","rxlev":-69,"type":"2G"},{"mcc":"460","mnc":"00","lac":"2793","cell":"12AF","rxlev":-67,"type":"2G"},{"mcc":"460","mnc":"00","lac":"2793","cell":"0EF8","rxlev":-70,"type":"2G"}],"alert":"AA","termsta":"10","gsm":{"csq":31,"sta":"37"},"bat":2.67,"temp":9.6,"humi":25.6,"light":0},"rtc":"2023/02/21 10:16:01","sn":2}
响应：
{"sta":0,”data”{“ack”,2}, "error":"",”errorcode”:””}

请求：
{"msgtype":3,"hw":"0407","fw":"03.03.00.00","imei":"699999999999911","data":{"gps":["latitude":22.538564,"longitude":114.069624,"angle":0,"speed":0.0,"utc":2023/02/21 10:18:21],"lbs":[{"mcc":"460","mnc":"00","lac":"1D2F","cell":"A7E743F","pci":272,"earfcn":3686,"rsrp":-72,"rsrq":-11,"rssi":-61,"type":"NB"}],"alert":"AA","termsta":"00","gsm":{"csq":27,"sta":"37"},"bat":2.66,"temp":11.6,"humi":25.7,"light":0},"rtc":"2023/02/21 10:18:22","sn":4}
响应：
{"sta":0,”data”{“ack”,4}, "error":"",”errorcode”:””}

5、服务器下行设置

服务器下行发送格式：

包头（1byte）+ 数据类型（X1）+ 分隔符（1byte）+ 数据区（X2）+ 分隔符（1byte） + 包尾（1byte）+ 结束符（2byte）

1. 包头：@；
2. 数据类型：CMD；
3. 分隔符：,；
4. 数据区：具体指令，见指令表；
5. 分隔符：,；
6. 包尾：#；
7. 结束符：\r\n(0x0D,0x0A)；

如设 GPRS 数据发送间隔：@CMD,*000000,018,10#,#

服务器收到数据后若有下行指令则在回复中带上下行指令

服务器下行格式：

```
{
   "sta": 0, //状态编号，0 为正常、1 为错误
"data": {
```

"downcmd": ""//指令，如*000000,008,0000001#
},"error": “”//"如果错误，可以返回错误详细"
}
机器收到下行指令后回复格式
{
"msgtype": 4, //类型，用于判断不同数据
"hw":”0407”,//"硬件型号",
"fw": “”,//"固件版本(格式：0.0.0.0)",
"imei": “”,//"唯一标识（即为 IMEI、SN、ID）",
"data": {
"resdowncmd": {
"cmd":"",//收到的指令，如*000000,008,0000001#
"cmdtype":"",//指令类型，set 为设置指令，read 为读取指令
"sta":"",//指令执行结果
"par":""//读取指令结果
}
},
"rtc": "2021/09/09 03:42:04",
"sn": 1
}

示例：
下行：
{"sta":0,"data":{"downcmd":"*000000,008,1110000#"},"error":""}
回复：
{"msgtype":4,"hw":"0407","fw":"02.00.00.00","imei":"699999999999999","data":{"resdowncmd":{"cmd":"*000000,008,1110000#","cmdtype":"set","sta":"OK"}},"rtc":"2021/09/14 03:26:10","sn":5}

下行：
{"sta":0,"data":{"downcmd":"*000001,008,1110000#"},"error":""}
回复：
{"msgtype":4,"hw":"0407","fw":"02.00.00.00","imei":"699999999999999","data":{"resdowncmd":{"cmd":"*000001,008,1110000#","cmdtype":"set","sta":"Err"}},"rtc":"2021/09/14 03:31:10","sn":7}

下行：
{"sta":0,"data":{"downcmd":"*000000,040,008#"},"error":""}
回复：
{"msgtype":4,"hw":"0407","fw":"02.00.00.00","imei":"699999999999999","data":{"resdowncmd":{"cmd":"*000000,040,008#","cmdtype":"read","sta":"OK","par":"1110000"}},"rtc":"2021/09/14 03:40:29","sn":11}

下行：

{"sta":0,"data":{"downcmd":"*000000,040,088#"},"error":""}

回复：

{"msgtype":4,"hw":"0407","fw":"02.00.00.00","imei":"699999999999999","data":{"resdowncmd":{"cmd":"*000000,040,088#","cmdtype":"read","sta":"unvalid"}},"rtc":"2021/09/14 03:52:58","sn":3}