**Temp&RH-data transmit**

**——protocols instruction**

1. **HTTP method**

| **Name** | **Type** | **Description** |
| --- | --- | --- |
| Method | string | request mode，such as POST、GET |
| Timestamp | Long | Time of data sending |
| Version | Int | Version of protocols |
| PID | Int | IMEI of device |
| Temperature | double | temperature（-1000=none） |
| Humidity | double | humidity（-1000=none） |
| Voltage | double | voltage（-1000=none） |
| L\_wgs84 | string | [longitude](file:///D%3A%5C%E7%A8%8B%E5%BA%8F%5CDict%5CDict%5C7.3.0.0817%5Cresultui%5Cdict%5C?keyword=longitude)[and](file:///D%3A%5C%E7%A8%8B%E5%BA%8F%5CDict%5CDict%5C7.3.0.0817%5Cresultui%5Cdict%5C?keyword=and)[latitude](file:///D%3A%5C%E7%A8%8B%E5%BA%8F%5CDict%5CDict%5C7.3.0.0817%5Cresultui%5Cdict%5C?keyword=latitude)（WGS-84 coordinate） |
| Datas>Timestamp | Long | The device time |

1. JSON

For example：{"Method":"POST","Timestamp":1501224426512,"Version":1,"Datas":[{"PID":7,"Temperature":29.50,"Humidity":-1000.0,"Voltage":3.58,"L\_wgs84":"","Timestamp":1501195550000},{"PID":5,"Temperature":29.90,"Humidity":0.65,"Voltage":3.64,"L\_wgs84":"","Timestamp":1501195229000},{"PID":3,"Temperature":25.80,"Humidity":-1000.0,"Voltage":3.63,"L\_wgs84":"","Timestamp":1501195508000},{"PID":2,"Temperature":26.50,"Humidity":0.59,"Voltage":3.61,"L\_wgs84":"","Timestamp":1501195378000},{"PID":4,"Temperature":29.70,"Humidity":0.66,"Voltage":3.61,"L\_wgs84":"","Timestamp":1501195436000}]}

1. XML

For example：
<?xml version="1.0"?><Command xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"><Timestamp>1501225406521</Timestamp><Version>1</Version><Datas><CommandBody><PID>7</PID><Temperature>29.50</Temperature><Humidity>-1000</Humidity><Voltage>3.58</Voltage><L\_wgs84 /><Timestamp>1501196493000</Timestamp></CommandBody></Datas><Method>POST</Method></Command>

**二、TCP method**

1. Command Line protocols

Instruction：command line protocols encoding as Ascii. Every one commad is end with "\r\n"。

Formate specification：each parameter separate with“space symbol”

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Type** |  | **Protocol version** |  | **time** |  | **details(N)** |  | **CRC** | **end\r\n** |
| AA | : | 1 |  | 1501225869421 |  | …… |  | 254F |  |

Contents note：each parameter separate with“|”

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **time** |  | **Device IMEI** |  | **temperature** |  | **humidity** |  | **voltage** | [**longitude**](file:///D%3A%5C%E7%A8%8B%E5%BA%8F%5CDict%5CDict%5C7.3.0.0817%5Cresultui%5Cdict%5C?keyword=longitude)[**and**](file:///D%3A%5C%E7%A8%8B%E5%BA%8F%5CDict%5CDict%5C7.3.0.0817%5Cresultui%5Cdict%5C?keyword=and)[**latitude**](file:///D%3A%5C%E7%A8%8B%E5%BA%8F%5CDict%5CDict%5C7.3.0.0817%5Cresultui%5Cdict%5C?keyword=latitude) |  |
|  | | | 7 | | | 29.60 | | | -1000 | | | 3.58 |  | | |

For example：AA:1 1501225869421 1501197059000|7|29.60|-1000|3.58|| 254F

note：-1000=none

1. FixedHeader

Instruction：the fixed header protocols encoding as Hex。 The protocols define the request mode as two parts, the first part define the basic information.Usually we call the first part information as header data "request header(request name + len) + request body"。

format specification：

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **type** | **length** | **version** | **time** | **details(N)** | **CRC** |
| **bytes** | 1bytes | 2bytes | 1bytes | 6bytes |  | 2bytes |
| **Original data** | AA | 0035 | 01 | 11071C100515 | …… | 28CF |
| **value** | AA | 53 | 1 | 17-7-28 16:05:21 |  |  |

Contents instruction：

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **time** | **IMEI** | **temperature** | **humidity** | **voltage** | [**longitude**](file:///D%3A%5C%E7%A8%8B%E5%BA%8F%5CDict%5CDict%5C7.3.0.0817%5Cresultui%5Cdict%5C?keyword=longitude)[**and**](file:///D%3A%5C%E7%A8%8B%E5%BA%8F%5CDict%5CDict%5C7.3.0.0817%5Cresultui%5Cdict%5C?keyword=and)[**latitude**](file:///D%3A%5C%E7%A8%8B%E5%BA%8F%5CDict%5CDict%5C7.3.0.0817%5Cresultui%5Cdict%5C?keyword=latitude) |
| **bytes** | 6bytes | 2bytes | 3bytes | 2bytes | 2bytes | 6bytes |
| **original data** | 11071C08042E | 0008 | 000A7A | 0030 | 0EE2 | 0000000000000000 |
| **value** | 17-07-28 16:04:46 | 8 | 26.82 | 0.48 | 3.81 |  |

For example：AA00350111071C10051511071C08042E0008000A7A00300EE2000000000000000011071C0802100007000B9000000DFC000000000000000028CF

Note：

1、temperature: 3byte,for the first byte，0 means positive ，1 means negative。The second and third byte change to decimalism, then divide by 100.

2、Humidity: 2byte, change to decimalism, then divide by 100.

3、Voltage:2byte, change to decimalism, then divide by 1000.

4 、If it shows 0xffff, means no data

**三、MQTT method**

|  **Name** | **Type** | **description** |
| --- | --- | --- |
| Timestamp | Long | Data sending time |
| Version | Int | Protocols version |
| PID | Int | Device IMEI |
| Temperature | double | temperature（-1000=none） |
| Humidity | double | humidity（-1000=none） |
| Voltage | double | voltage（-1000=none） |
| L\_wgs84 | string | [longitude](file:///D%3A%5C%E7%A8%8B%E5%BA%8F%5CDict%5CDict%5C7.3.0.0817%5Cresultui%5Cdict%5C?keyword=longitude)[and](file:///D%3A%5C%E7%A8%8B%E5%BA%8F%5CDict%5CDict%5C7.3.0.0817%5Cresultui%5Cdict%5C?keyword=and)[latitude](file:///D%3A%5C%E7%A8%8B%E5%BA%8F%5CDict%5CDict%5C7.3.0.0817%5Cresultui%5Cdict%5C?keyword=latitude)（WGS-84 coordinate） |
| Datas>Timestamp | Long | Device time |

1. Data formate

For example：{"Timestamp":1501224426512,"Version":1,"Datas":[{"PID":7,"Temperature":29.50,"Humidity":-1000.0,"Voltage":3.58,"L\_wgs84":"","Timestamp":1501195550000},{"PID":5,"Temperature":29.90,"Humidity":0.65,"Voltage":3.64,"L\_wgs84":"","Timestamp":1501195229000},{"PID":3,"Temperature":25.80,"Humidity":-1000.0,"Voltage":3.63,"L\_wgs84":"","Timestamp":1501195508000},{"PID":2,"Temperature":26.50,"Humidity":0.59,"Voltage":3.61,"L\_wgs84":"","Timestamp":1501195378000},{"PID":4,"Temperature":29.70,"Humidity":0.66,"Voltage":3.61,"L\_wgs84":"","Timestamp":1501195436000}]}