

GPRS 通讯协议

终端 GPRS 上传数据

上传数据，服务器不需要做任何回复。上传格式分为两种，以下格式为默认简化格式，命令为 `gprsdata 0`

1212130946,+8615999607449,GPRMC,014655.000,A,2235.3330,N,11350.2700,E,0.00,0.00,131212,00,0000.0,A*77,F,help me,imei:357713001318002,126 尤

以下为多功能数据，用短信或 GPRS 下发命令为 `gorsdata 1` 返回简化模式；将参数 1 改为 0

121206031158,+8615999607487,GPRMC,061158.000,A,2235.3315,N,11350.2717,E,0.00,0.00,061212,,,A*64,F,help me,imei:359772039292793,11,52.3,F:4.10V,1,138,24807,460,00,2490,0F2B,7.24km\r\n

以下为 GSM 盲区保存数据，待信号恢复以后上传；

LOG121206031158,+8615999607487,GPRMC,061158.000,A,2235.3315,N,11350.2717,E,0.00,0.00,061212,,,A*64,F,help me,imei:359772039292793,11,52.3,F:4.10V,1,138,24807,460,00,2490,0F2B,7.24km\r\n

简化数据解析

121206031158

时间流水号：12 年 06 月 03 日 11 时 58 分

,

分隔符：每组不同数据由逗号分隔

+8615999607487

手机号码：有授权情况下为授权号码，否则为最后操作 tracker 的手机号码，或则为空

GPRMC,061158.000,A,2235.3315,N,11350.2717,E,0.00,0.00,061212,,,A*64

GPRMC 数据：GPS 模块数据完整数据，本程序没有对其进行修改

F

当前 GPS 信号状态：F,表示当前最新数据，L 表示当前没有定位，此数据为旧数据

Help me

报警信息: SOS=help me 栅栏=SYOCKADE 移位=MOVE IN 超速=SPEED 低电=battery 震动=SHAKE 中文地址=ADDRESS CH 英文地址=ADDRESS EN
非报警此位置为空.

imei:359772039292793

15 位 IMEI 号

126

数据长度: 此数据前的所有数据总和, 单位字节

九

CRC 检验: 这是两个字节的十六进制数据, 有时显示为乱码, 有时显示为空, 因为他是十六进制, “九”表达成十六进制 “0XC7A8” (16 bits)
计算方法如下; 注意: 此系统 unsigned int 为 16bits, 对于 PC 软件, 需要对结果做 &0xFFFF 运算。

```
unsigned int CRC_16(unsigned char *buf, unsigned int datalen)
{
    unsigned int i;
                                unsigned char j;
    unsigned char c, treat, bcrc;
    unsigned int crc = 0;

    for (i = 0; i < datalen; i++)
    {
        c = buf[i];
        for (j = 0; j < 8; j++)
        {
            treat = c & 0x80;
            c <<= 1;
            bcrc = (crc >> 8);

                                bcrc &= 0x80;

            crc <<= 1;
```

```

        if (treat != bcrc)
            crc ^= 0x1021;
    }
}
return crc;
}

```

多功能数据解析

11

卫星数：当前有 11 颗卫星

52.3

海拔：海拔 52.3 米

F:4.3V

电压：F 表示满电，L 表示低电。当前电压 4.3V

1

充电状态：1 为正在充电中，0 为未充电

138

GPRS 字符长度

24807

CRC 校验码：已经转成十进制字符串，对检验码 24807 前面所有数据进行 CRC16 计算，并将 16bits 的 HEX 数据转成十进制。

举例如:0X127C=>24807:

121206031158,+8615999607487,GPRMC,061158.000,A,2235.3315,N,11350.2717,E,0.00,0.00,061212,00,0000.0,A*64,F,help me,imei:35977
2039292793,11,52.3,F:4.10V,1,138

460,00,2490,0F2B

基站数据: cellid,bsic,rxl,lac

7.24km\r\n

里程计算结果: 当前行走距离累计 7.24 千米 \r\n 为回车结束符。

GPS 模块数据解析

GPRMC,061158.000,A,2235.3315,N,11350.2717,E,0.00,0.00,061212,,A*64

GPRMC

GPS 数据: 开始字符

061158.000

UTC 时间: hhmmss.sss(时分秒.毫秒)格式

A

定位状态: A=有效定位, V=无效定位

2235.3315

纬度: ddmm.mmmm(度分)格式(前面的 0 也将被传输)

N

纬度半球: N(北半球)或 S(南半球)

11350.2717

经度: dddmm.mmmm(度分)格式(前面的 0 也将被传输)

E

经度半球: E(东经)或 W(西经)

0.00

地面速率: (000.0~999.9 节, 前面的 0 也将被传输)

0.00

地面航向: (000.0~359.9 度, 以正北为参考基准, 前面的 0 也将被传输)

061212

UTC 日期: ddmmyy(日月年) 格式

00

磁偏角 (000.0~180.0 度, 前面的 0 也将被传输)

0000.0

磁偏角方向, E(东)或 W(西)

A

模式指示 (仅 NMEA0183 3.00 版本输出, A=自主定位, D=差分, E=估算, N=数据无效)

64

数据长度: GPS 数据字节总和。

GPRS 下发数据解析

指令间用空格做分隔符, 并且只有一个空格, 忽略大小写。有些指令参数项为空。

SMS 指令格式: “密码+指令名称+空格+参数” 密码为 6 位字符串

GPRS 指令格式: “指令名称+空格+参数\r\n” 参数后比短信格式多\r\n 回车换行作为结束, 其他完全一样。

命令集

123456=出厂密码，□代表一个空格，设置成功设备回复 OK，命令错误无回复, 不区分大小写 TK103-2 TK102-2 Anywhere 授权后免输入密码

适应机型：TK102 TK103-2 TK102-2 TK106 Anywhere

password123456□*****

修改密码，*代表新密码，注意空格

admin123456□*****□*****

授权，*为电话号码，可设 5 组授权号码 新设置覆盖上次，空为解除授权

monitor123456

监听

tracker123456

取消监听，恢复定位模式

t030s005n123456

连续定位，间隔 30 秒定位 5 次

t020h***n123456

连续定位，间隔 20 小时定位无数次，S=秒 m=分 h=小时 n=次数

t030s000n123456

连续定位，参数 0 为关闭连续定位

stockade123456□22.589155N,113.837732E;22.559000N,113.897111E

电子栅栏，矩形栅栏左上角经纬度与右下角经纬度，注意“，”“；”区分，参数空为取消

move123456□200

移位报警，以设备为中心 200M 半径圈，参数空为取消

speed123456□080

超速报警，080 为 80km/h 参数空为取消

smslink123456

短信回复格式，Google 连接，恢复数据格式 begin

smslinkone123456

单次定位，回复一次定位数据

low123456□battery

低电报警，低于 3.6V 间隔 30 分报警一次直到关机

time123456□zone□8

时间设置，UTC 时间 8=+8 小时，-6.5=减 6:30

apn123456□cmnet□User name□password

APN 设置，举例中国移动：apn123456 cmnet，没有用户名和密码可不填写，APN 设为空为取消

adminip123456□119.147.23.100□2337

IP PORT 设置，填写标准的 IP PORT 7070=PORT，设为空=取消

gprsmode123456□0

UDP/TCP，0=TCP 1=UDP 默认 0，设置后重启有效

status123456

查询参数，例：

imei=861785004780965, speed=0, bat=100%, charging=1, gps=L, csq=17, ip=119.147.23.100:2337, apn=cmnet, T(s)=30, TL(m)=0, time=8, shake=0, mode=tracker

begin123456

恢复出厂设置，删除所有设置参数

version123456

查询版本号，JE0-108 V2.00 版本号

format

超级命令，不需要密码，强制格式化系统

适应机型：TK103-2 TK102-2 TK106 Anywhere

123456gprsdata□0

GPRS 上传格式，1=有基站与里程数据，0=无

123456Tlimit□100

距离发送限制，GPRS 上传数据 100m 内不上传

123456traffic□5

行车模式，参数 1 为震动最低灵敏度 10 最高，0 未关闭此设置

123456shake□5

震动报警，参数 1 为震动最低灵敏度 10 最高，0 未关闭此设置

123456smslink

短信回复格式，Google 连接

123456smstext

短信回复格式，数据格式

123456batt□13800138000

设置低电接收报警号码，无此项设置会报警到授权号

123456km0

里程计算，开始计算

123456km?

里程计算，查询计算结果

123456echoing 1

回显；此命令用于研发人员。

SD 卡内如有断点数据保存，当 GPRS 恢复时自动优先上传，无需设置。



适应机型：TK103-2 TK102-2 Anywhere

123456ldu,server=http://www.cnjeo.com/down/carv2.0.bin,en=72

远程升级(TK106 不支持)，车载设备系统升级命令， V2.0 以上版本可以使用，升级前一定要与经销商确认升级文件版本，否则会出现严重错误。

升级过程中手机将会收到下列回复：

- a) ldu,server=http://www.cnjeo.com/down/tpj.bin,en=72 ok! （升级命令下发成功）
- b) Download upgrade file successful! Restarting... （程序安装成功）
- c) LDU successful ! （新系统运行正常）
- d) Download upgrade file fail! Error: 10 （下载失败）

远程升级，必须安装标准 SD 卡与设置 APN



123456WORK,poweroff=17:45,poweron=18:00,powere=1

参数解析 17:45=关机时间 18:00=开机时间 1=执行 0=停止执行

123456work

解除定时开关机设置

123456address en

查询文字地理信息, en=英文地址 ch=中文地址

适应机型: Anywhere

123456talk

开启双向通话模式, 在此模式下: 插上耳机, 有电话打进, 自动接听, 对方挂断结束通话。按耳机按键拨出第一个授权电话, 第一个没有接听拨打第二个... 没有授权号码拨打最后操作号码。

123456debug AT+QATDCH=1

此命令用于选择耳机通话还是非耳机通话. 出厂默认耳机通话. QATDCH=1 为耳机 QATDCH=0 为主机通话.

123456audio, SpkVol=100, MicVol=5, Headset=0

SpkVol: 听筒, 范围 [1-100] MicVol: 话筒, 范围 [1-100] 参数 Headset 默认为 0, 免提模式, 1 为耳机模式.

适应机型: TK103-2

123456powercar□11

断开油路, 当参数 “11” 改为 “00” 为恢复油路

123456fortify

设防/撤防, 拨打设备号码设防, 再次拨打为撤防, 防御状态, ACC 被连接将报警

123456fortified

查询设防, fortifying” 或 “no fortify”。含定位数据

- a) A/B sim car 为自动切换, 无需设置
- b) 设防状态下所有报警将会报到授权号和平台。
- c) 线束中的白色线与汽车报警系统喇叭的正极导线连接, 当汽车报警超过 10 秒, 授权号码将得到报警
- d) 车载电源掉电会自动报警到授权号码, 不需设置。
- e) 连接 ACC 感应线, 设防模式下如 ACC 被连接, 将报警到授权号码。取消 ACC 报警, 请断开连接线。
- f) 所有机型若要将数据上传到监控平台, 必须进行以下操作:
- A, 设置 APN B, 设置 IP PORT C, 发送“连续定位”命令



PC 平台-中文: <http://v5.a6gps.com> 英文: <http://www.a6gps.com/en> 手机平台-中文: <http://m.a6gps.com> 英文: <http://m.a6gps.com/en>

Programme GPRS Protocol

Upload Data

1

Don't need server any reply, Two kinds of format, Default contracted format;

1212130946, +8615999607449, GPRMC, 014655.000, A, 2235.3330, N, 11350.2700, E, 0.00, 0.00, 131212, 00, 0000.0, A*77, F, help me, imei:357713001318002, 126 尤

Multi-function data,

SMS GPRS send : gorsdata 1 ; return default contracted format ,change the parameter 1 to 0;

121206031158, +8615999607487, GPRMC, 061158.000, A, 2235.3315, N, 11350.2717, E, 0.00, 0.00, 061212, , , A*64, F, help me, imei:359772039292793, 11, 52.3, F:4.10V, 1, 138, 24807, 460, 00, 2490, 0F2B, 7.24km\r\n

The following is a group of store data in GSM blind area, when GSM signal recover, the store date will upload;

LOG121206031158, +8615999607487, GPRMC, 061158.000, A, 2235.3315, N, 11350.2717, E, 0.00, 0.00, 061212, , , A*64, F, help me, imei:359772039292793, 11, 52.3, F:4.10V, 1, 138, 24807, 460, 00, 2490, 0F2B, 7.24km\r\n

GPRS Data Analysis

121206031158

Time Serial No.: 11:58 03/06 2012

,

Separator

+8615999607487

Mobile No.: Authorized number under authorization, otherwise, the last operation mobile number or in blank

GPRMC, 061158.000, A, 2235.3315, N, 11350.2717, E, 0.00, 0.00, 061212, , , A*64

GPRMC data: Complete GPS module data, not be modified by MCU

F

GPS has signal or not: Yes “F”, No “L”.

Help me

Alarming information , blank without alarming data

SOS=help me SYOCKADE MOVE IN SPEED battery SHAKE ADDRESS CH ADDRESS EN

imei:359772039292793

GPRS module IMEI No

126

Data length in the bracket, in bytes.

尢

CRC Test: Two-byte hex data, as hex, showing in blank or random code. “尢” is “0XC7A8” (16 bits)

```
unsigned int CRC_16(unsigned char *buf, unsigned int datalen)
```

```
{
```

```
    unsigned int i;
```

```
        unsigned char j;
```

```

unsigned char c, treat, bcrc;
unsigned int crc = 0;

for (i = 0; i < datalen; i++)
{
    c = buf[i];
    for (j = 0; j < 8; j++)
    {
        treat = c & 0x80;
        c <<= 1;
        bcrc = (crc >> 8);

        crc <<= 1;
        if (treat != bcrc)
            crc ^= 0x1021;
    }
}
return crc;
}

```

Multi-function data Analysis

11

Get 11 GPS Numbers

52.3

Altitude 52.3M

F:4.3V

Full battery Power L: 3.65V=Low battery Power

1

0=No Charging 1= Charging

138

The length of the GPRS string

24807

CRC16 checksum

460, 00, 2490, 0F2B

MCC, MNC, LAC, CellID

7. 24km\r\n

Mileage calculate \r\n Enter end

GPS Data Analysis

GPRMC, 061158.000, A, 2235.3315, N, 11350.2717, E, 0.00, 0.00, 061212, 000.0, 000.0, A*64

GPRMC

GPS data Began to character

061158.000

UTC time, hhmmss.sss(hr. min. sec. msec.) format

A

Position, A=valid position, V=invalid position

2235.3315

dimension ddmm.mmmm(degrees minutes)format (the front 0 should also be input)

N

dimension semisphere N(north semisphere) or S(south semisphere)

11350.2717

longitude dddmm.mmmm(degrees minutes)format (the front 0 should also be input)

E

longitude semisphere E (east longitude) or W (west longitude)

000.0

ground speed (000.0~999.9, the front 0 should also be input)

000.0

ground direction (000.0~359.9degree, take true north as basis reference, and front 0 should also be input)

061212

UTC date, ddmmyy(d/m/y)format

000.0

magnetic declination (000.0~180.0degree, the front 0 should also be input)

0000.0

magnetic declination direction

A

Mode indicator(NMEA0183 3.00 version only, A=autonomous position, D=difference, E=estimate, N=invalid data)

64

Data length in the bracket, in bytes。

Send command to device by GPRS

Just need to add “\r\n” behind SMS command, for example, The SMS command format is password+ command + blank + parameter, The GPRS command format is command + blank + parameter\r\n, click enter to end the command.

Command list

123456=Default password. □Represents a space, Set success equipment reply “OK”. Command spell wrong will no reply. All the command not case sensitive TK103-2 TK102-2 Anywhere After authorized, the authorized mobile phone not need input password Note the Space, anytime please send command correctly

Adapt to the models: TK102 TK103-2 TK102-2 TK106 Anywhere

password123456□*****

Change password * is the new password

admin123456□*****□*****

Authorization, *is phone number, can set 5 authorized phone number; if set space, means relieve authorized

monitor123456

Monitor,Monitor the target

tracker123456

Monitor,Cancel monitor, Restore positioning mode

t030s005n123456

Successive positioning,every 30s positioning 5 times

t020h***n123456

Successive positioning,every 20h positioning countless times; S=second, m=minute h=hour n=time

t030s000n123456

Successive positioning,Parameter 0 is for closing successive positioning

stockade123456□22.589155N,113.837732E;22.559000N,113.897111E

Geo-fence,Rectangle fence, the longitude & latitude in top left corner and buttom right corner,, pay attention“,”“;”distinguish .parameter blank space is for cancel.

move123456□200

Movement alert,radius 200M circle with the center of equipment,set □ means cancel

speed123456□080

Over speed alert,080 means 80km/h set □ means cancel

smslink123456

SMS replying mode, google link, Recover the data format: begin

smslinkone123456

One time positioning, Reply one time positioning data

low123456□battery

Low battery alert,low to 3.6V,30 minutes once to alert until power off

time123456□zone□8

Time sitting,UTC time 8=+8 hours, -6.5= -6:30

apn123456□cmnet□User name□ password

APN sitting,such as China Mobile: apn123456cmnet, Needn't to fill in if there isn't user and password,APN set □ means cancel

adminip123456□119.147.23.100□2337

IP PORT sitting,Fill in standard IP PORT 7070=PORT,set □ means cancel

gprsmode123456□0

UDP/TCP,0=TCP 1=UDP default 0, When setting ,restart , it will executive

status123456

Check Parameter,for example:

imei=861785004780965,speed=0,bat=100%,charging=1,gps=L,csq=17,ip=119.147.23.100:2337,apn=cmnet,T(s)=30,TL(m)=0,time=8,shake=0,mode=tracker

begin123456

Factory reset, Delete all the parameter

version123456

Check the version,JEO-108 V2.00 version

format

Super command,Don't need password, format system

Adapt to the model: TK103-2 TK102-2 TK106 Anywhere

123456gprsdata□0

GPRS uploading format,1=have base station and mileage data 0=don't have it

123456Tlimit□100

Distance limit sending,GPRS data uploading, less than 100m it not uploading data to platform

123456traffic□5

Traffic model,1 stand for lowest sensibility level ,10 is the highest sensibility lever ,0 is for closing this function

123456shake□5

Shake sensor,1 stand for lowest sensibility level ,10 is the highest sensibility lever,0 is for closing this function

123456smslink

the format of Reply message,hook up to Google

123456smstext

the format of Reply message,Data format

123456batt□13800138000

Set alerts receiving number when it is low electricity,Set alarm receiving number, when it is low electricity .it will send a message to the authorization number without this setting.

123456km0

Mileage calculation,begin to calculate

123456km?

Mileage calculation,Inquires the calculation results

123456echoing 1

Echo,This command used for developer

Date will be saved at SD card when in weak GPRS signal and will be send to platform automatically again when have GPRS signal,no need set.



The adapting model:TK103-2 TK102-2 Anywhere

123456ldu,server=http://www.cnjeo.com/down/carv2.0.bin,en=72

Upgrade Remote, Upgrade command of the on-board equipment system ,aboveV2.0 version can be used. Before upgrade ,pls confirm upgrade file version with the franchiser, otherwise it may cause a serious mistakes

When send over the air update command , it will receive 4 replies :

- a) ldu,server=http://www.cnjeo.com/down/20121212tpj.bin,en=72 ok!
- b) Download upgrade file successful! Restarting...
- c) LDU successful !
- d) Download upgrade file fail! Error: 10

Explain for the above 4 replies :

a= means the update software command send successful .
b=the software install successful
c= new system works well
d=download fail

The tracker must be installed with the SD card and be set APN if you want to remote upgrade



123456WORK,poweroff=17:45,poweron=18:00,powere=1
17:45=off time 18:00=on time 1=execute 0=stopping execute

123456work

Cancel the setting about Timer-Power-on and Timer-Power-off

123456address en

Got geo-info by text, Alarm data have "ADDRESS EN"或"ADDRESS CH" words, ADDRESS EN=request for English address , ADDRESS CH=request for Chinese address.

The adapting model: Anywhere

123456talk

Adding call mode,talk like phone,Under this mode: headset in,when call in,device auto answer,and end the call when other hang up.Press the earphone button to call the first authorization number,if the first authorization number do not answer,call the second...,if no any authorization,call the last operation number.

123456debug AT+QATDCH=1

This command used to choose headphones call or host device call.Default is headphones call. QATDCH=1 means headphones call,QATDCH=0 means host device call.

123456audio,SpkVol=100,MicVol=5,Headset=0

SpkVol:Receiver,range [1-100]

MicVol:Speaker,range [1-100]

Parameter Headset is default 0, Handsfree mode, and 1 is Headset mode

The adapting model: TK103-2

123456powercar□11

Cut off oil,When the parameters "11" is changed to "00" ,it mean to oil recovery.

123456fortify

Fortify/No fortify.Call the tracker: fortify. Call again: no fortify.When in fortify model, ACC line connected, will alarm.

123456fortified

Check fortified model,ortifying” or “no fortify” 。 Include position date.

- a) A/B sim car can switch automatically, not need to set.
- b) When in fortify model, all the alarm will send to authorized mobile phone and platform.
- c) The white line need to connect the speakers positive wires of the car alarm system. When car alarm more than 10 seconds, the authorized mobile will received the alarm sms.
- d) Low power alarm will automatically send to authorized mobile phone, do not need to set.
- e) Connect ACC line, when in fortify model, if the ACC line be connected, will send alarm to authorized mobile phone.
- f) All the model trackers need set below command if want transfer date to online platform.
 - A: set APN B: set IP PORT C: set “Successive positioning” command



Chinese Platform: <http://v5.a6gps.com>

English Platform: <http://www.a6gps.com/en>

Mobile Platform: <http://m.a6gps.com/en>