JT707A E-seal Tracker

Shenzhen Joint Technology Co., Ltd

1. Application

Guidance for internal techniques and customer support

2. StandardIntroduced

IEC60529/GB4208-2008 Housing Protection Level

3. Product Introduction

JT707A ,an Intelligent E-lock for mobile assets management solutions ,boasts the tiny size,easy installation and low cost which supports GPS. Real-time tracking information for assets and remote changing of product's configuration are available. Coupled with rechargeable or disposable Li-ion battery, JT707 can be re-used or one-time-used, which is a set of safe, intelligent and convenient solutions for mobile assets management.

3.1. Product and Accessory

Include JT707A device:

(JT707A-Necessary)

4. FunctionIntroduction

4.1. Remote Tracking of Device'sStatus

Device's status can be captured by means of real-time tracking, such as speed,direction,GPS location and status of lock rope, which secures the shipping in a more efficient way.

4.2. Smart Working Mode

Device in sleep can be waken up by inserting or cutting rope. It would be convenient for clients to be kept informed of assets' location and other status by uploading real-time data, which enables them act accordingly and secures the reliability in transit. Power-saving mode will be activated by default if the device is disconnected for a long time.

4.3. Status of LockRope

Real-time Status of lock rope will be uploaded on user platform, following the GPS data as well.It would be crystal clear for clients to be kept informed of the current assets status; The rope-cut will be counted which enables a maximum use for clients.

4.4. RED LED Status

ON 500ms, OFF 500ms, means registered network successfully;

ON 100ms, OFF 100ms, means connected to server and sending data;

OFF always, means device in sleep mode.

4.5. Function&Performance

Locating	Ways	GPS,LBS
	Data	Coordinates.Speed,Time,Direction
Data-collecting	Live Status	Lock rope, Motion,Location, Battery
	Lock Status	Real-time counting of lock/unlock
Data Storage	Size	1000 data can be stored
	System	Upload blind area data when available
Data Communication	Ways	GSM 1. Inbuilt ESIM can support data only, can not support SMS; 2. When deice work in sleep mode, can not use SMS
	Content	Live data, Blind area data,Alarms
	Smart Wake-up	Fixed-time wake up or triggered by rope-cutting
Alarm	Alarm	Rope-cutting alarm

Battery	Battery management	Low battery alarm
		Recharge Li-ion battery, capacity 1500mAh;
		Low battery management
Configuration	Configuration	USB PORT, GPRS

4.6. Continuous Working Period

No.	Upload Interval	GPS, GSM Signal Normal to Work	GPS, GSM Signal Poor to Work
1	30 Minutes/Per Data	16 Days	8 Days
2	4 Hours/Per Data	101 Days	55 Days
3	12 Hours/Per Data	200 Days	128 Days
4	24 Hours/Per Data	264 Days	193 Days

Battery Capacity: 1500mAh

5. Operation Device

5.1 Recharge

Put device on the "Config&Recharge BOX", switch to recharge status, the "Config&Recharge BOX" the other side connect to adapter, then red LED will be light.

Note: LED turn to green means full charged.

Note: When you are using adapter output 5V/1A, recharge to 90%, will spend 100 minutes, recharge to 100%, will spend 150 minutes.

5.2 Device Configuration
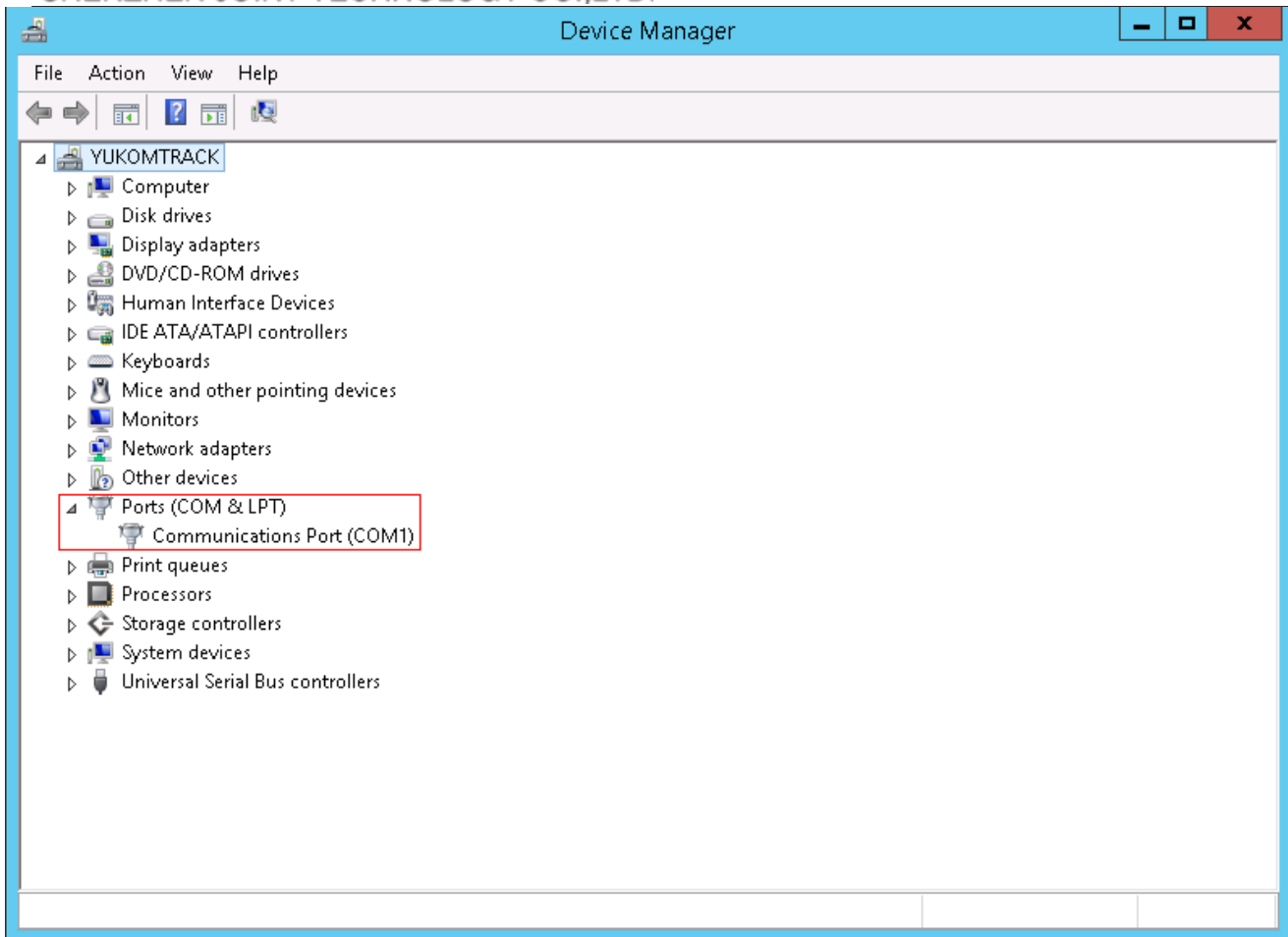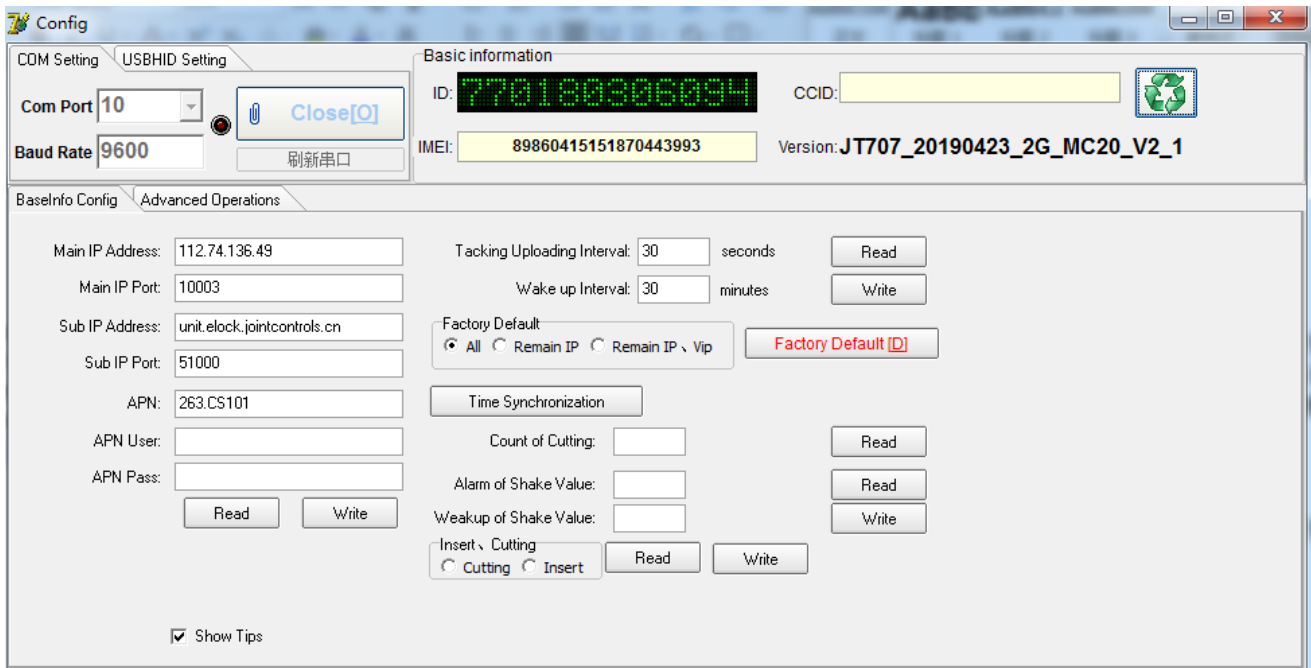
5.2.1 PC tool to configure device

Put device on the "Config&Recharge BOX", switch to config status, the "Config&Recharge BOX" the other side connect to computer, then green LED will be light.

Configuration cable drive.exe

Then install the config cable driver.

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Check the cable driver and COM port status.

Running the PC tool to set device parameter

5.2.2 GPRS/SMS(Inserted Micro SIM Card)

5.2.2.1 To Query Terminal's Basic Information

Send commands	(700160818000,1,001,BASE,1)		
Commands descriptions	Query terminal version		
Premise of commands	no		
Parameters descriptions	no		
Relevant function descriptions	Returns the following message： 1. Terminal version 2. Alias of terminal ID 3. GSM model version 4. SIM card's CCID 5. IMEI of GSM model 6. GSM Internet information of community		
Expectations returns	(700160818000,1,001,BASE,1,1,20150418_G300,0,BeiHuan,1137B03SIM900M64_ST_MMS, 89860042191130000000,89860042191130272549,012207005620932,460,00,4243,6877)		
	No.	example	description
	1	20150418_G300	Current terminal version
	2	0,BeiHuan	The 0 means English, while 1 means Unicode of other languages.,"BeiHuan"is expressed by ASCII code. For example, there are 8 bytes for alarm(62A58B66). Here is English with the name of"BeiHuan".
	3	1137B03SIM900M64_ST_MMS	GSM model version
	4	89860042191130000000	ESIM ICCID
	5	89860042191130272549	Micro SIM cardICCID, empty if no SIM card
	6	012207005620932	IMEI of GSM model

7	460,00,4243,6877	Internet information： 460means Mobile Country Code (MCC)，it represents China； 00 telecom operators network NO. （China Mobile--00，China Unicom--01）； 4243 Base station NO.---cell ID information； 6877 Location Area Code ---LAC information。 CELL ID and LAC is **hexadecimal**，which means 4243 transform into 16963 by **decimal** .
Feedback descriptions	See above	

5.2.2.2 To Set Query/Set Master &Slave IP address and port, APN, user-name and password

Send commands	(700160818000,1,001,BASE,10,1,211.154.112.98,1088,211.154.112.99,1088,CMNET,abc,123456)
Command descriptions	Query/Set Master &Slave IP address and port, APN , user-name and password
Premise of commands	no
Command-parameters descriptions	To Set parameter： 1,211.154.112.98,1088,211.154.112.99,1088,CMNET,abc,123456
	1 Function of commands： 0 means query ESIM parameters, the later parameters can be ignored，eg：(700160818000,1,001,BASE,10,0) 2 means query Micro SIM card parameters, the later parameters can be ignored，eg：(700160818000,1,001,BASE,10,2) 1 means setting ESIM parameters, (700160818000,1,001,BASE,10,1,211.154.112.98,1088,211.154.112.99,1088,CMNET,abc,123456) Main IP, PORT: 211.154.112.98,1088 Backup IP, PORT: 211.154.112.99,1088 ESIM APN: CMNET APN user: abc APN password: 123456 3 means setting micro SIM card parameters, (700160818000,1,001,BASE,10,3,211.154.112.98,1088,211.154.112.99,1088,CMNET,abc,123456) Main IP, PORT: 211.154.112.98,1088 Backup IP, PORT: 211.154.112.99,1088 Micro SIM card APN: CMNET APN user: abc APN password: 123456

	Items can setbe null
	If the backup IP & port no need to set, user-name and password will be the following： (700160818000,1,001,BASE,10,1,211.154.112.98,1088,,,CMNET,,)
	211.154.112.98IP address: server address for uploading GPRS. PS: The first IP is master IP and the latter is slave IP.
	1088 port: No. Of server port ; PS: The first IP is master IP and the latter is slave IP.
	CMNET APN name: within 32 bytes
	abc,123456 user-name and password: both within 20 bytes
Relevant descriptions of function	When setting master IP，it will immediately reconnect to newly set master IP after terminal response When master IP fails to connect, terminal will query if there is a IP setting automatically; If detects ,it will connect slave IP.
Expectations return	(700160818000,1,001,BASE,10,211.154.112.98,1088,211.154.112.98,1088, CMNET,abc,123456)
Feedback descriptions	feedback： 211.154.112.98,1088,211.154.112.98,1088,CMNET,abc,123456: .Same as above

5.2.2.3 To Query/Set upload,Sleep, Periodic wake-up Interval

Send commands	(700160818000,1,001,BASE,6,1,60,30,30)
Commands descriptions	Query/Set upload ,sleep,periodic wake-up interval
Premise of commands	no
Command-parameters description	Set parameter：1,60,30,30
	1command function：0 means query; If it's 0，the following can be ignored，eg(700160818000,1,001,BASE,6,0) 1 means setting.
	60--upload interval(Montion), unit by minute. For the upload contents, please see"2.8positioning data" This value set 30minutes as default. The minimum value is 30minutes and maximum 1440 minutes(12h).
	30--Fixed as 30, reserved.
	30--upload interval(Static), unit by minute. For the upload contents, please see"2.8positioning data" This value set 30minutes as default. The minimum value is 30minutes and maximum 1440 minutes(12h).
Relevant descriptions of function	no
Expectations return	(700160818000,1,001,BASE,6,60,30)
Feedback	feedback：60,30:same as above setting

descriptions	

5.3 Install Micro SIM Card

Remove the device top side cover.

Insert Micro SIM Card, then recover the top side cover.

Note: Device within Embedded-SIM, as below picture:

6. EnvironmentAdaptation

■Low temperature type battery

Temperature: -40℃~55℃

■ High temperature type battery

Temperature: -20℃~75℃

■ Humidity

It can work for 48 hours under the testing of +50℃ and 95% non-condensing humidity.

■ Impact

The device will be intact under the testing of half sine wave, 5G acceleration,pulse duration of 11ms by impacting three times from each axis. The device functions well during and after testing.

■ Vibration

Scanning range:5Hz–300Hz. Scanning speed: 1oct／min

Scanning time: 30 minutes at each direction

■ Housing Protection grade

Housing of Intelligent device is compatible with the requirements of IP65 in GB/T4208-2008

■ Electromagnetic Compatibility

Immunity of ESD is compatible with the requirements of GB/T17626.2. With the testing grade of 7kv accepted contact discharge and 14kv air discharge, grade B is judged. Immunity of radiation can meet the requirements of GB/T17626.3. With filed strength of 24V/m and frequency of 20MHz–6000MHz, grade B is judged.

■ Installation Compatibility

Ways: Locked by bolting and unlocked by rope-cutting

7. CoreParameters

<table>
<tr><td rowspan="15">Basic

parameters</td><td>Size</td><td>46mm*21mm*52mm</td></tr>
<tr><td>Length of Lock Rope</td><td>300mm, with unique ID for each rope</td></tr>
<tr><td>Weight</td><td>about 67g</td></tr>
<tr><td>Housing material</td><td>Nylon</td></tr>
<tr><td>Protection grade</td><td>IP67</td></tr>
<tr><td>Working Temperature</td><td>-10°C -- 45°C</td></tr>
<tr><td>Storage Temperature</td><td>-40°C -- +85°C</td></tr>
<tr><td>Relative Humidity</td><td>5%—95%</td></tr>
<tr><td>Working Current</td><td>Av. current<100mA
Standby ： <20uA</td></tr>
<tr><td>Battery Capacity</td><td>1500mAh,3.7v rechargeable Li-ion, 500 data upload supported</td></tr>
<tr><td>GPS Antenna</td><td>Built-in</td></tr>
<tr><td>GSM Antenna</td><td>Built-in</td></tr>
<tr><td>SIM</td><td>Micro SIM Card</td></tr>
</table>

GSM	2G: GSM 850MHz/900MHz,DSC1800MHz,PCS1900MHz。 Communication Mbps: GPRS data downstream traffic: Max 85.6kpbs GPRS data upstream traffic: Max 85.6kpbs Coding format: CS-1、CS-2、CS-3 and CS-4 Embedded protocol TCP	

GPS and Beidou are both supported

	GPS	Beidou
Sensitivity	Track -167dBm Capture - 149dBm Re- capture -161dBm	
Frequency	GPS L1 Frequency (1575.42MHz)	BeiDouB1 (1561.10MHz)
Start speed	Hot start <1s Cold start 35s(typical value)	
Accuracy	<10 meters	

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.
This device and its antenna(s) must not be co-located or operating in conjunction with any other antenna or transmitter.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.
If this equipment does cause harmful interference to radio or television reception,
which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
-- Reorient or relocate the receiving antenna.
-- Increase the separation between the equipment and receiver.
-- Connect the equipment into an outlet on a circuit different
from that to which the receiver is connected.
-- Consult the dealer or an experienced radio/TV technician for help.
To maintain compliance with FCC's RF Exposure guidelines, This equipment should be installed and operated with minimum distance between 20cm the radiator your body: Use only the supplied antenna.