

2.4G RFID READER USER MANUAL

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1 Product overview

2.4G reader is a device which can identify the active 2.4G tag for a long range. It can built in your system by serial port communication flexibility.

1.1 Features

- Support RS-232.
- External interface and power supply configurable for users' need, enhancing flexibility of systematic integration
- Support multi-reading, multi-reader operating under intensive environment
- Metal shell, high-tension.

1.2 Specification

RF Parameters

Operating Frequency	2.400-2.4835GHz
Rx Sensitivity	250kbps@-94dBm
Identification Angle	Omni-directional
Communication Interfaces	RS-232
Firmware Upgrade	Support serial port

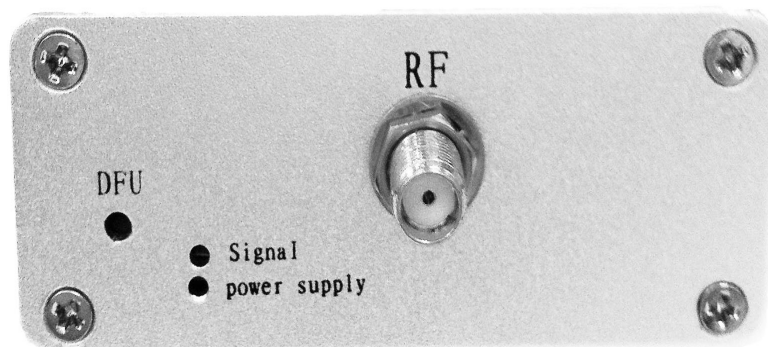
Tag operation

Tag Protocol	Private Protocol
Tag Operating Mode	active operating mode tags
Reading Range	0-50m
Identification	100pcs (tag ID)

Mechanical & Electrical performance

Product Dimensions	78mm*66mm*26mm(excluding antenna)
Net Weight	0.12kg
Power Supply	DC 12~24V
Power Consumption	300mW
Operating Temperature	-40°C~+60°C
Storage Temperature	-40°C~+80°C
Humidity	5% ~ 95% (non-condensing)
IP Rating	IP55
Installation	Bolted or nailed, bundled

1.3 Outside feature



Name	Description
USB	Support "USB Converter" to update firmware
RS232	Used to transmission the data
POWER	power supply DC12—24V
DFU	"Development Firmware Upgrade" ,Used to update the firmware

Signal	Indicator light of the RF signal
Power supply	Indicator light of the power supply
RF	RF antenna

2 The protocol

The 2.4G RFID READER transmission the data by the private protocol, and its baud rate is 115200 bps in the serial port.

The Baud Rate: *115200 bps*

2.4G RFID Reader Data Protocol

Format: \$T(2Bytes)+|+TagCount(3Bytes)+|+TAGID(8Bytes)...+|+Checksum(4Bytes)+ \r\n(2Bytes)

Code	Explanation
\$T	2Bytes,Packet prefix
Tag Count	3Bytes, The total number of TAGs in package.
Tag ID	8Bytes, A package can contain 100 tags at most. (If the first number of tag id is not less than 8that indicate Low Power Alarm.)
Checksum	2Bytes, means CRC check of all the data ahead, CRC-16 m (Polynomial=0xA001, initialize data is 0xffff)checksum, not including its own byte and end characters. For example:(hex format) 2424001113612345678fff500080430d0a 0x8043=CRC-16modbus(2424001113612345678fff5000).
\r\n	2Bytes,End char

Sample Data:

```
$T|032|10000265100001041000010510000106100001030D0000010D00000410000270100002311000024310000255100002491000025
91000024210000266100002321000024010000268100002481000009810000196100002451000009910000260100002621000025410000
2531000010210000241100001571000009710000100|A08A
```

3 How to configure

3.1 The basic command

You can set your device by the USB port with this command as below.

Command	Format	Note
Reboot the device	#DR	Reboot the device by the command
Reset to default	#DO	Reset to default config
config info	#DE	Print config info
Print Debug Level	*\$\$\$\$\$,300,X#	X=0, Not Show the Debug Info X=1, Show the Debug Info
timing interval to send tag data	*\$\$\$\$\$,220,X,100,Y#	X=0, turn off RF switch X=1, turn on RF Switch Y: The timing interval to send tag data. 30≤Y≤999 (unit: Sec.)

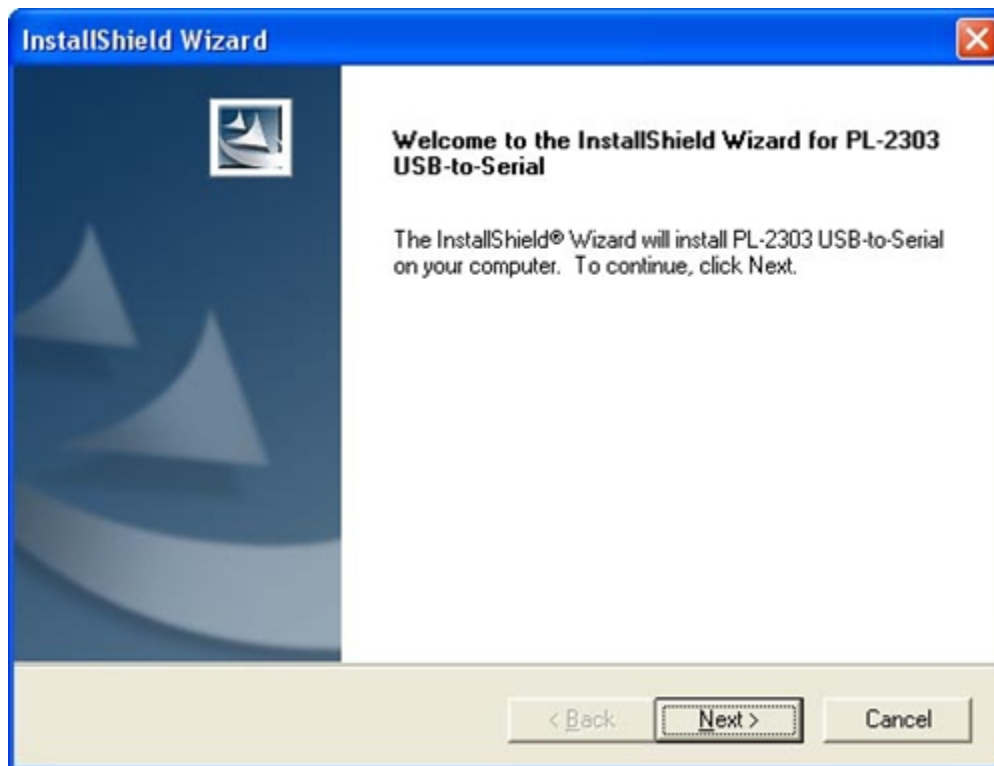
Note: \$\$\$\$\$\$ is your password in the device, and the default password is 000000.

4 How to update the firmware

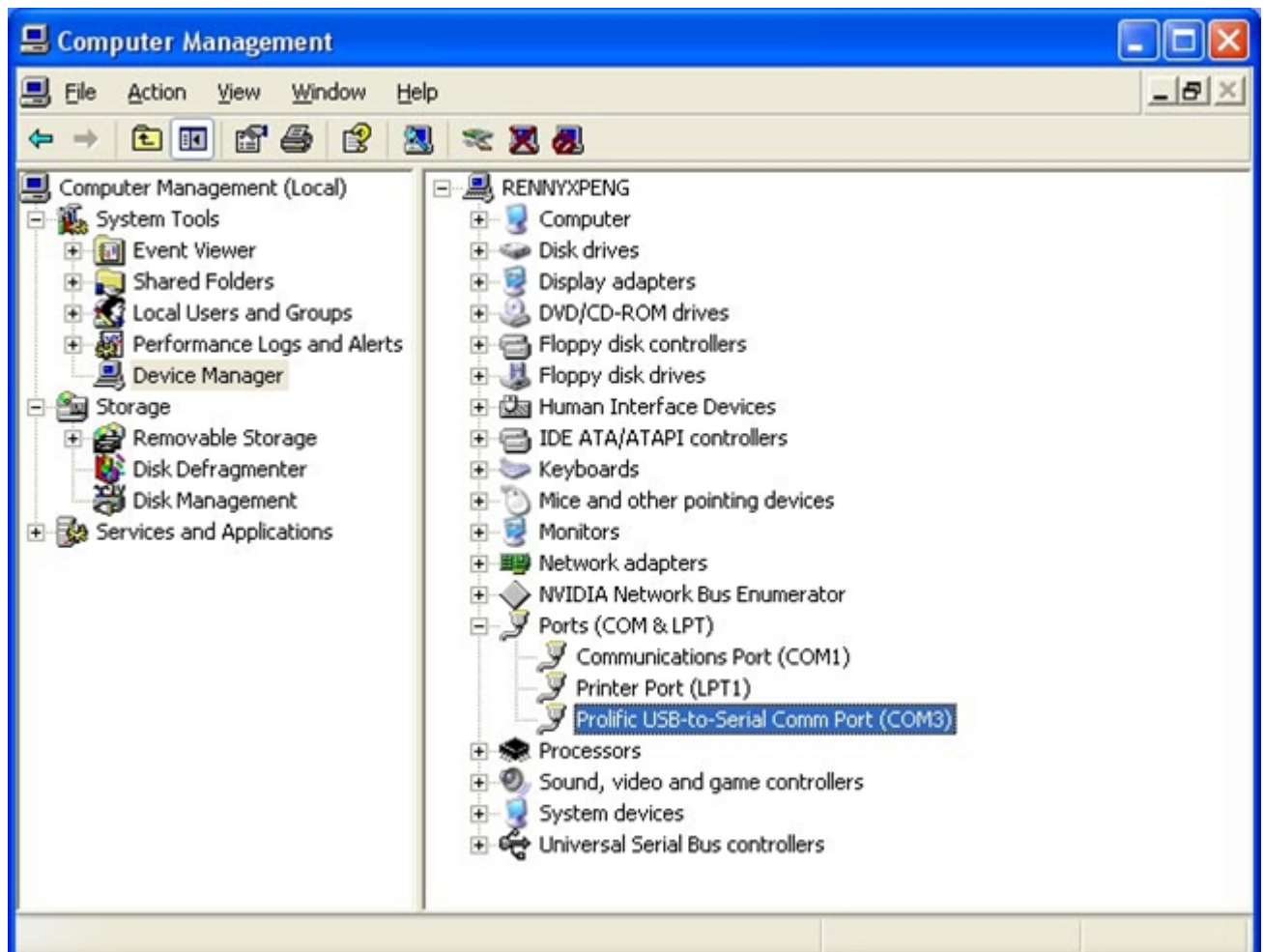
4.1 Prepare to update

Install RS232 cable driver (For the first time update)

A. At first, installing the Driver for "USB Converter"

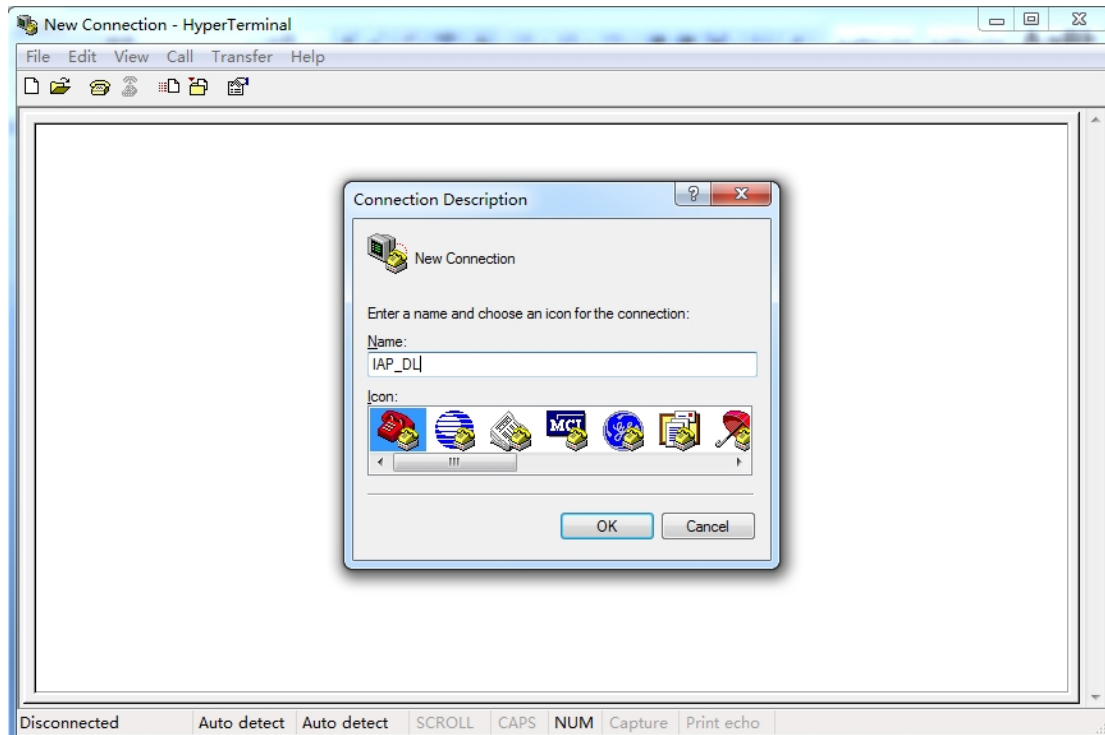


B. Connect the device to PC through RS232 cable, check the com port which the cable used

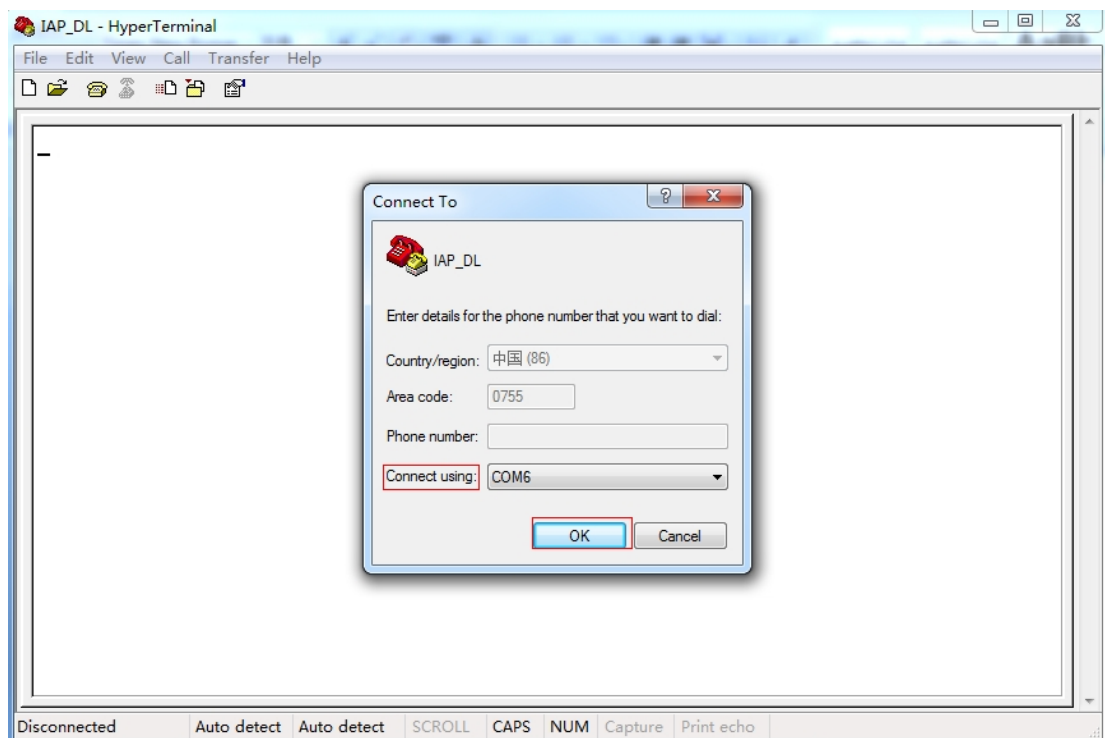


4.2 start to update.

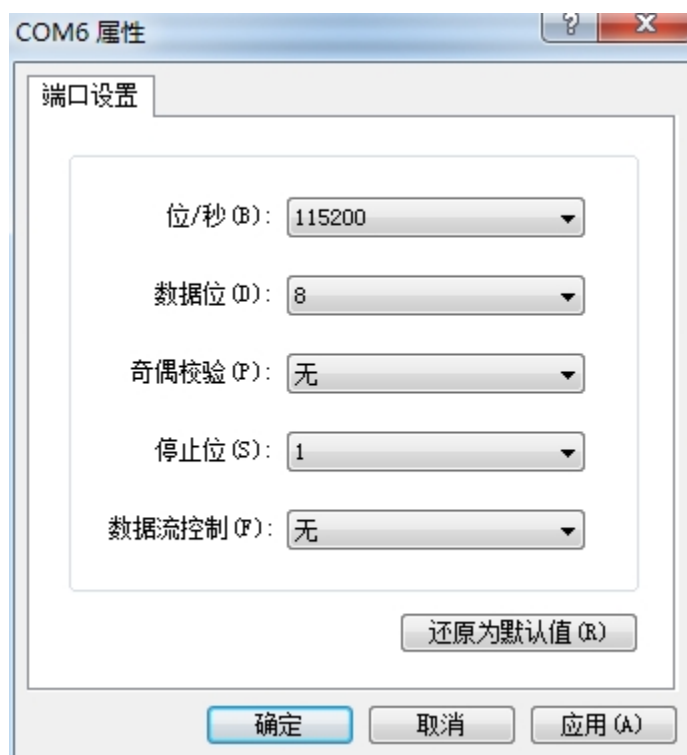
- 1) Turn on the device.
- 2) Build a New Hyper terminal connect, fill the name field, such as IAP_DL.



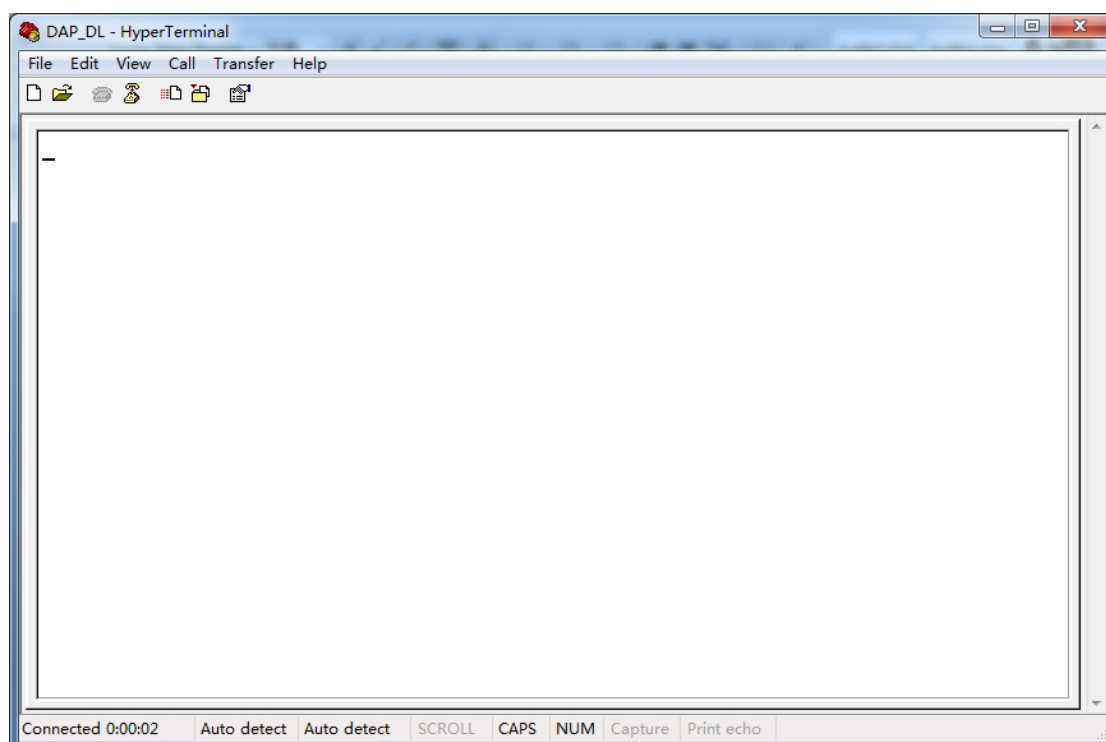
- 3) Choose the Com Port that the RS232 Cable used.



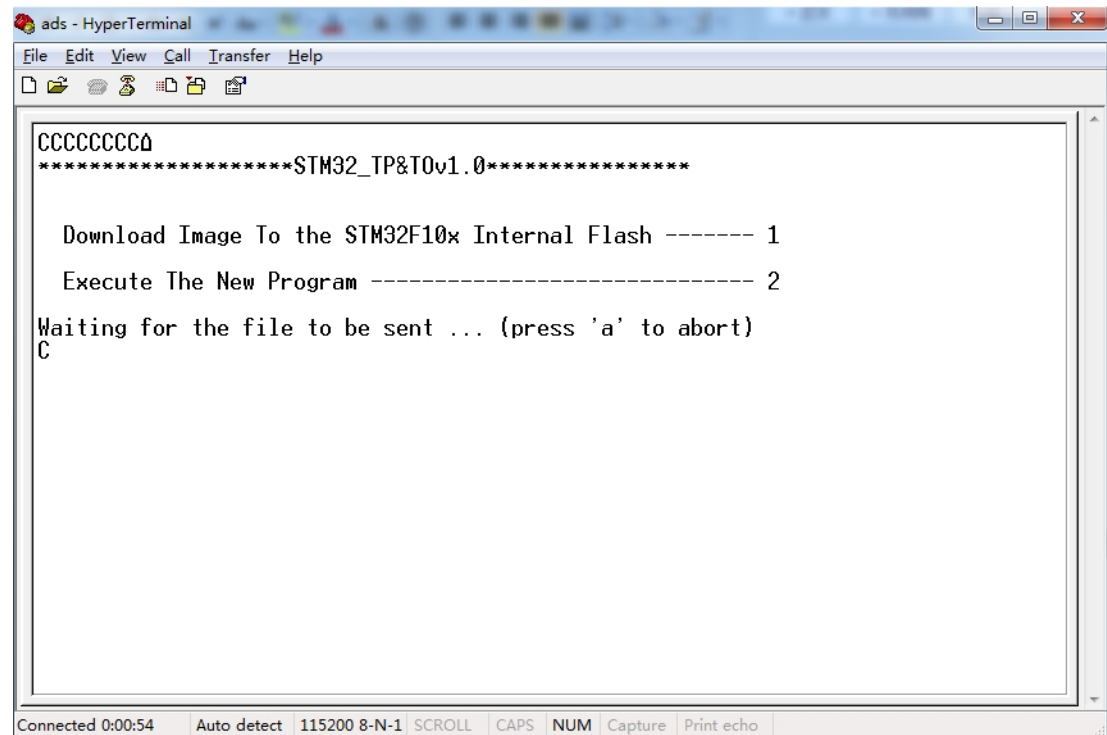
Configure the field as shown below.



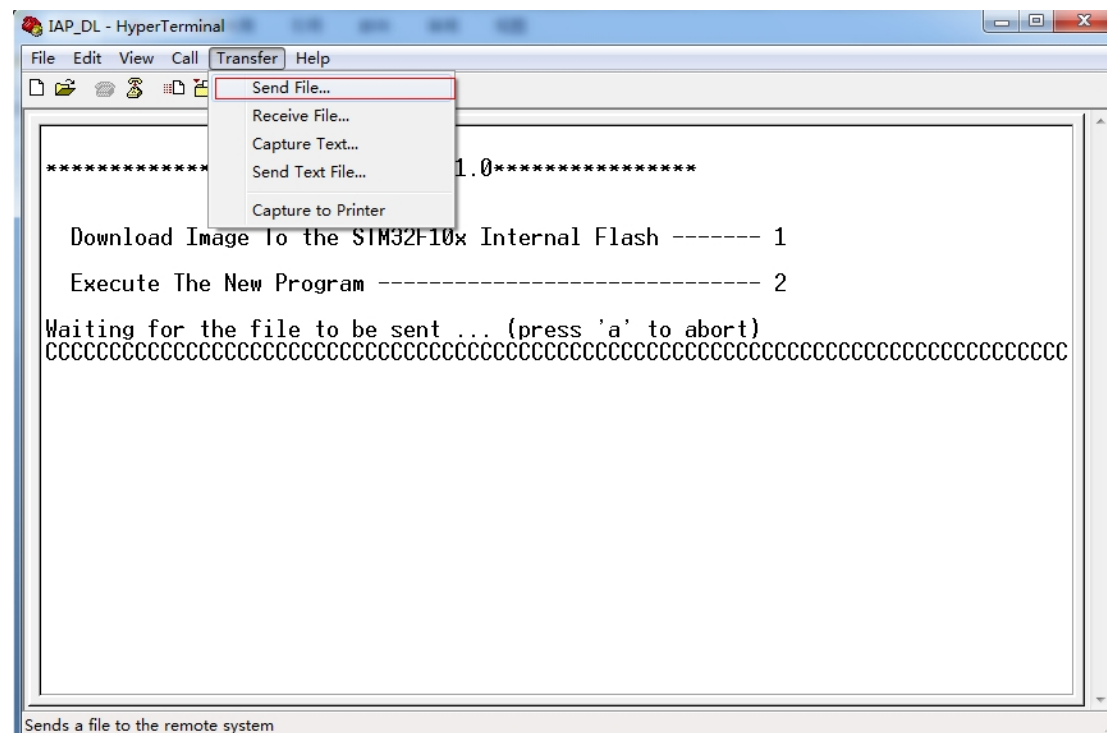
5) Enter into Configure Mode.



- 6) Turn Off device (cut off the power) .
- 7) Keep the“DFU” button is pressed and Turn on the Power, allindicator will keep lighting.
- 8) Press Keypad “1” , Hyper terminal will display(**waiting for the file to be sent ...CC**).

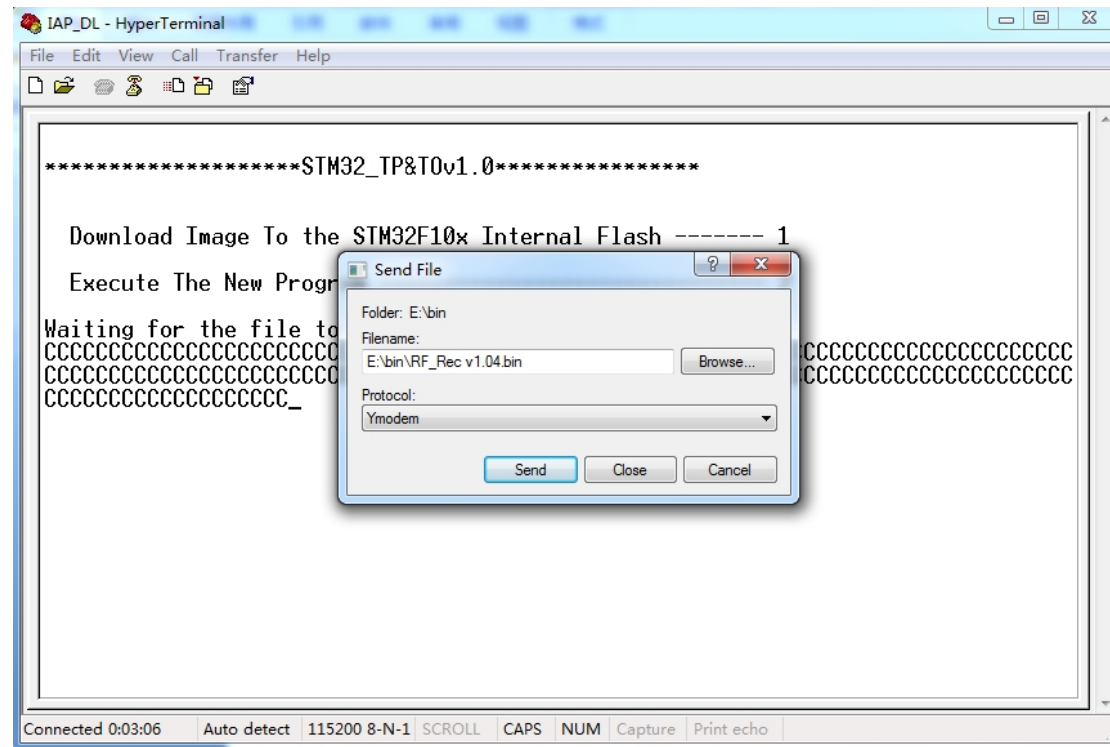


- 9) Then choose Send file (Send-> Send File) as soon as possible, because the update mode will keep for 92 seconds, if out of this time update will not be process succeed.

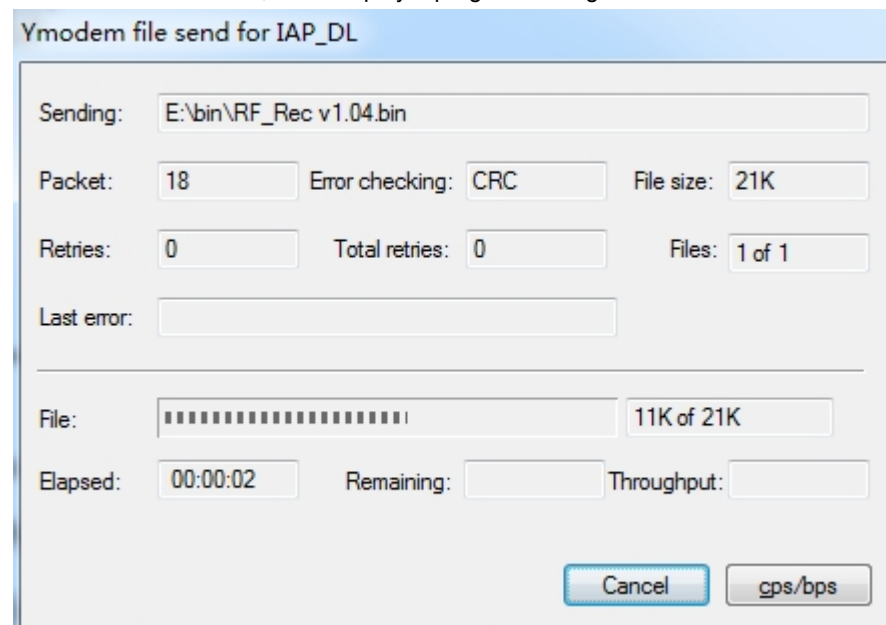


10) Choose the firmware that you want to Update;

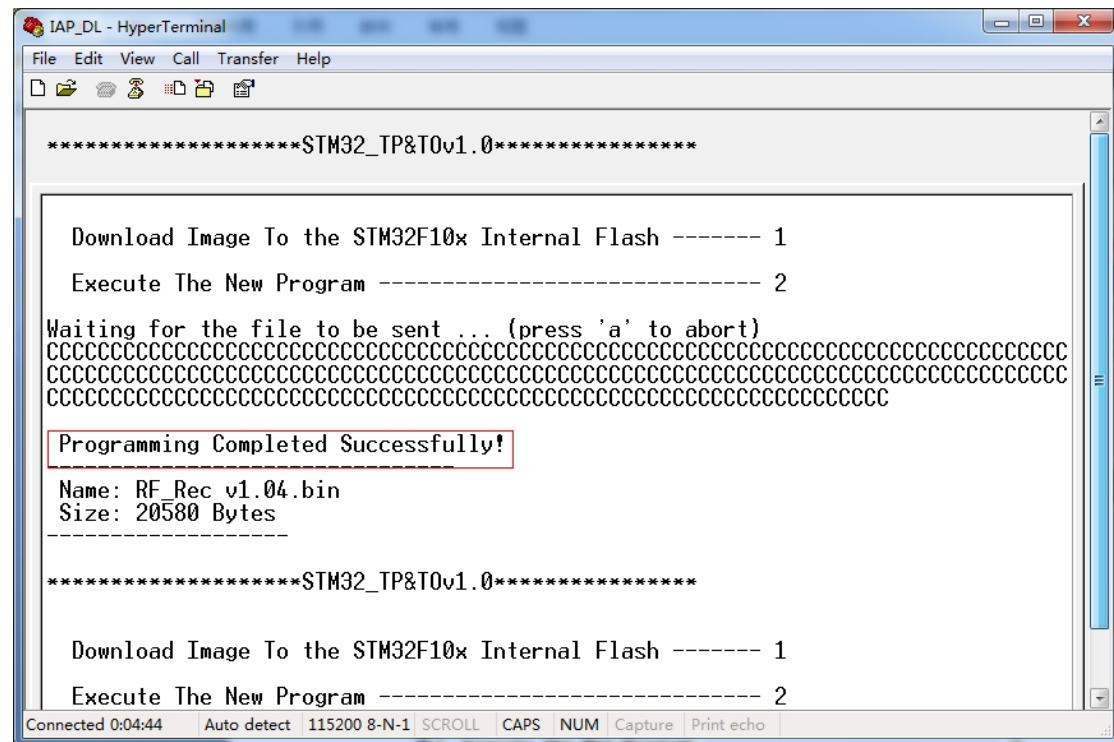
Protocol Choose: Ymodem



11) Press Send button, it will display a progress dialog



12) When Update finished it will be show "Programming Completed Successfully!",



13) Then restart your device, The updates is finished.