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# DAHUA IP Camera

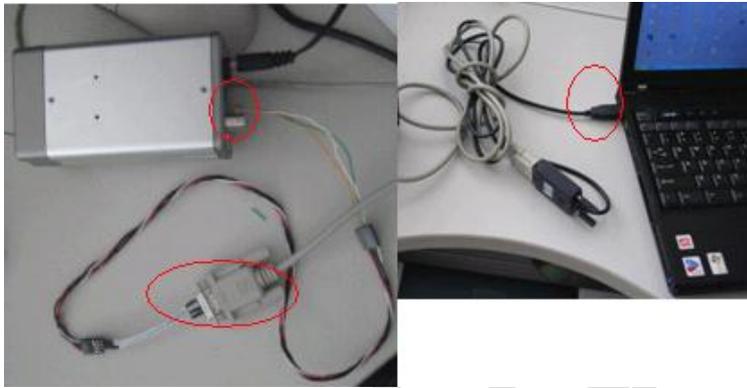
## RS232 Operation instructor

Version	Date	modify
1.0	2012-6-12	Pan lingyu

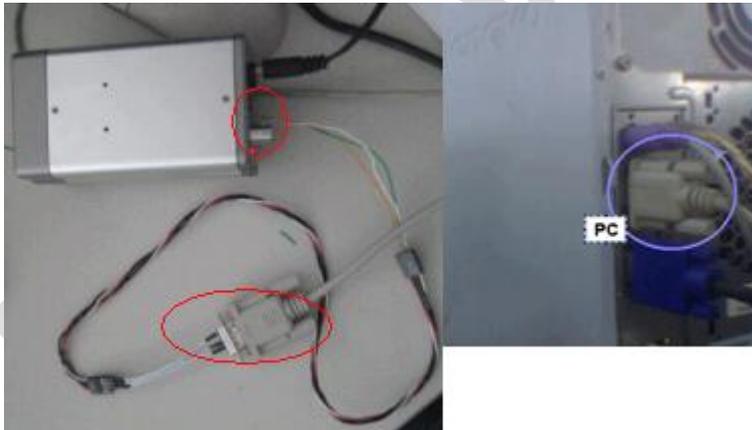
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## 1、 Hardware Environment & Connections

- 1) For RS232 operation, the devices are as follows:  
PC, RS232 Cable, IP Camera, network cable  
If there is only laptop computer, USB to RS232 cable is required.
- 2) Connection Mode is as follows:  
PC --- RS232 cable --- IP Camera  
PC--- through network --- IP Camera  
IP Camera to laptop computer



IP Camera to pc



- 3) How to do the RS232 cable for IP camera  
A、 Find a RS232 9-pin Male port



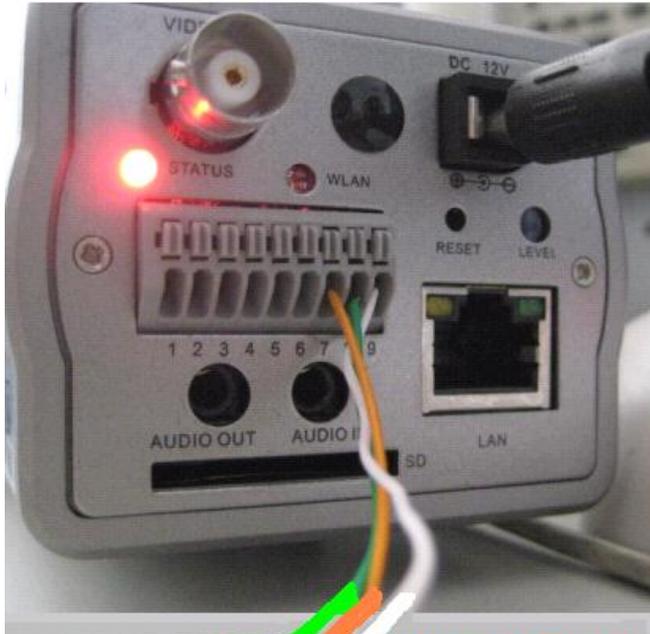
B. Connect RS232 port to IPC port

Old camera:

Pin2 to IP Camera RX (Pin7)

Pin3 to IP Camera TX (Pin8)

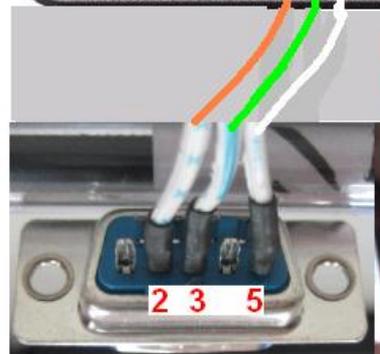
Pin5 to IP Camera G (Pin9)



**Old IP Camera:**  
Pin2 to Pin7  
Pin3 to Pin8  
Pin5 to Pin9

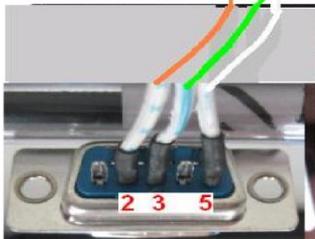


**New IP Camera:**  
Pin2 to RX  
Pin3 to TX  
Pin5 to G



ICE

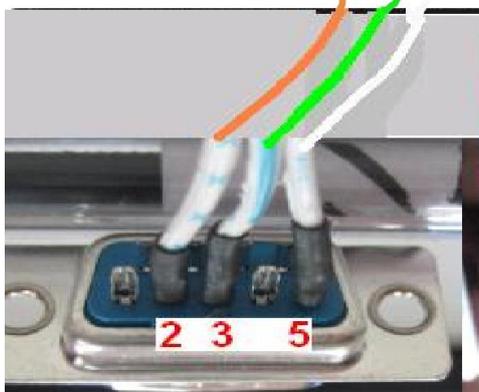
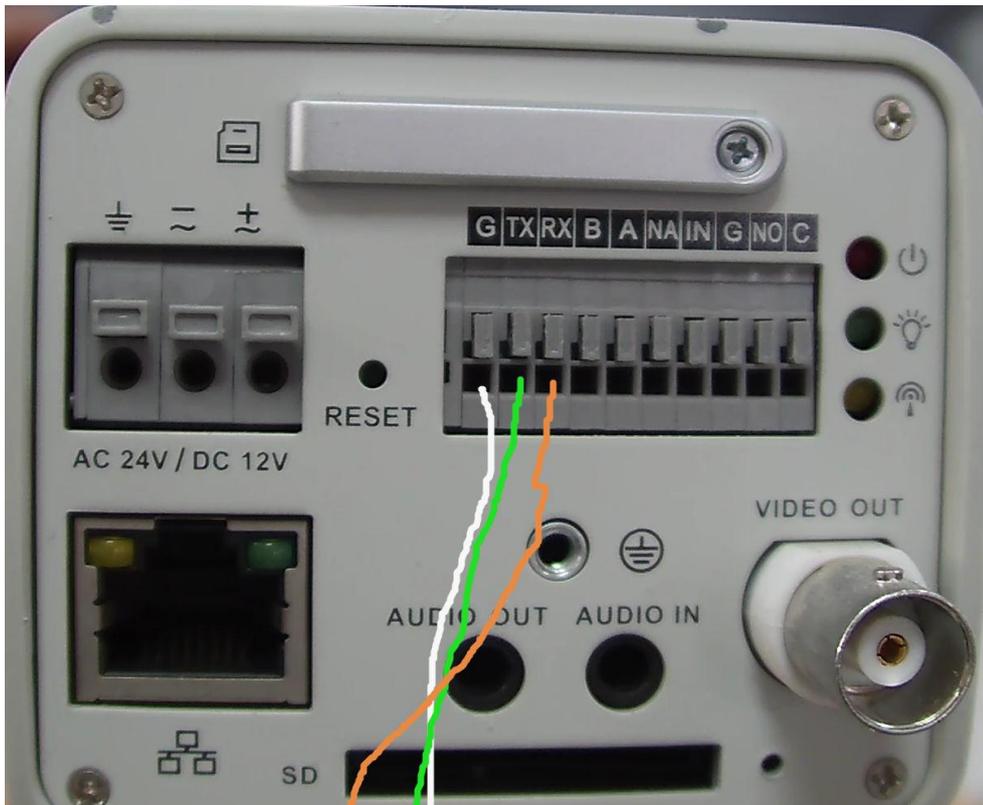
IPC-F6X5



**New IP Camera:  
Pin2 to RX  
Pin3 to TX  
Pin5 to G**

ICE Wubing

IPC-HF Series



**New IP Camera:  
Pin2 to RX  
Pin3 to TX  
Pin5 to G**

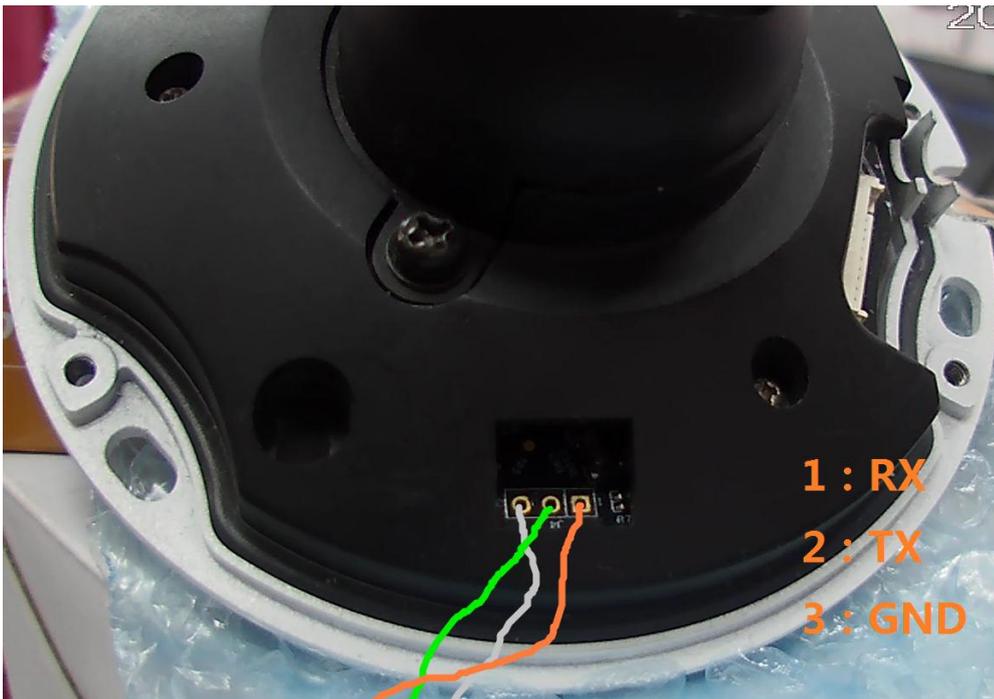
IPC-HFW3xxxC series



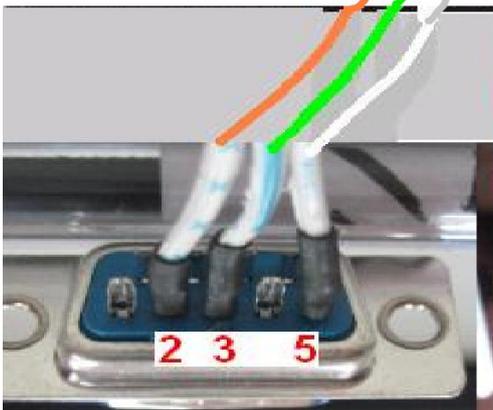
RS232 board



HDB3200C

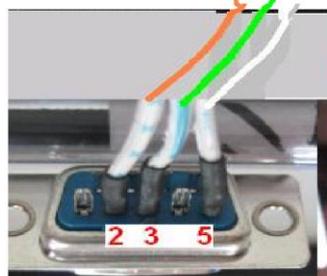
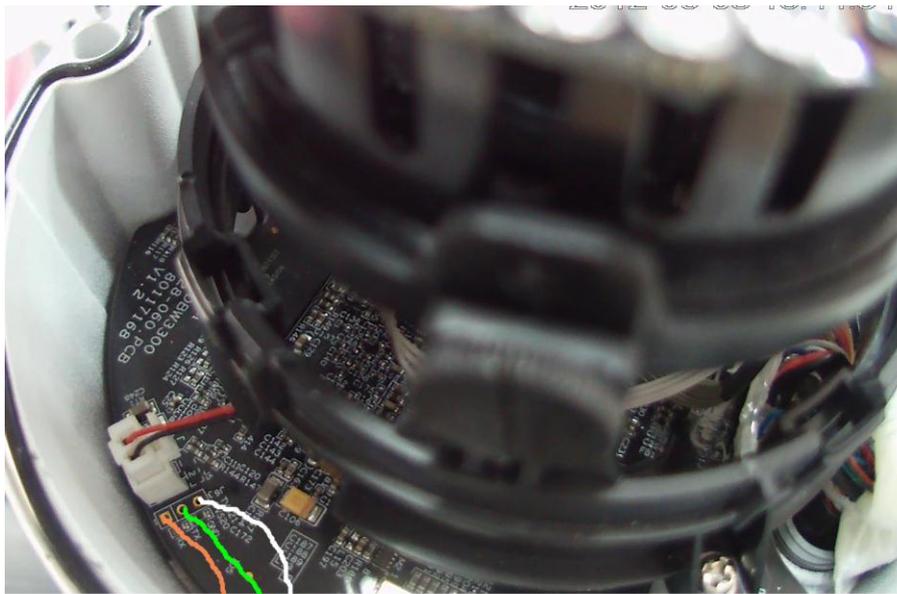


1 : RX  
2 : TX  
3 : GND



**New IP Camera:**  
**Pin2 to RX**  
**Pin3 to TX**  
**Pin5 to G**

HDB(W)3XXX

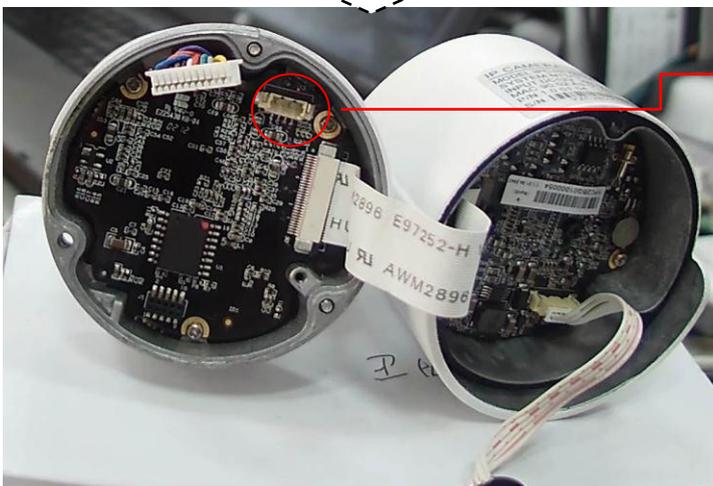
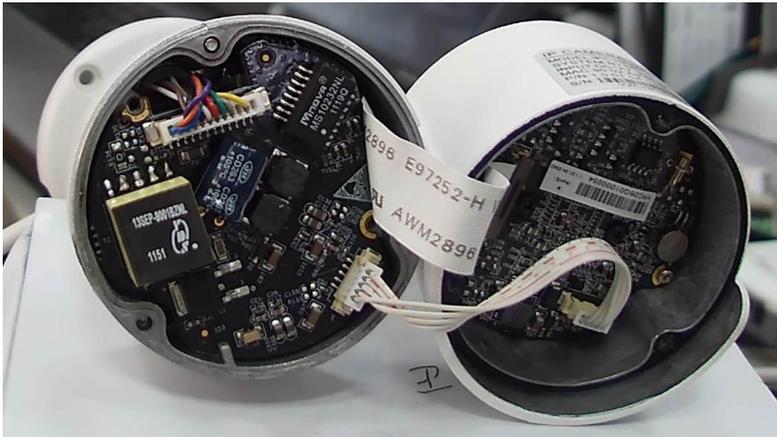


**New IP Camera:  
Pin2 to RX  
Pin3 to TX  
Pin5 to G**

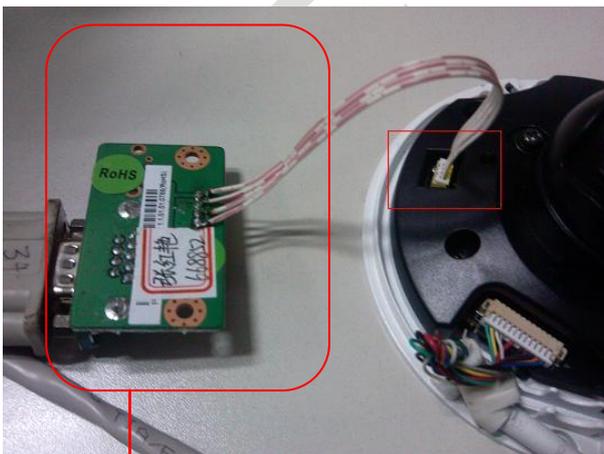
ICE V

ing

IPC-HFW2100



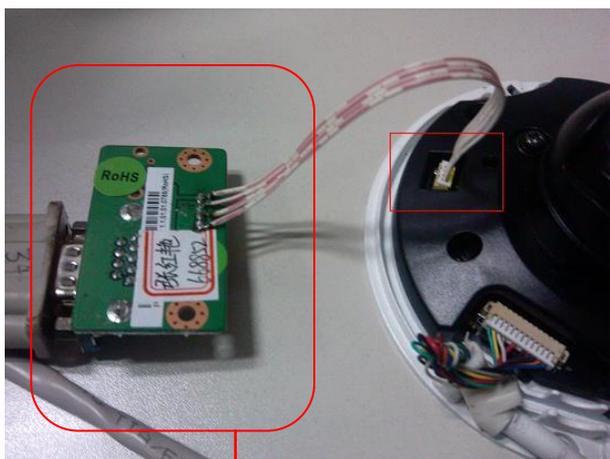
RS232 board connector port,  
Connect with RS232 board.



RS232 com board

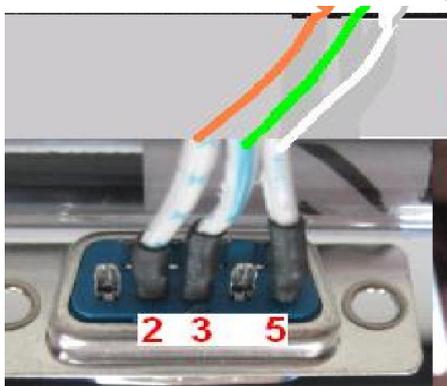
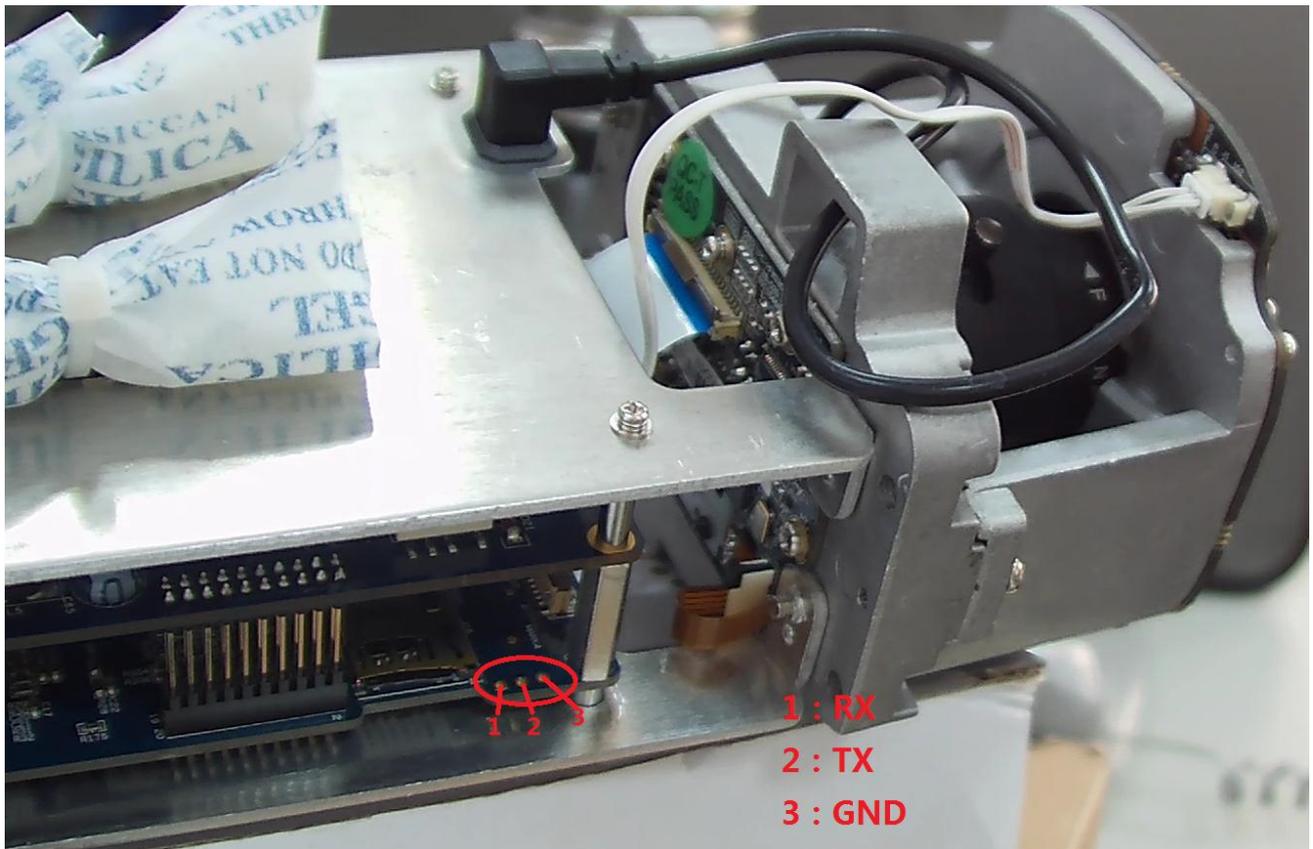


RS232 board connector port,  
Connect with RS232 board.



RS232 com board

IPC-HFW3300

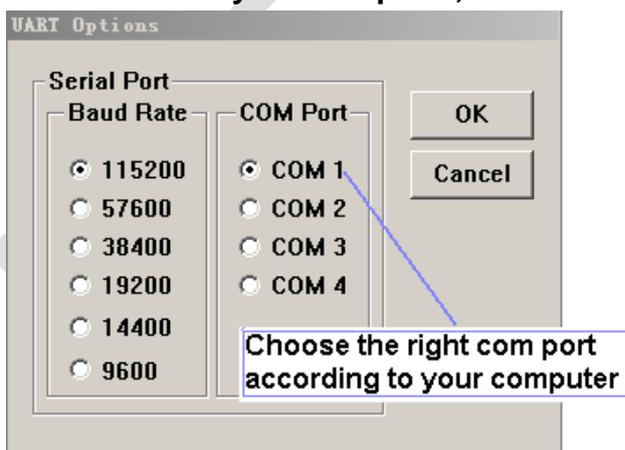


**New IP Camera:**  
Pin2 to RX  
Pin3 to TX  
Pin5 to G



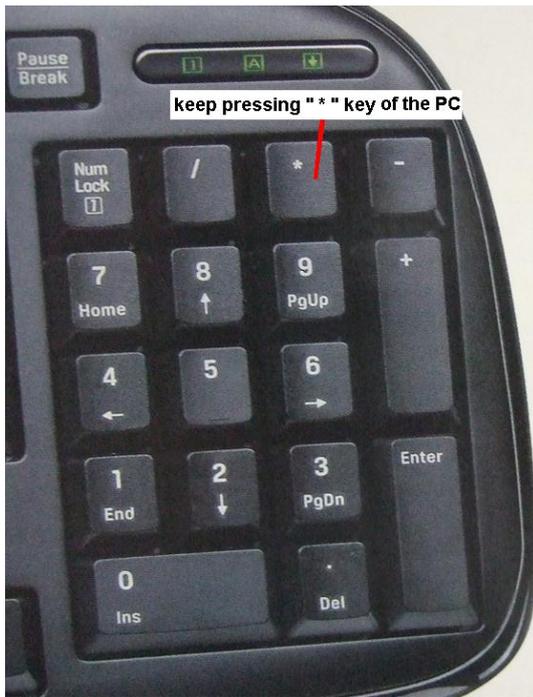
## 2、RS232 operation

1) Run *NOCM* in your computer, the com set is as follows:



2) Enter RS232 operation

A、Power on the IP Camera and Click 3 \* (upper right on number pad) when the words **U-Boot** are on screen. (please keeping press \* to ensure the input, until you see **DHBOOT#**)



```
NCOM v1.02 [COM1,115200bps]
File Options Help
U-Boot 1.3.6 (jerry) (Apr 21 2011 - 16:55:07)
DRAM: 128 MB
Flash: 16 MB
In: serial
Out: serial
Err: serial
Ethernet PHY: GENERIC @ 0x00,id:221513
total gio 2
gio[24]=0
gio[25]=1
Loading .....DHBOOT# **
Unknown command '**' - try 'help'
DHBOOT# set appauto 0
DHBOOT# set dh keyboard 0
DHBOOT# saveenv
Saving Environment to Flash...
Un-Protected 1 sectors
Erasing Flash...
. done
Erased 1 sectors
Writing to Flash... done
Protected 1 sectors
DHBOOT#
```

B. Now you can enter setup interface, and will see **DHBOOT #** in the screen

### 3、 Debug state

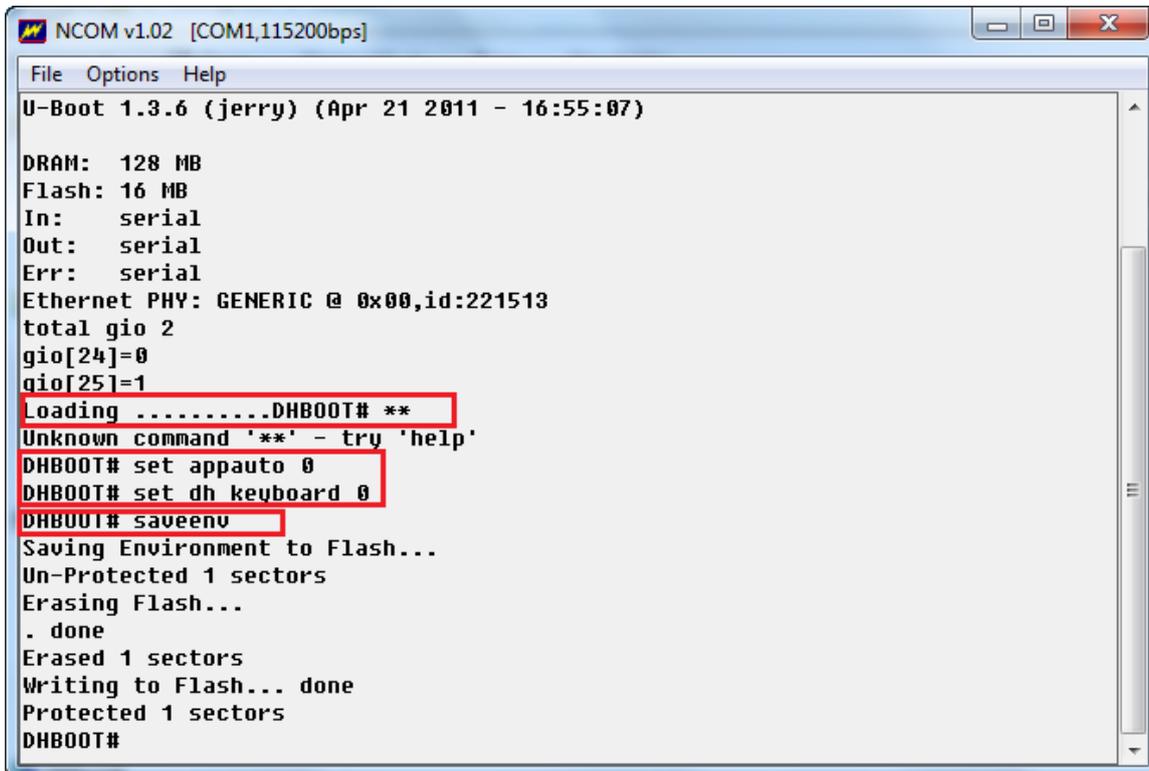
- 1) Enter **DHBOOT #** menu by input **\*\***

## 2) Set the IP Camera to Debug state

When we want to check the RS232 information, you can set the IP Camera to debug state and check the problems

- A、 Type `appauto 0`  
`dh_keyboard 0`  
`save`

then you will enter debug state and can get the RS232 information from the IP Camera



The screenshot shows a terminal window titled "NCOM v1.02 [COM1,115200bps]". The terminal output displays the U-Boot boot process, including hardware information and configuration commands. The following commands are highlighted with red boxes:

```
U-Boot 1.3.6 (jerry) (Apr 21 2011 - 16:55:07)

DRAM: 128 MB
Flash: 16 MB
In: serial
Out: serial
Err: serial
Ethernet PHY: GENERIC @ 0x00,id:221513
total gio 2
gio[24]=0
gio[25]=1
Loading .....DHBOOT# **
Unknown command '**' - try 'help'
DHBOOT# set appauto 0
DHBOOT# set dh keyboard 0
DHBOOT# saveenv
Saving Environment to Flash...
Un-Protected 1 sectors
Erasing Flash...
. done
Erased 1 sectors
Writing to Flash... done
Protected 1 sectors
DHBOOT#
```

- B、 Restart the IP Camera or type `bootd` to startup the IP Camera

```
NCOM v1.02 [COM1,115200bps]
File Options Help
U-Boot 1.3.6 (jerry) (Apr 21 2011 - 16:55:07)

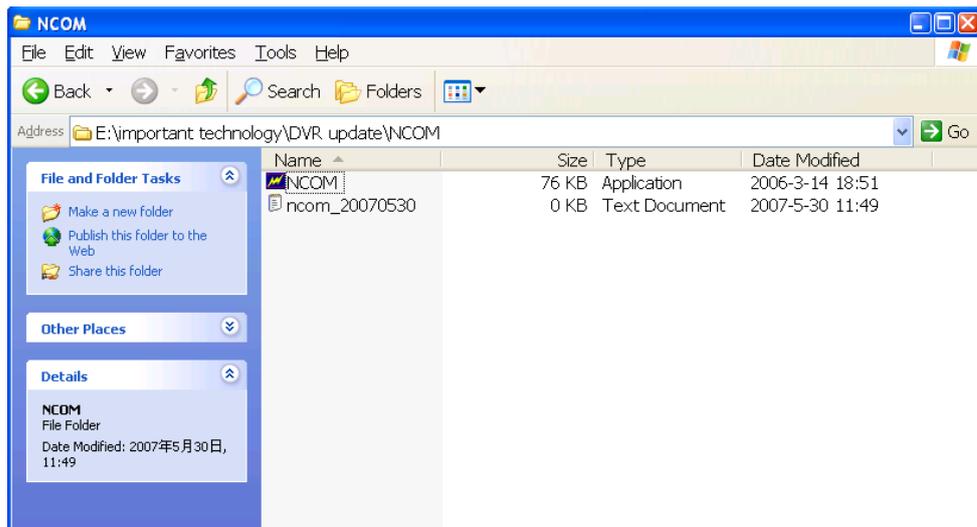
DRAM: 128 MB
Flash: 16 MB
In: serial
Out: serial
Err: serial
Ethernet PHY: GENERIC @ 0x00,id:221513
total gio 2
gio[24]=0
gio[25]=1
Loading .....DHBOOT# **
Unknown command '**' - try 'help'
DHBOOT# set appauto 0
DHBOOT# set dh_keyboard 0
DHBOOT# saveenv
Saving Environment to Flash...
Un-Protected 1 sectors
Erasing Flash...
. done
Erased 1 sectors
Writing to Flash... done
Protected 1 sectors
DHBOOT# bootd
```

C、With debug state, the IP Camera will not auto start, and will stop at #  
You need to type ii to startup the IP Camera

```
NCOM v1.02 [COM1,115200bps]
File Options Help
[m][0;32;32m[bd6735] moving toward faraway lt...
[AEW] old brightness=50,old contrast=50, old saturation=50, old hue=50
[m][0;32;32m[AEW] new brightness=50,new contrast=50, new saturation=50, new
hue=50
[m][0;32;32m[AEW] Enabled RGB2YUV params setting
[m][0;32;32m[AEW] rgb2yuv_params.coef_ry = {0x0, 0x4d}
[m][0;32;32m[AEW] rgb2yuv_params.coef_gy = {0x0, 0x96}
[m][0;32;32m[AEW] rgb2yuv_params.coef_by = {0x0, 0x1d}
[m][0;32;32m[AEW] rgb2yuv_params.coef_rcb = {0xf, 0xd5}
[m][0;32;32m[AEW] rgb2yuv_params.coef_gcb = {0xf, 0xab}
[m][0;32;32m[AEW] rgb2yuv_params.coef_bcb = {0x0, 0x80}
[m][0;32;32m[AEW] rgb2yuv_params.coef_rcr = {0x0, 0x80}
[m][0;32;32m[AEW] rgb2yuv_params.coef_gcr = {0xf, 0x95}
[m][0;32;32m[AEW] rgb2yuv_params.coef_bcr = {0xf, 0xeb}
[m][0;32;32m[AEW] rgb2yuv_params.out_ofst_y = 0
[m][0;32;32m[AEW] rgb2yuv_params.out_ofst_cb = 80
[m][0;32;32m[AEW] rgb2yuv_params.out_ofst_cr = 80
[m][0;32;32m[AEW] Success in setting RGB2YUV params
[m][0;32;32m[AEW] Success in setting RGB2YUV params
[bd6735] in bd6735_isr,value is 0!

#
#
# ii
```

D、All the information can be found in the ncom log file



### 3) Working state

**We need to set the IP Camera to this state before it is sent to customer**

For most users they do not need to enter debug mode and need the IP Camera auto start to work, so we must exit debug mode before the IP Camera is sent to the users

The operation is the same

A、Restart the IP Camera, Click 3 "\*" to enter setup interface, and will see **DHBOOT #** in the screen

C、Type `set appauto 1`

`set dh_keyboard 1`

`saveenv`

D、Restart the IP Camera or type `booted` to startup the IP Camera

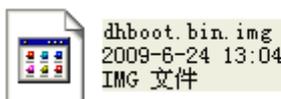
```
NCOM v1.02 [COM1,115200bps]
File Options Help
0x0000005A DDR->SDBCR2 =0x00000000
BootMode = NOR
Starting NOR Copy...
DONE

U-Boot 1.3.6 (jerry) (Apr 21 2011 - 16:55:07)

DRAM: 128 MB
Flash: 16 MB
In: serial
Out: serial
Err: serial
Ethernet PHY: GENERIC @ 0x00,id:221513
total gpio 2
gio[24]=0
gio[25]=1
Loading .....DHBOOT#
DHBOOT#
DHBOOT# set appauto 1
DHBOOT# s
Unknown command 's' - try 'help'
DHBOOT# set dh_keyboard 1
DHBOOT#
DHBOOT# saveenv
```

## 4、TFTP Upgrade

### 1) Upgrade Software



hiboot.bin.img

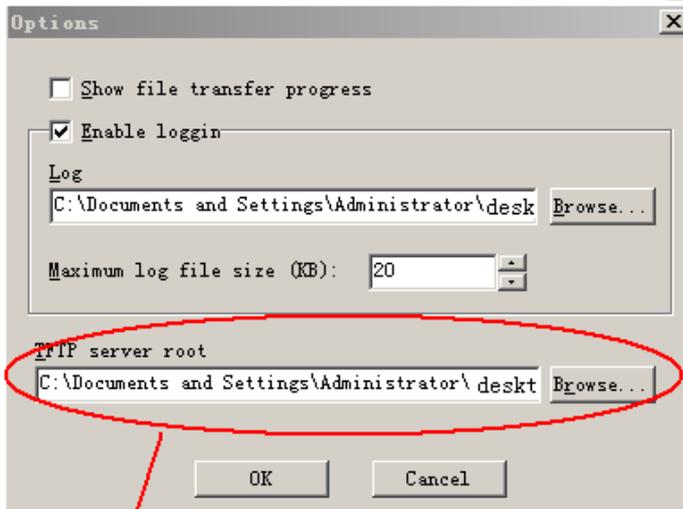
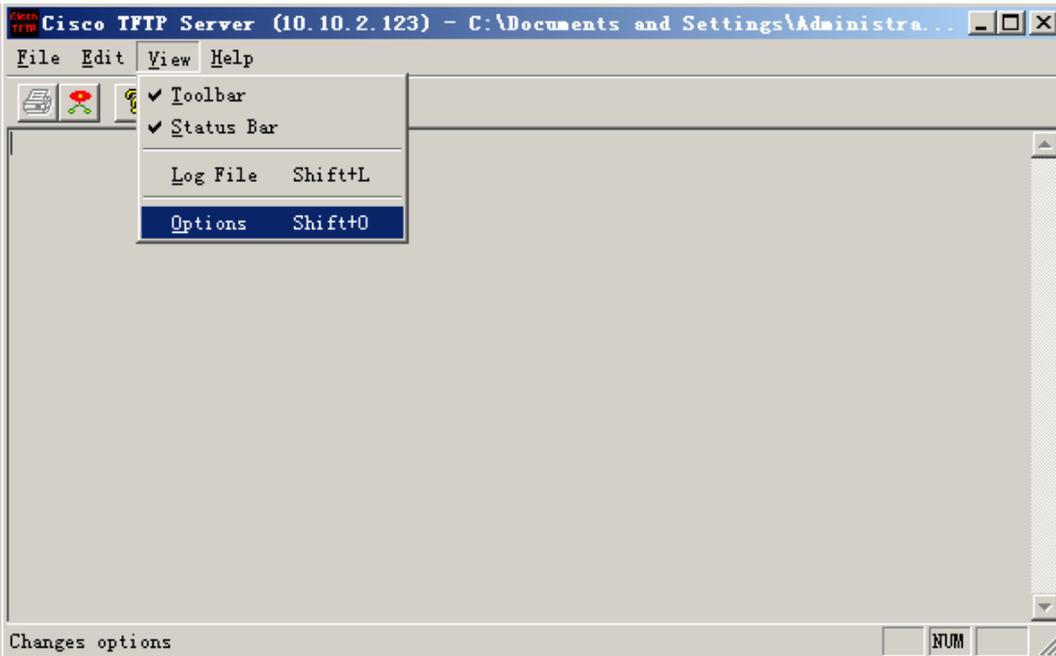
update.img

This two files are for TFTP upgrade , please put in TFTP server root path

### 2) Run TFTP server

A、rver: [TFTPServer\\_En.exe](#)

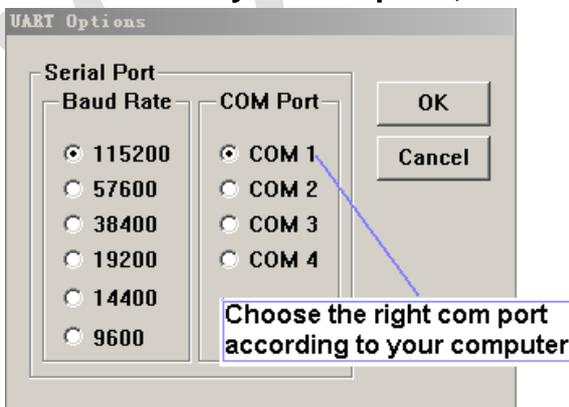
B、Set the upgrade route in the TFTP server, please see the picture below



**C:\Documents and Settings\Administrator\desktop\software**

where the upgrade software located

3) Run **NOCM** in your computer, the com set is as before:



Choose the right com port according to your computer

4) **TFTP upgrade**

A、Restart the IP Camera, press “ \*\*\* ” to enter **DHBOOT#** menu

- B、 Now you can enter TFTP menu, and will see `s3c2510 #` in the screen
- C、 Type `"print"` to show some information of the IPC
- D、 Type `"mac"` to see or the mac address
  - Type `"sip ip address of the PC"` to set the TFTP server ip
  - Type `"lip ip address of the IPC"` to set the IPC ip
  - Type `"saveenv"` to save

```
NCOM v1.02 [COM1,115200bps]
File Options Help
stdin=serial
stdout=serial
stderr=serial
ver=U-Boot 1.3.6 (jerry) (Apr 21 2011 - 16:55:07)
appauto=1
dh_keyboard=1

Environment size: 834/16380 bytes
DHBOOT# sip 192.168.1.12
Set server ip address success!
Now server ip addr: 192.168.1.12
DHBOOT#
DHBOOT# lip 192.168.1.14
Set local address success!
Now local ip addr: 192.168.1.14
DHBOOT# saveenv
Saving Environment to Flash...
Un-Protected 1 sectors
Erasing Flash...
. done
Erased 1 sectors
Writing to Flash... done
Protected 1 sectors
DHBOOT#
```

- E、 Type `"run up"` to begin upgrade



- 3、 To check if the mac address of the IP Camera is right
- 4、 To check if the upgrade software is in the right folder and with right name
- 5、 To check if the NCOM and TFTP software is running
- 6、 Upgrade by TFTP upgrade again
- 7、 After several times attempt, if there is still have problems, please contact with our technical engineers.

## 5、 Clear the config of IP Camera

Some time customer may need to clear the config of the IPC through RS232

- A、 Set IPC to debug mode
- B、 The IPC will stop at # (You need to type **ii** to startup the IP Camera)
- C、 type **cd /mnt/ntd/Config** to enter the **Config** directory
  - type **ls** to list the files
  - type **rm \*** to clear the config

```

NCOM v1.02 [COM1,115200bps]
File Options Help
Uncompressing
Linux.....
..... done, booting the
kernel.

■[0;32;32m[libdvr] libdvr.so Build on Mar 31 2012 at 08:59:25.
■[m■[0;32;32m[libdvr] SUN NUM: 2993.
■[m[libdvr] no new hwid scheme!
claststate V1.0 for dm365times=0 @@@; usdate = 0xc158c172
mode: debug
Tue Jun 12 12:05:50 2012 0.000000 seconds
++++Start pppd,Version 1.42 2009-08-05+++
Archive: /usr/bin/sonia.zip
  inflating: sonia
unzip sonia done.
# cd /mnt/ntd/Config
# ls
■[0;0mAccount1■[0m      ■[0;0mExitCodeTime■[0m  ■[0;0mdial-ip■[0m      ■
[0;0mnetworkip6■[0m    ■[0;0mpreLanguage■[0m
■[0;0mConfig1■[0m      ■[0;0mdevice_uuid■[0m    ■[0;0mnetwork■[0m      ■
[1;34mppp■[0m
# rm *
rm: ppp: is a directory
#
  
```

- D、 type **cd/** up to first layer.
  - Then type **cd /mnt/backup/Config** to enter backup Config.
  - type **ls** to list the files
  - type **rm \*** to clear the config
  - type **ii** to start the IPC

```
NCOM v1.02 [COM1,115200bps]
File Options Help
■[m[libdvr] no new hwid scheme!
claststate V1.0 for dm365times=0 @@@; usdate = 0xc158c172
mode: debug
Tue Jun 12 12:05:50 2012 0.000000 seconds
++++Start pppd,Version 1.42 2009-08-05+++
Archive: /usr/bin/sonia.zip
  inflating: sonia
unzip sonia done.
# cd mnt/mtd/Config
# ls
■[0;0mAccount1■[0m      ■[0;0mExitCodeTime■[0m  ■[0;0mdial-ip■[0m      ■
[0;0mnetworkip6■[0m    ■[0;0mpreLanguage■[0m    ■
■[0;0mConfig1■[0m      ■[0;0mdevice_uid■[0m      ■[0;0mnetwork■[0m      ■
[1;34mppp■[0m
# rm *
rm: ppp: is a directory
# cd /
# cd mnt/backup/Config
# ls
■[0;0mAccount2■[0m      ■[0;0mConfig2■[0m      ■[0;0mnetwork■[0m      ■
[0;0mnetworkip6■[0m    ■[1;34mppp■[0m
# rm *
rm: ppp: is a directory
# ii
```

## More Details

If you still have any problems about these functions, please contact with our engineers.