

## Full Reset of DSP card

- 1) Power down the system and disconnect from power from wall outlet, Open the powerpack box and take pictures and note where connections are going to the 2370 controller. Remove the two screws circled in blue below



- 2) Slowly remove the cover, the mother board and DSP card are mounted to the cover. Once removed turn over on its back with vented cover side up.
- 3) Remove the screws to disconnect the mother board and DSP card from the cover. Once screws are removed slide the boards back so the connectors clear the cover.
- 4) Next separate the DSP card from the mother board by removing screws on bottom board (DSP card). Be careful to only handle the board on the outer edges.
- 5) Besides the screws there is pin connector that connects the DSP card and mother board, slowly rock the DSP card with a pulling action to separate the DSP card from the Mother board.

- 6) Below is the bottom surface of the DSP card. Note the 'boot mode' pins, 'Jumper selection', 'USB4', 'Serial to USB connector' and 'Reset Switch'

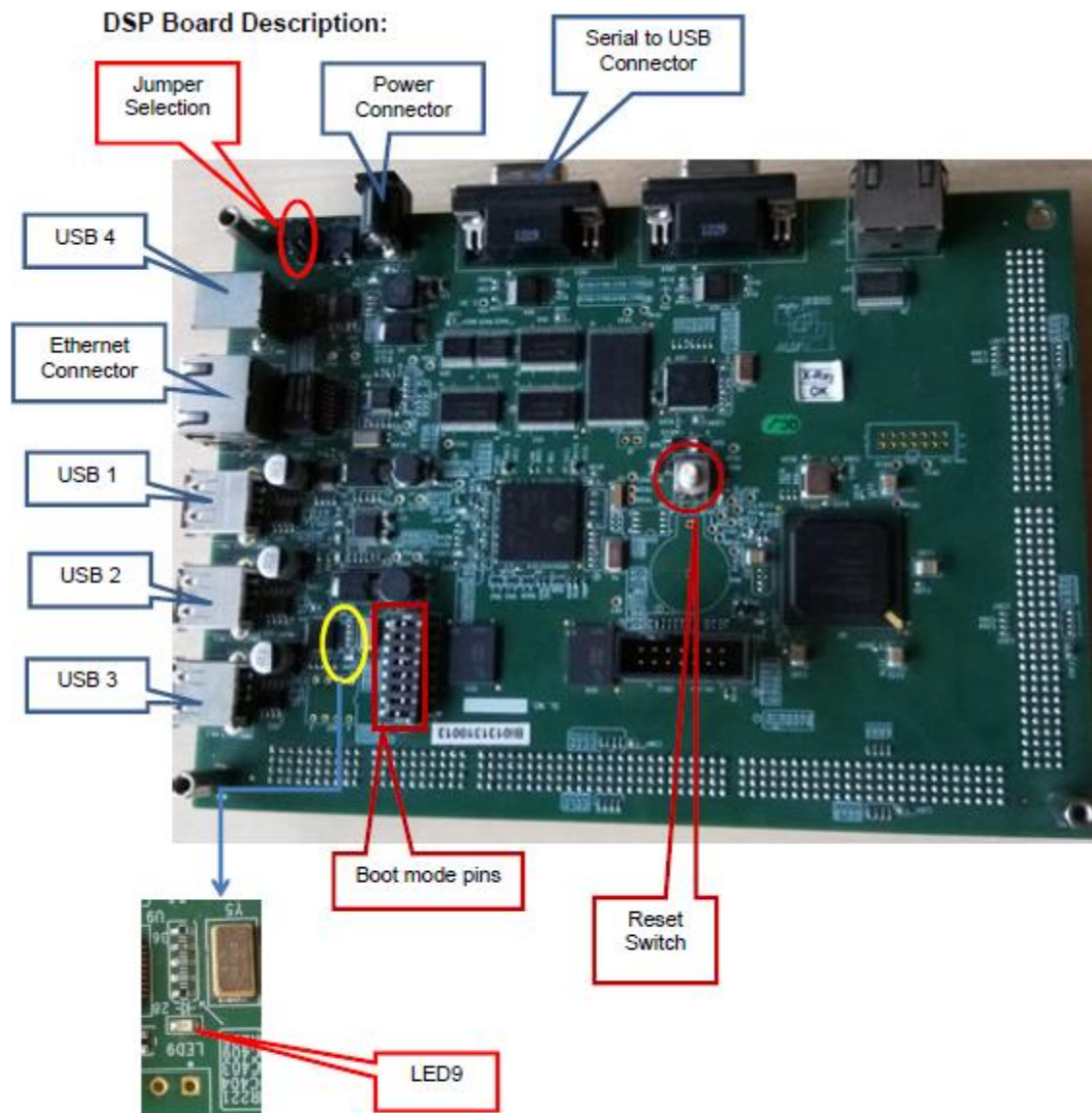
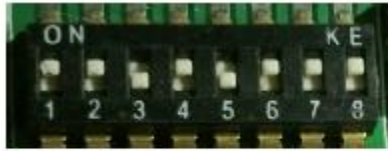


Figure 1. DSP Board Description

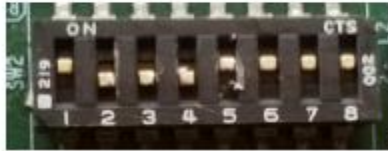
7) Boot mode selections to reference.

1. UART mode



00101000

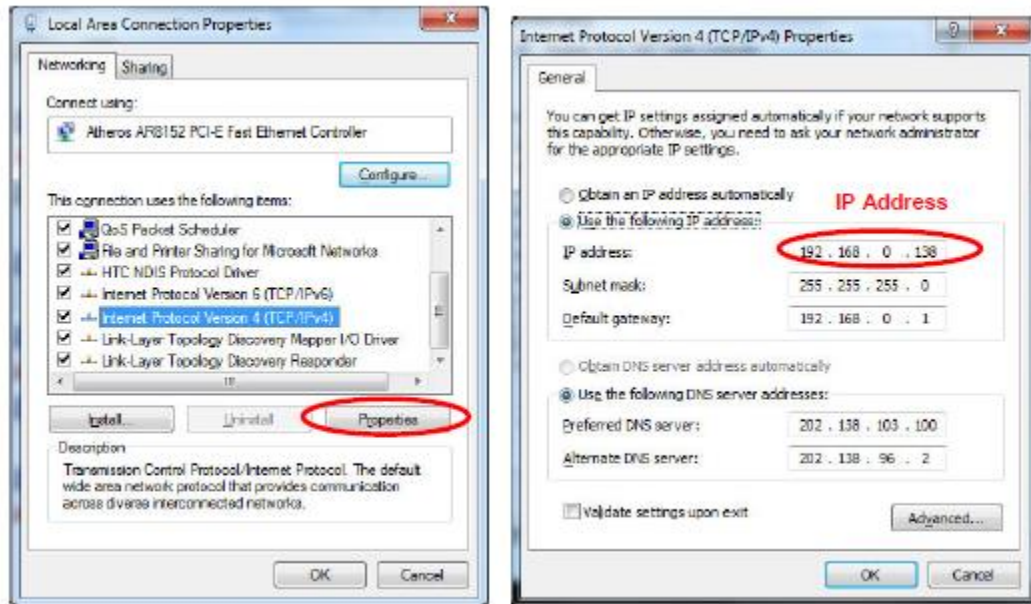
2. NAND mode



01110000

**Note:** Use Non metallic objects to change the boot mode pins.

8) Go to the 'Advanced internet settings' and not the ipv4 address settings similar to below. Make sure to select the correct ethernet port.



9) Connect the cable to the 'Serial to USB connector' on the DSP card. If your PC has a built in serial port then the com port will be com1. If you are using a Serial to USB adapter then go to the 'Device manager' and note down what the com port setting is.

10) Install the 'SolarWinds-TFTP-Server.exe

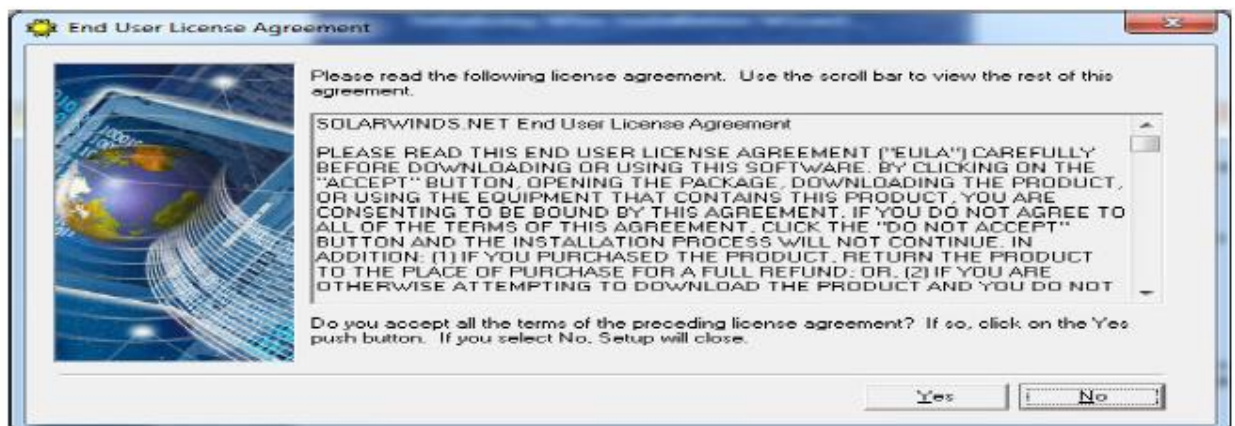
11) Double click on SolarWinds-TFTP-Server.exe

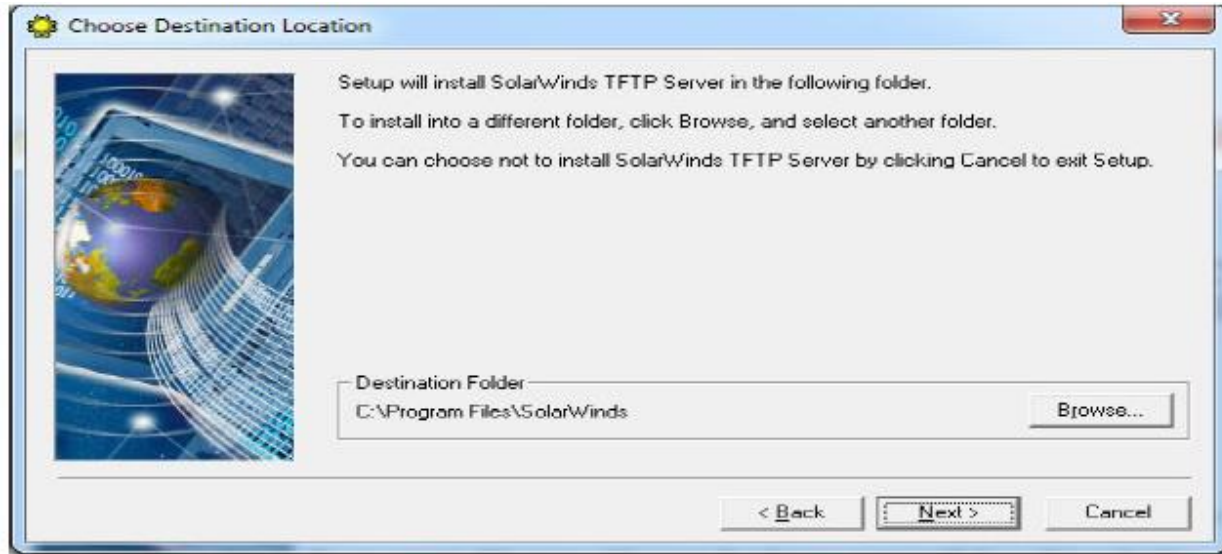


12) Click next in the Welcome screen



13) Click Yes in End User License agreement screen and click Next in the Choose Destination location screen.

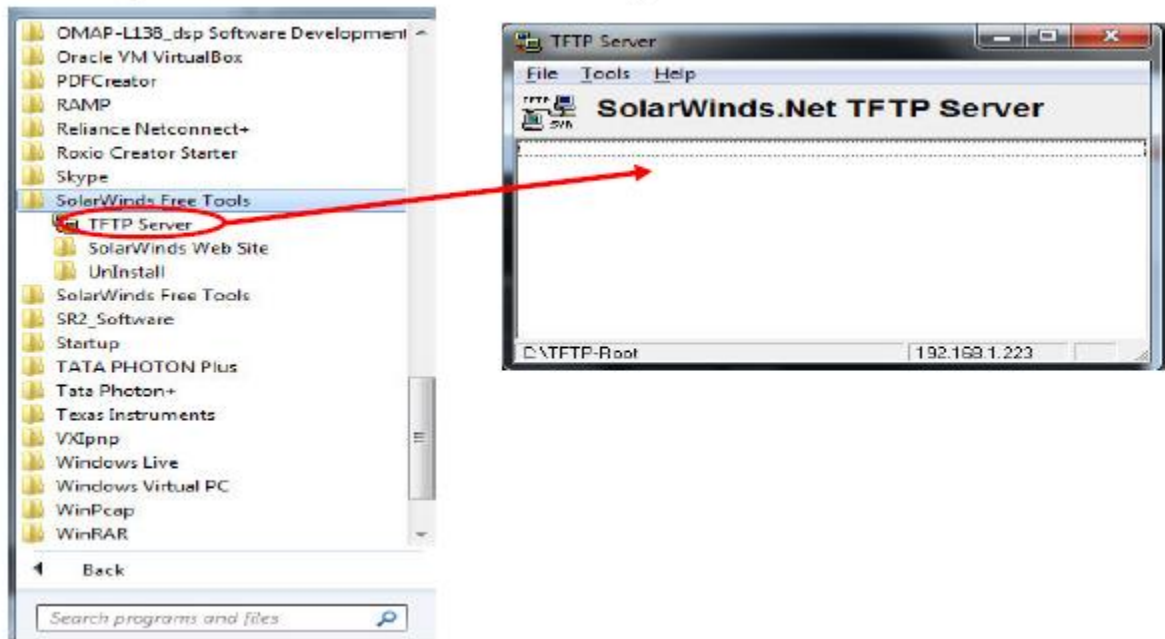




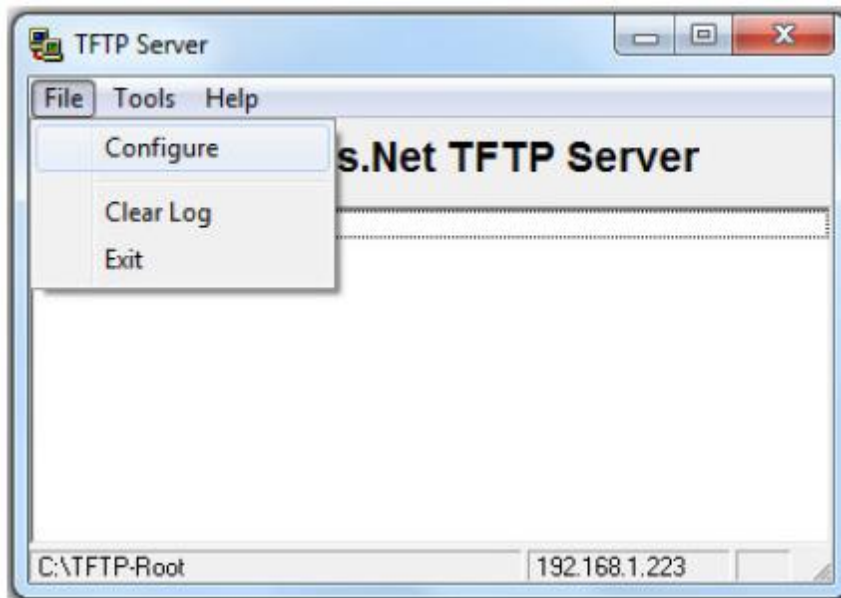
14) After installation is completed, TFTP-Root folder is created on the C:/drive. Copy the following files into that folder.

**u-boot\_UART2, ulmage\_v0\_5 and u-boot\_Multiple\_Reboots\_nand\_456\_91.bin** in this folder

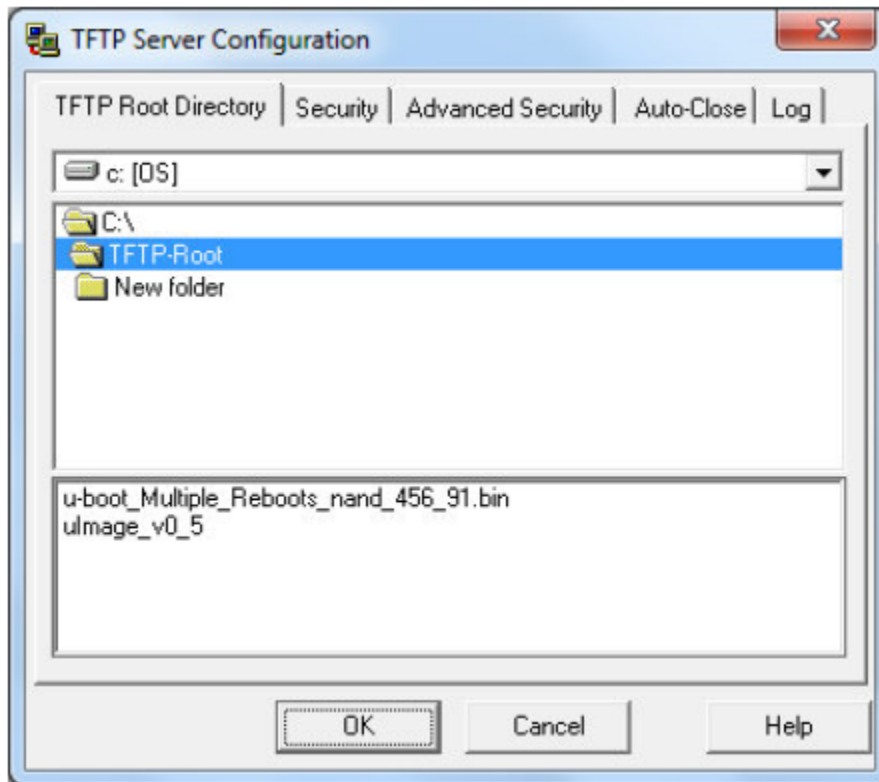
15) Open the TFTP server from All Programs in Start button



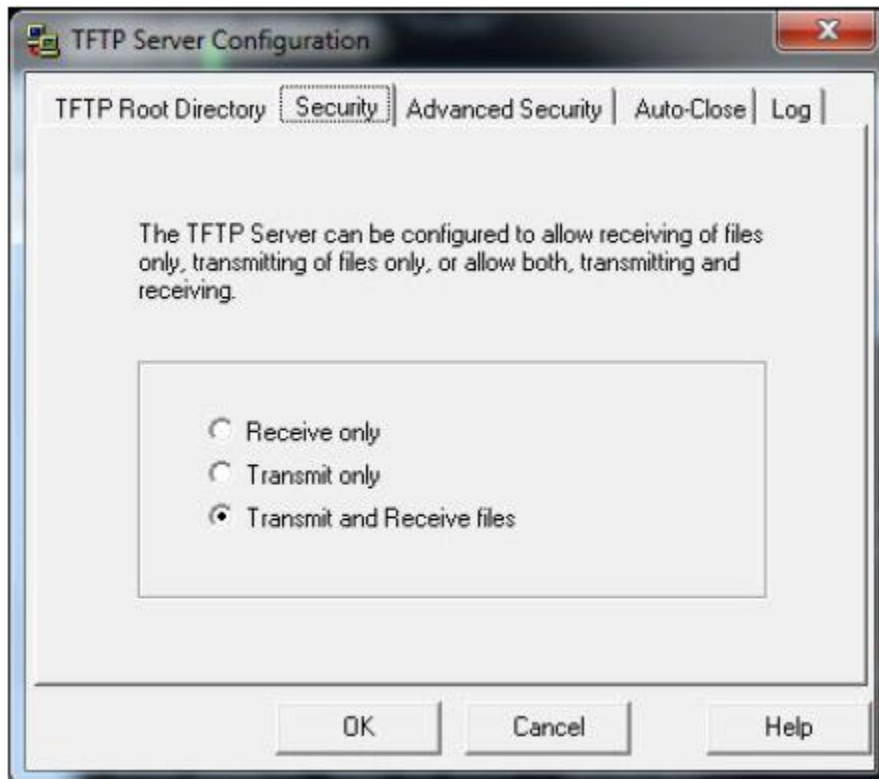
16) Click on File and then Configuration.



17) Confirm the copied files are in the folder.

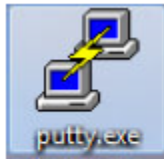


18) Click on the Security tab and select Transmit and Receive files radio button.

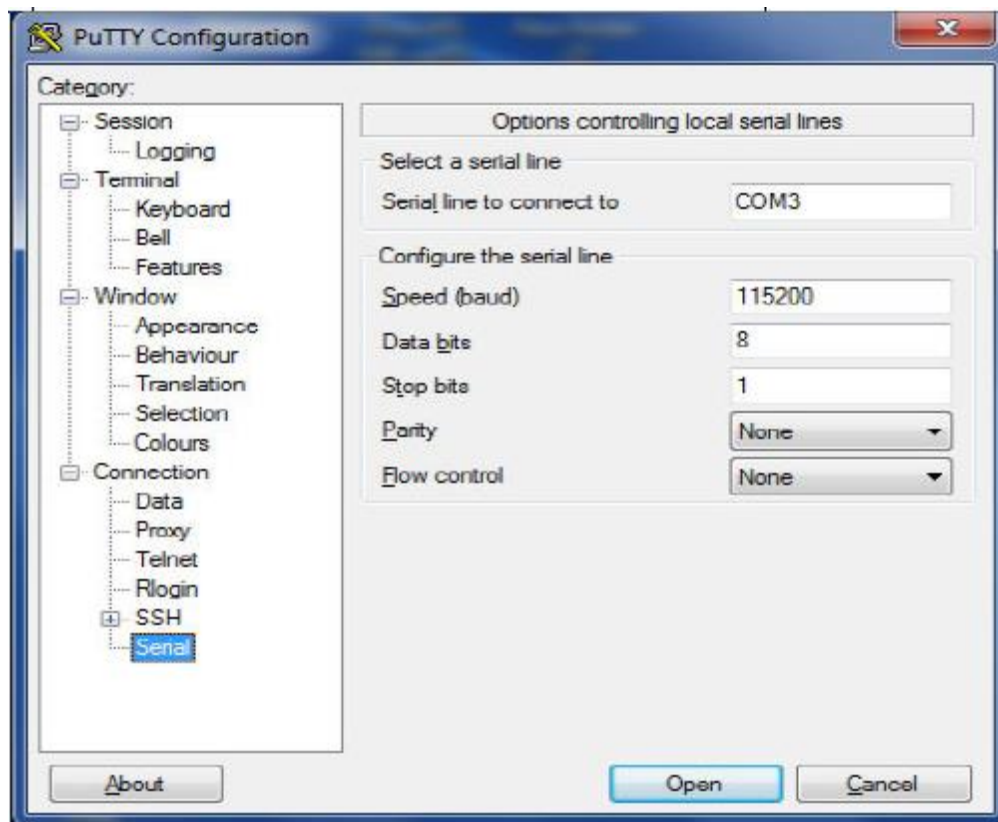


## Open and configure Putty software:

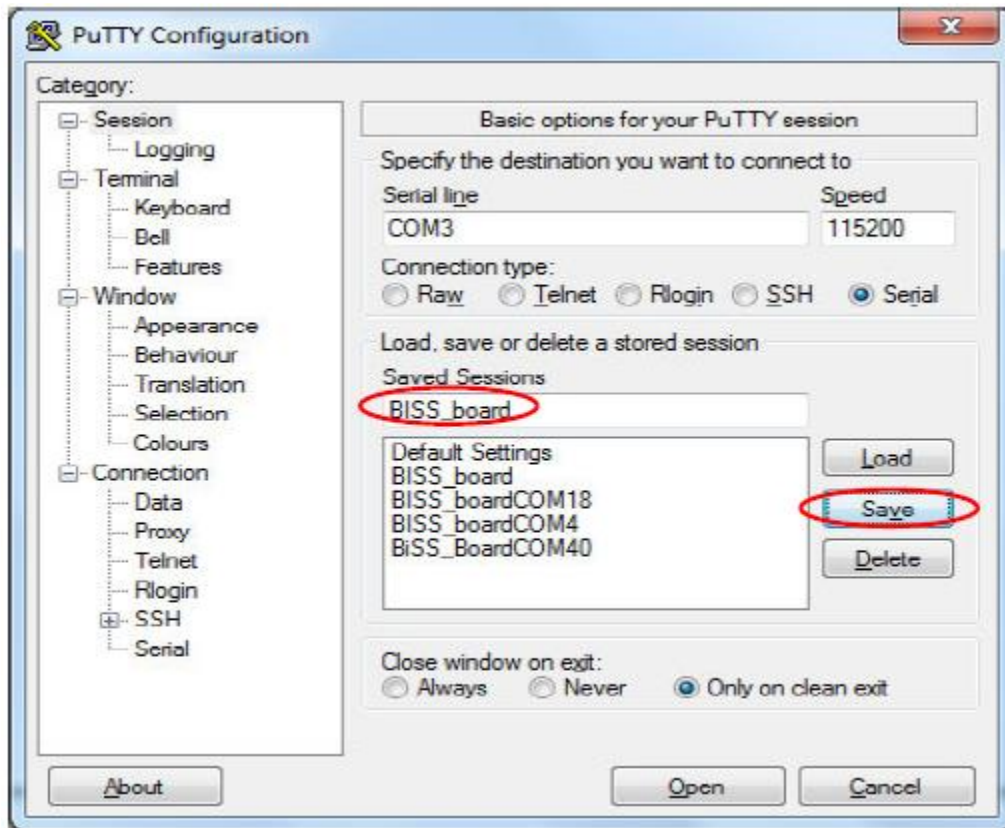
- 19) If your putty program is already configured, skip to step 23. Copy putty.exe to the desktop on the PC, located in the MTL32\_2020 folder on the C:/drive.
- 20) Open the putty program



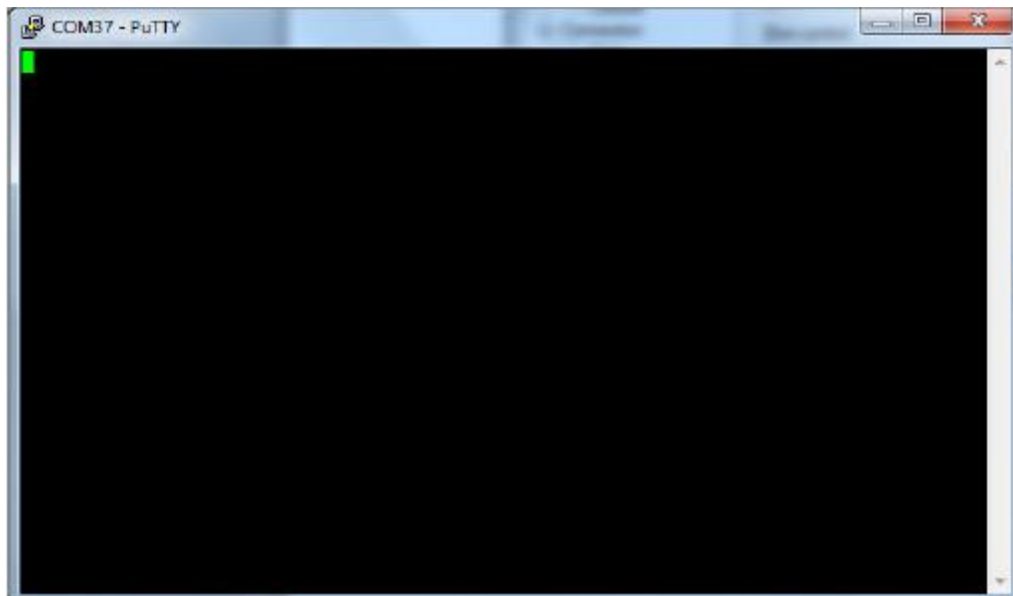
- Select Serial in category and set the COM port number in *Serial line to connect to*, set *Baud rate(115200)* and set *Flow Control to None*



- 21) Select Session option in Category and click serial and save the settings by providing name in Saved session text box and click save. Click open.



- 22) Putty Console window will pop up



- 23) On the DSP card note the current configuration of the jumper on the pin connector, shown in figure A. To power via USB cable switch the jumper as shown below in figure B and then plug in the USB cable to PC to power on the DSP card. In putty you see boot up sequence appear and then if you press return at the end you will either see 'Biss>' or 'root@Biss'. If it says 'root@Biss' you don't need to go any further. Connect the ethernet cable.



Figure A

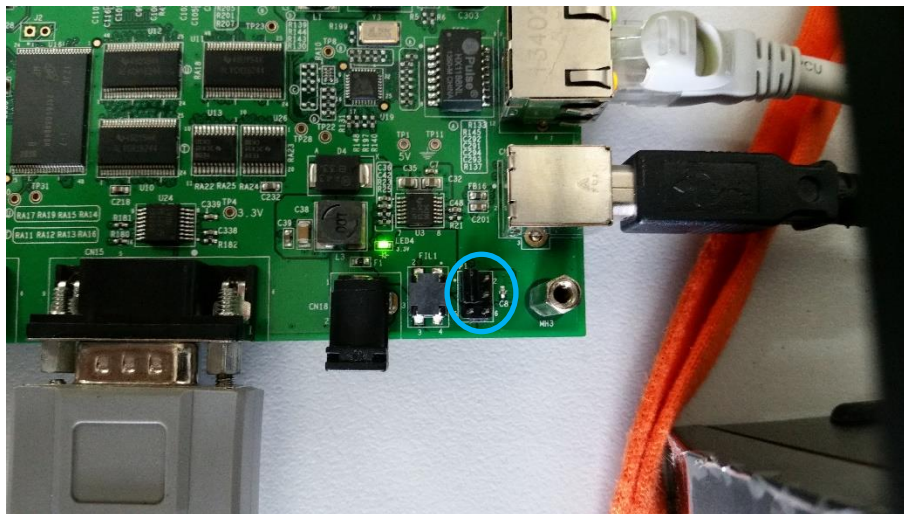
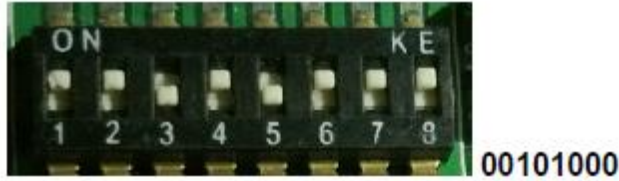


Figure B

## Booting in UART Mode:

Recall

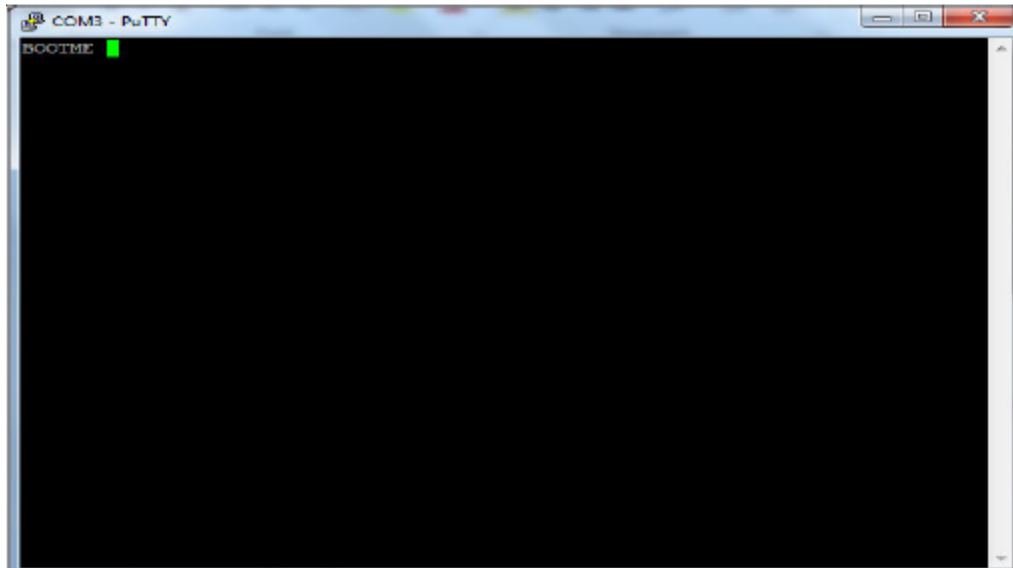
1. UART mode



24. Open Putty Software

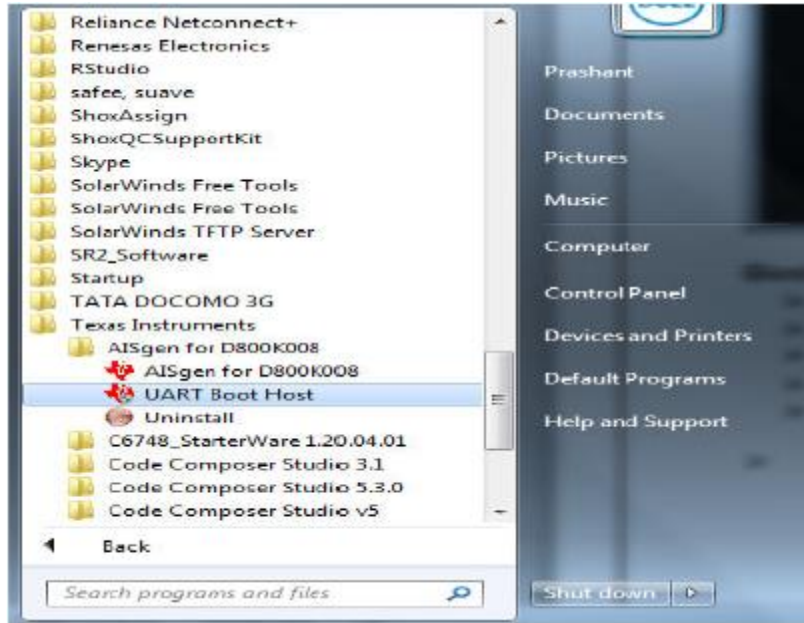
25. Change Boot mode pins to UART mode.

26. Press Reset Switch: You will observe **BOOTME** text in putty software.

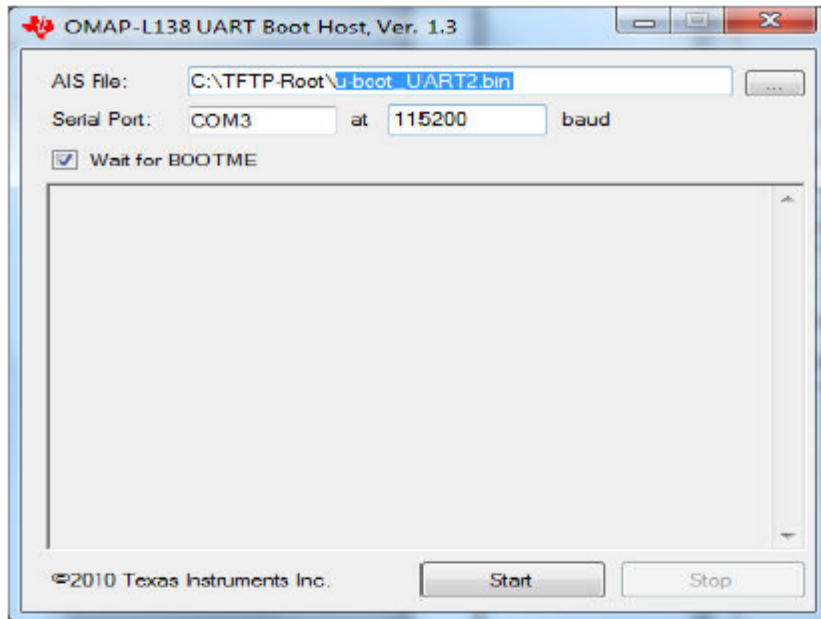


27. Close Putty Software.

28. Open "UART Boot Host" software

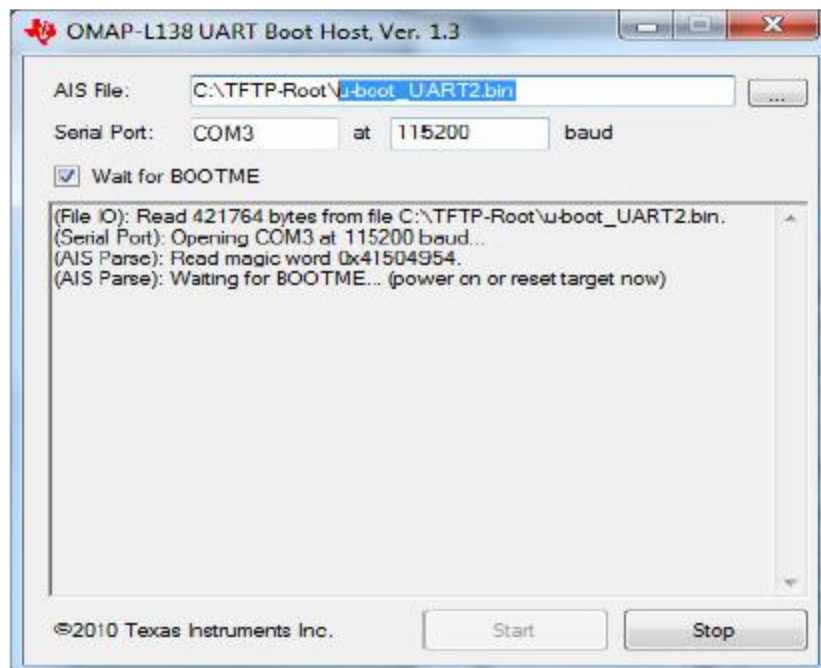


29. Browse for u-boot\_UART2.bin file



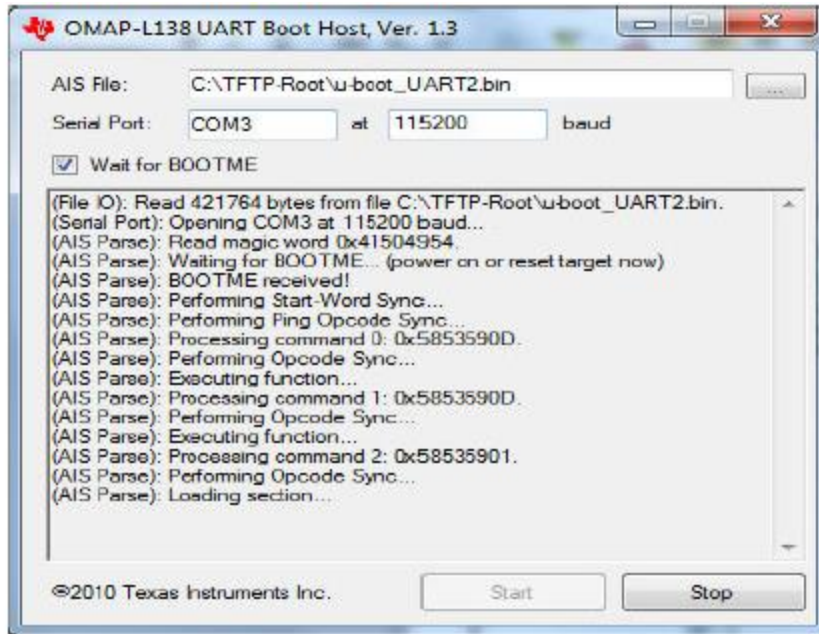
30. Click Start

31. After clicking you will get below prints



32. Press reset switch on DSP Board.

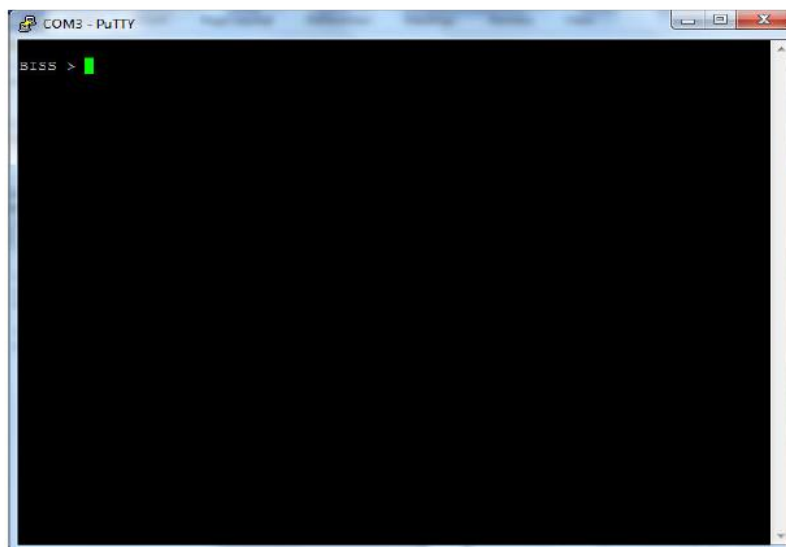
33. Below prints will be observed



34. Once this is done you will get the “Boot completed successfully” message as per below figure

35. Close UART Boot Host software

36. Open putty software and press Enter you will prompted with “BISS” text message



37. Don't power off the board, please change Boot mode pins to NAND mode

Loading Fiels in NAND mode:

Recall

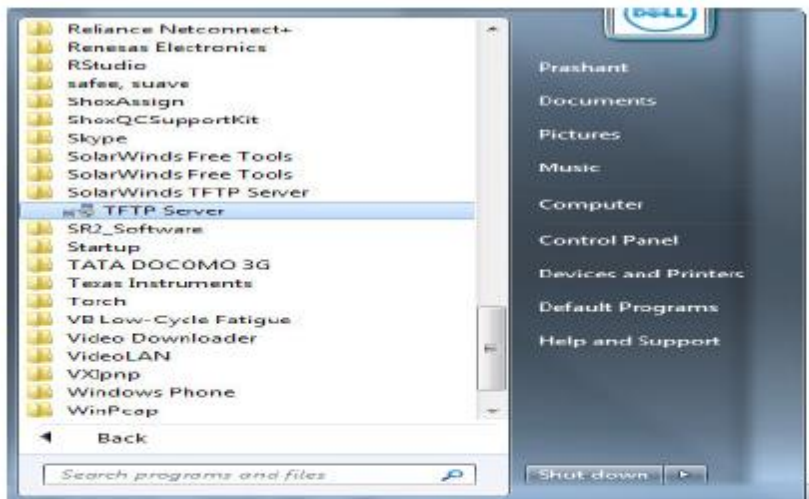
## 2. NAND mode



01110000

Loading Files in NAND mode:

### 38. Open TFTP Server Software and configure as mentioned in "Opening and Configuring TFTP Server" Section



### 39. Configure the server ip (PC) and board ip address ()

```
BISS > set ipaddr 192.168.0.111
```

```
BISS > set serverip 192.168.0.138
```

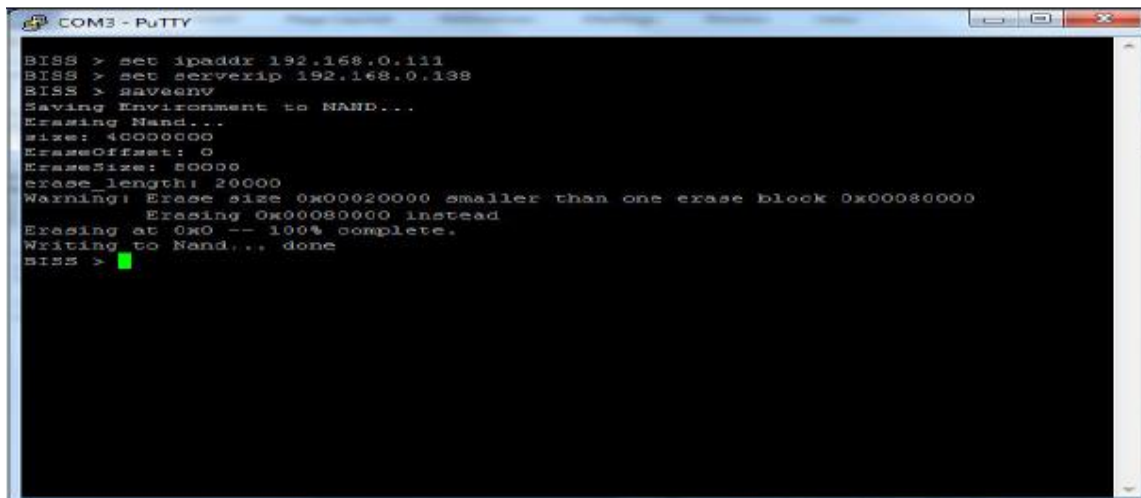
```
BISS > saveenv
```

And press Enter as per below figure

**Note:** If you have a different server ip (PC) then above use the correct one for server ip that you noted in step 8. Ipaddr or board address needs to have same 3 sets of numbers as the serverip address. The 4 set of numbers must be different.

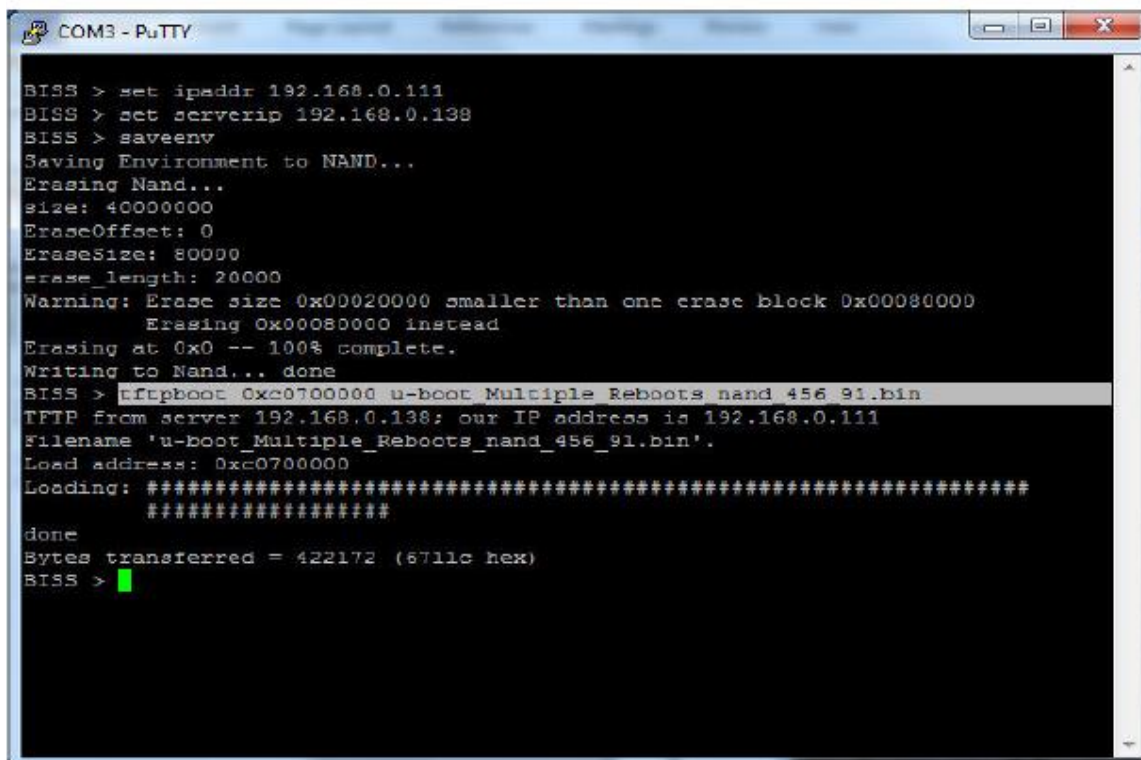


40. You will be prompted with below prints



```
COM3 - PuTTY
BISS > set ipaddr 192.168.0.111
BISS > set serverip 192.168.0.138
BISS > saveenv
Saving Environment to NAND...
Erasing Nand...
size: 40000000
EraseOffset: 0
EraseSize: 80000
erase_length: 20000
Warning: Erase size 0x00020000 smaller than one erase block 0x00080000
Erasing 0x00080000 instead
Erasing at 0x0 -- 100% complete.
Writing to Nand... done
BISS >
```

41. Type `tftpboot 0xc0700000 u-boot_Multiple_Reboots_nand_456_91.bin` and hit enter button then you will be prompted with prints mentioned in the below figure



```
COM3 - PuTTY
BISS > set ipaddr 192.168.0.111
BISS > set serverip 192.168.0.138
BISS > saveenv
Saving Environment to NAND...
Erasing Nand...
size: 40000000
EraseOffset: 0
EraseSize: 80000
erase_length: 20000
Warning: Erase size 0x00020000 smaller than one erase block 0x00080000
Erasing 0x00080000 instead
Erasing at 0x0 -- 100% complete.
Writing to Nand... done
BISS > tftpboot 0xc0700000 u-boot_Multiple_Reboots_nand_456_91.bin
TFTP from server 192.168.0.138; our IP address is 192.168.0.111
Filename 'u-boot_Multiple_Reboots_nand_456_91.bin'.
Load address: 0xc0700000
Loading: #####
done
Bytes transferred = 422172 (6711c hex)
BISS >
```

42. Type `nand erase 0x80000 0x70000` and press enter key

```
COM3 - PuTTY
Saving Environment to NAND...
Erasing Nand...
size: 40000000
EraseOffset: 0
EraseSize: 80000
erase_length: 20000
Warning: Erase size 0x00020000 smaller than one erase block 0x00080000
Erasing 0x00080000 instead
Erasing at 0x0 -- 100% complete.
Writing to Nand... done
BISS > tftpboot 0xc0700000 u-boot_Multiple_Reboots_nand_456_91.bin
TFTP from server 192.168.0.138; our IP address is 192.168.0.111
Filename 'u-boot_Multiple_Reboots_nand_456_91.bin'.
Load address: 0xc0700000
Loading: #####
done
Bytes transferred = 422172 (6711c hex)
BISS > nand erase 0x80000 0x70000

NAND erase: device 0 offset 0x80000, size 0x70000
size: 40000000
EraseOffset: 80000
EraseSize: 80000
erase_length: 70000
Warning: Erase size 0x00070000 smaller than one erase block 0x00080000
Erasing 0x00080000 instead
Erasing at 0x80000 -- 100% complete.
OK
BISS >
```

43. Type **nand write 0xc0700000 0x80000 0x70000** and press enter key

```
COM3 - PuTTY
Erasing at 0x0 -- 100% complete.
Writing to Nand... done
BISS > tftpboot 0xc0700000 u-boot_Multiple_Reboots_nand_456_91.bin
TFTP from server 192.168.0.138; our IP address is 192.168.0.111
Filename 'u-boot_Multiple_Reboots_nand_456_91.bin'.
Load address: 0xc0700000
Loading: #####
done
Bytes transferred = 422172 (6711c hex)
BISS > nand erase 0x80000 0x70000

NAND erase: device 0 offset 0x80000, size 0x70000
size: 40000000
EraseOffset: 80000
EraseSize: 80000
erase_length: 70000
Warning: Erase size 0x00070000 smaller than one erase block 0x00080000
Erasing 0x00080000 instead
Erasing at 0x80000 -- 100% complete.
OK
BISS > nand write 0xc0700000 0x80000 0x70000
do_nand: Read/Write

NAND write: device 0 offset 0x80000, size 0x70000
Writing the Data Addr:c0700000 Off:80000 size: 70000
nand_write_skip_bad: Offset:80000 Length: 70000
WriteSize Alignment: 1000
458752 bytes written: OK
BISS >
```

44. Type **tftpboot 0xc0700000 ulmage\_v0\_5** and press enter key

45. Type **bootm 0xc0700000**





```
COM38 - PuTTY
nateconsole: network logging started
ohci_hcd: USB 1.1 'Open' Host Controller (OHCI) Driver
ohci ohci.0: DABxx OHCI
ohci ohci.0: new USB bus registered, assigned bus number 2
ohci ohci.0: irq 59, io mem 0x01e2b000
usb usb2: configuration #1 chosen from 1 choice
hub 2-0:1.0: USB hub found
hub 2-0:1.0: 1 port detected
initializing USB Mass Storage driver...
usbcore: registered new interface driver usb-storage
USB Mass Storage support registered.
cpuidle: using governor ladder
cpuidle: using governor menu
TCP cubic registered
NET: Registered protocol family 17
Clocks: disable unused emac
Clocks: disable unused lcdc
Clocks: disable unused ep1
davinci_emac_probe: using random MAC addr: ea:86:8a:69:a8:00
emac-mii: probed
Freeing init memory: 7928K

login[349]: root login on 'ttyS2'
[root@biss:~]
```

If it doesn't show 'root@biss', you can repeat from steps 24 and see if you are able to reset if it doesn't work after a few tries then DSP card needs to be replaced.

If it does show 'root@biss' then reset was successful. Close out in any of the open software, disconnect all cables from the DSP card. Change back the jumper back to how it's shown in figure A in step 23. Reassemble with mother board and controller cover. Insert back into the powerpack and reconnect cables. Power on controller normally.

You can open up PuTTY and double check 'root@biss' still comes up. You can also double check the IP address for the DSP card by typing 'ifconfig' and press enter. As long as the first 3 sets of numbers match the IP address on PC. MTL32 should connect normally. If it doesn't check what the IP address is set to in the software and make sure it matches what the ifconfig setting is set to.