

How to open a Console serial port on the DeviceMaster

Physical serial port #1 on the DeviceMaster may be used as a command console port allowing access to the DeviceMaster's RedBoot prompt.

You will need a PC with a serial (com) port.

You will need a null modem cable to connect the PC to the DeviceMaster serial port #1

(Cable diagrams are shown at the end of this document.)

The "Bootloader Timeout" must be set to 10 seconds or greater.

To determine this value, reboot (power cycle) the DeviceMaster.

There is a yellow Status/Power LED that will need to be watched for a few seconds

(The DeviceMaster LT16 has a 'Stat' LED next to the Ethernet port.)

This LED will flash in an equal on/off rate (about ½ second on, about ½ second off)

This is the only period that the console port will be available.

The LED will then go solid on (with a ¼ second off period every 10 seconds)

You must connect to the serial port during the equal on/off period using a terminal program such as Hyperterminal or Comtrols Wcom application. For this example, Wcom (Test Terminal) will be used

If the BootLoader Timeout has been configured for less than 10 seconds (default is 15 seconds), it can be very difficult to get the timing right to log into the console port and may take multiple attempts to get it 'just right'. In that case, the DeviceMaster needs to be returned to Control to have the system reflashed. There may be a non-refundable service charge for this service.

Use the following procedure to set up a serial connection with a terminal server program.

You can use HyperTerminal (Windows) or Minicom (Linux) or optionally, Test Terminal (WCom2), which can be accessed from PortVision DX using Tools > Applications > Test Terminal (WCom2).

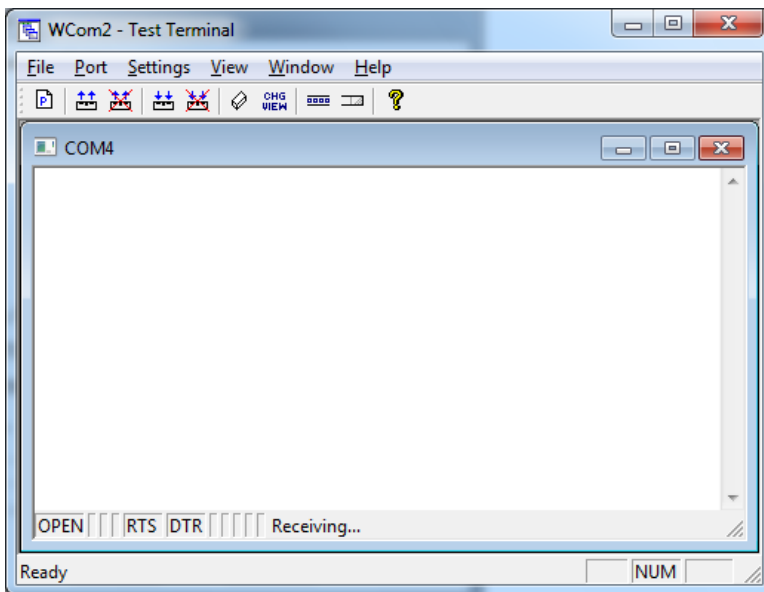
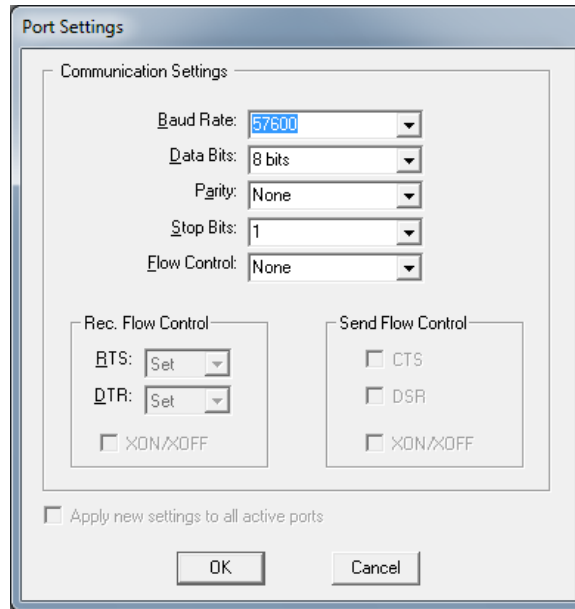
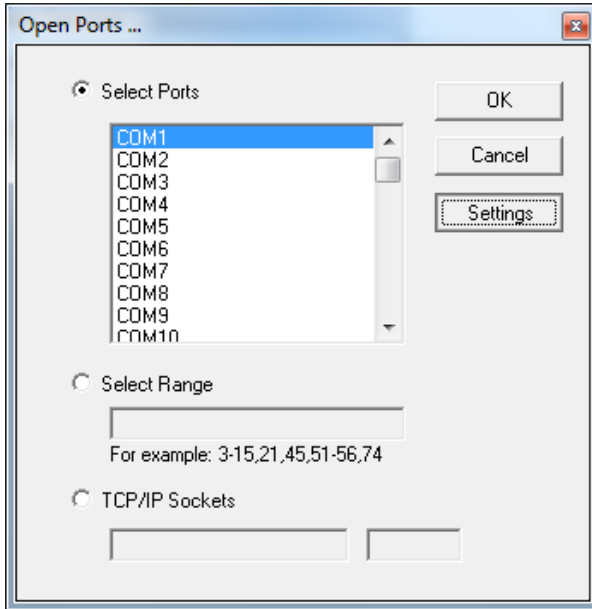
Very Important Note: The DeviceMaster models have 2 different baud rates on the console port based on the serial number(s) of the DeviceMaster.

If your serial number is less than xxxx-029000 the baud rate will be 57600 as shown in the following examples.

If your serial number is greater than xxxx-030000 the baud rate will be 115200. The serial number(s) may be found on the label on the bottom of the unit. This will be the only difference that attention will need to be paid to.

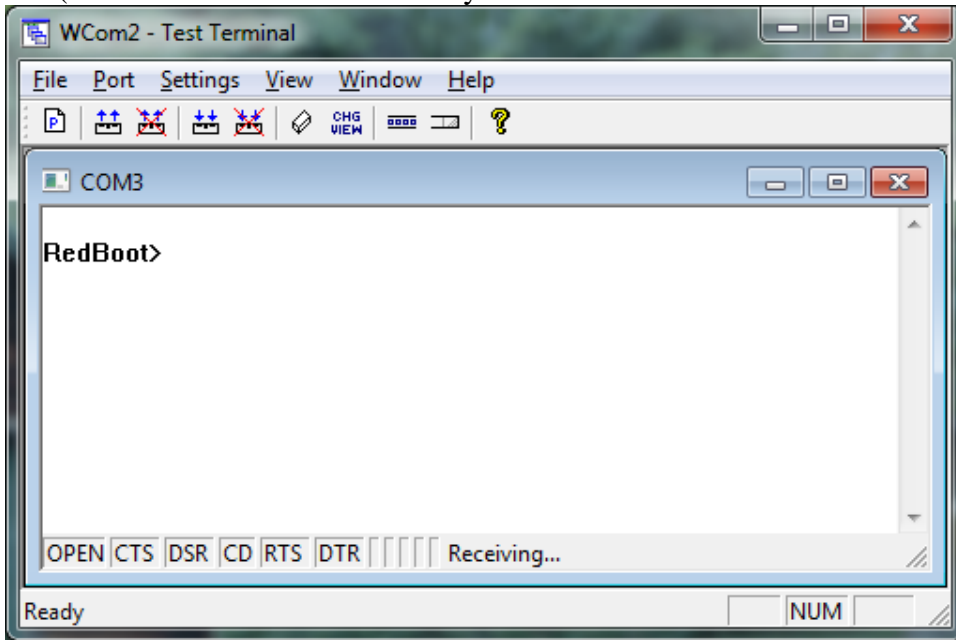
Using Test Terminal:

1. Connect a null-modem cable from an available COM port on your PC to Port 1 on the DeviceMaster.
2. Configure the terminal server program to the following values:
 - Bits per second = 57600
 - Data bits = 8
 - Parity = None
 - Stop bits = 1
 - Flow control = None



Now that Test Terminal is prepared, power cycle the DeviceMaster. Wait for a second or two for the Power/Status LED to begin its equal on/off pattern then return to Test Terminal.

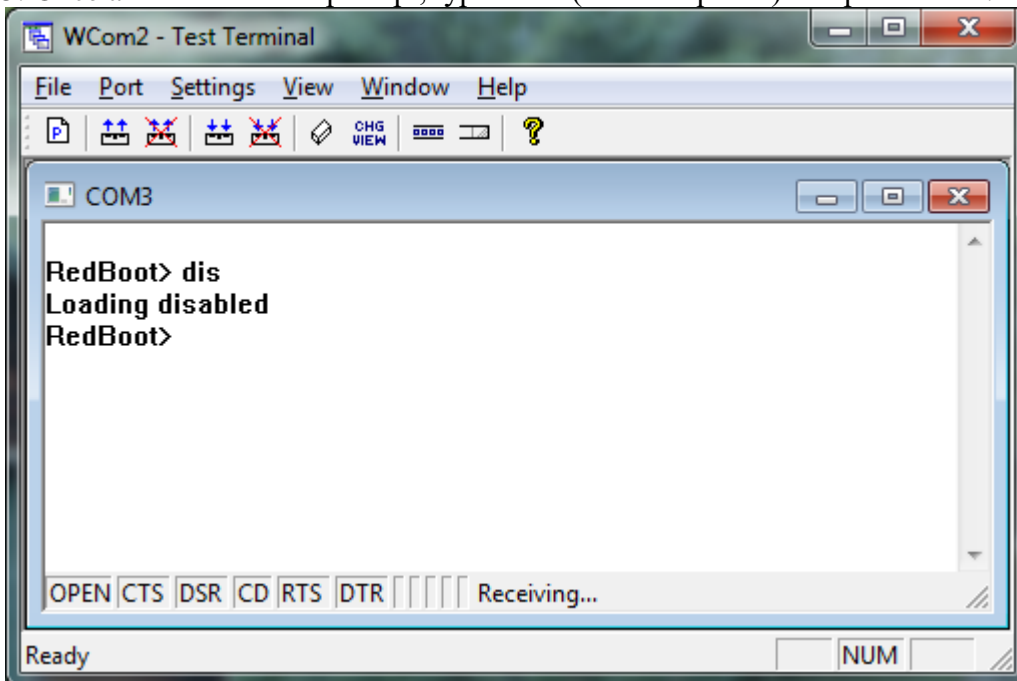
4. After 2 to 3 seconds, type **#!DM** and press Enter in the terminal program.
(You will not see what you are typing)
(The **#!DM** command is the only case-sensitive command and the D and the M must be in uppercase.)



You should now be at the RedBoot> prompt.

If you have not gotten the RedBoot> prompt, then power cycle the DeviceMaster and try again. You may have to do this several times in order to get the timing 'just right'. Until the RedBoot> is presented we can proceed no further. In the event that you are unable to get to this point, you will need to request an RMA number from Control to return the DeviceMaster to Control for reflashing. There may be a charge for this from Control.

5. Once at the RedBoot> prompt, type "dis" (without quotes) and press Enter.



6. Verify that loading has been disabled. You should see Loading disabled and then a prompt as seen here. This needs to be done rather quickly. If you do not disable the Bootloader from loading (Steps 3 through 5) within the time-out period (default is fifteen seconds), an application will be loaded from flash and started. If this happens, repeat Steps 3 through 5.

Enter Help at the RedBoot prompt for a list of available commands as shown here:

==~==~==~==~==~==~==~==~==~== PuTTY log 2015.07.16 08:37:06 ==~==~==~==~==~==~==~==~==~==

```
RedBoot> dis
Loading disabled
RedBoot> help
Set/show web authentication
    auth [noaccess,none,basic,md5,invalid]
Set/Query the system console baud rate
    baudrate [-b <rate>]
Show/set Board revision
    boardrev [rev-number]
Manage machine caches
    cache [ON | OFF]
Display/switch console channel
    channel [-1|<channel number>]
Show chassis type (RTS, DM2, LT or UP)
    chassis
Compute a 32bit checksum [POSIX algorithm] for a range of memory
    cksum -b <location> -l <length>
Show/Set CPU clock frequency
    cpufreq
Calibrate SDRAM clock delay
    delaycal <passes>
Disable program loading (auto/default and ns-link)
    disable
Display (hex dump) a range of memory
    dump -b <location> [-l <length>] [-s] [-1|-2|-4]
Manage FLASH images
    fis {cmds}
Show flash info
    flash
Execute code at a location
    go [-w <timeout>] [-c] [-n] [entry]
Help about help?
    help [<topic>]
Display command history
    history
Show/set IP address config
    ip [addr mask gateway]
Load a file
    load [-r] [-v] [-h <host>] [-p <TCP port>][-m <varies>] [-c <channel_number>]
    [-b <base_address>] <file_name>
Run loopback test on port
    loop 232|422|int port-number - 422 NOT Supported on DvcMstr Serial Hub
Show/set Ethernet MAC address
    mac [XX XX XX XX XX XX XX]
Compare two blocks of memory
    mcmp -s <location> -d <location> -l <length> [-1|-2|-4]
Copy memory from one address to another
    mcopy -s <location> -d <location> -l <length> [-1|-2|-4]
Fill a block of memory with a pattern
```

mfill -b <location> -l <length> -p <pattern> [-1|-2|-4]

Show/set Model number
model [model-number]

Set/Delete password
password [password]

Network connectivity test
ping [-v] [-n <count>] [-l <length>] [-t <timeout>] [-r <rate>]
[-i <IP_addr>] -h <IP_addr>

Test RAM
ramtest <passes>

Show/Set RAM timing register values
ramtime [reg [<value>]]

Reset the system
reset

Set/Show secure config enable
secureconf [disable|enable]

Set/Show secure data enable
securedata [disable|enable]

Show/set device serial number
sernum [prefix] [serial_number]
sernum [serial_number]

Short help
?

Set/Show SNMP enable
snmp [disable|enable]

Show configuration summary
summary

Set/Show telnet server enable
telnet [disable|enable]

Show/set telnet timeout
teltimeout [seconds]

Terse command response mode
terse

Run port-to-port RS-485 test
t485 port1 port2 - 485 NOT Supported on DeviceMaster Serial Hub

Show/set bootloader timeout
timeout [seconds]

Display RedBoot version information
version

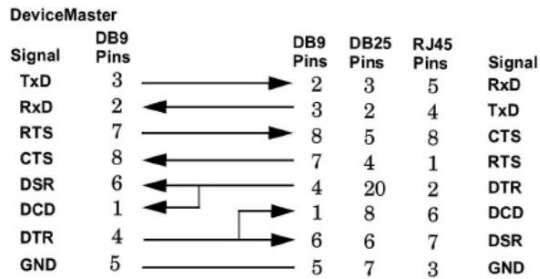
Display (hex dump) a range of memory
x -b <location> [-l <length>] [-s] [-1|-2|-4]

RedBoot> reset
... Resetting.

All cables used as a console cable only require 3 wires consisting of the Transmit (TxD) Receive (RxD) and Ground (GND). The other cables do not have to be connected. The DB9 is the standard connector to use, but if you have a DB25 style connector use the DB25 column.

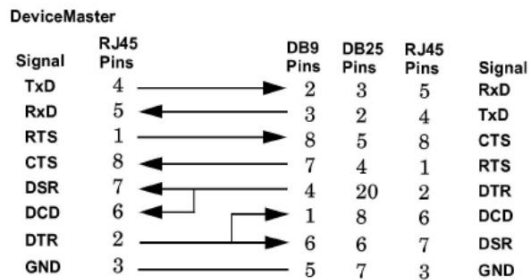
DeviceMaster DB9F to DB9F null modem cable

RS-232 Null-Modem Cables



DeviceMaster 16/32 port RJ45 to DB9F null modem cable

RS-232 Null-Modem Cables



DeviceMaster LT16 RJ45 to DB9F null modem cable

Please note: The DeviceMaster LT16 does have a unique RJ45 pinout.

