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Titan CPU User Manual v9.4
MNL 1003
October 2014

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Introduction

The Titan 8-port CPU Channel Multiplexer allows you to connect multiple Titan Pods or Mini-Recorders to easily configure large channel-count test systems of up to 128 channels.

Device connections to the Titan CPU are made using industry-standard Ethernet cables, which provide communication, power and synchronization on a single cable, simplifying wiring and eliminating the need for extra equipment. Data can be recorded directly to an SD memory card or to a host PC, and network operation is possible via TCP/IP or UDP.

This manual is intended to provide the user with an overview of the Titan CPU, with complete features, specifications, set up procedures and operation. It contains important safety information as well.

Furnished Accessories

The Titan CPU is shipped with the following items:

1. Titan CPU Channel Multiplexer
2. Power Adapter
3. CPU IP Address Programming Cable

Support

Support for this product is available by contacting the factory during regular business hours (9am – 6pm EST) at 301-470-3278. Additional information can be found on our web site: <http://www.marslabs.com>

General Guidelines and Warnings

Electrostatic Discharge

Electrostatic Discharge (ESD) occurs when a static charge builds up on either yourself or the Titan hardware, and then you touch the Titan hardware. The static spark can be so small that you don't feel it, however, it can flaw a semiconductor. These flaws may generate an immediate failure, or, in most cases, cause a slight reduction in performance which will continue to degrade, eventually leading to failure of the hardware. When you feel a static shock, you are experiencing a minimum of 3,000 volts of electricity.

Even though the input connectors have protection to prevent ESD damage, it is good practice to always ground yourself and the Titan hardware while connecting and removing sensors.



Always use approved ESD handling procedures to prevent ESD damage.

Grounding Titans

In general, grounding the Titan hardware to the test vehicle or test structure will usually reduce noise pickup.

All of the analog inputs of the Titan hardware have a return path to ground. However, it is very important that each sensor have only one return path to avoid ground loops. When testing a vehicle, often the vehicle chassis and Titan can have very large ground imbalances of one or two volts. In such situations, ground the sensors to Titan and use differential inputs across the sensor. A totally floating input (like a 9-Volt battery) must have one side grounded at the point where used, either grounded to Titan or connected to the vehicle chassis ground via a resistor (e.g. 10K ohm).

If there is a possibility that a floating sensor may be occasionally grounded, install a 10K ohm resistor from the minus input to Titan ground. When the sensor is floating, the 10K ohm resistance will reference it to Titan ground, and when it is grounded, the resistor will allow the direct minus input wire to reference the remote chassis ground.



Specific Warnings

1. When using a power adapter with the Titan, always connect the adapter to the Titan before applying power. Never hot plug a Titan device under any circumstances - hot plugging may damage the device!
2. Under no conditions should the 12V and 5V lines on the Titan hardware be shorted together or connected directly to ground.

Guidelines for Wiring Sensors

Observe the following guidelines when wiring and connecting sensors to the Titan hardware:

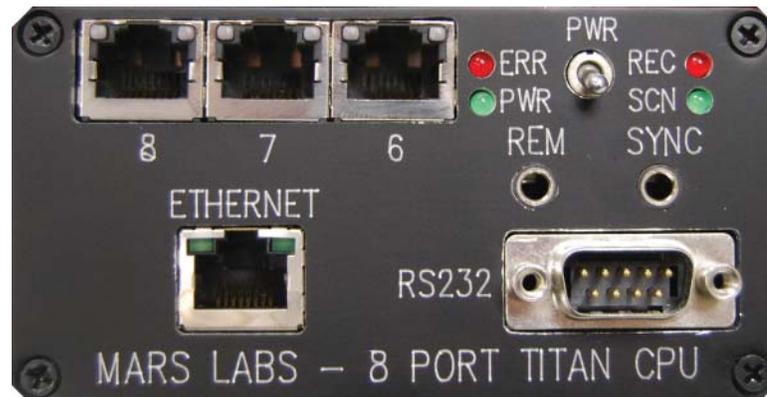
1. Observe polarity of sensor wires
2. Strain relieve all connections
3. Secure cables with wire ties and bundle cables where possible
4. Secure connectors by fastening to the Titan chassis
5. For Thermocouples, apply heat shrink to exposed wires
6. Double check all connections prior to connecting the cables to the Titan
7. Use only heavy gauge straight-through CAT-6 Ethernet cables with locking tabs when connecting to the Titan CPU Channel Multiplexer.
8. When routing cables, be aware of sharp edges and pinch points where cables can bind or be cut, introducing shorts in the wiring

Operation

A functional description of the Titan CPU front and rear panels appears below.

Front Panel

The Titan CPU front panel incorporates LED status indicators, an Ethernet port, and an RS-232 connection, plus jacks for SYNC and REM (remote operation), and three RJ-45 connectors (ports 6, 7 & 8) for Titan Input Modules.



Panel Components

Status Indicators

ERR – A red LED indicating an error condition within the Titan CPU.

PWR – A green LED indicating that the Titan CPU is ON.

REC – A red LED indicating the recording status.

SCN – A green LED indicating that the Titan CPU is scanning.

Ethernet

An RJ-45 port that enables the Titan CPU to operate over an Ethernet network, or to connect to a PC using an Ethernet crossover cable.

RS-232

A standard RS-232 connection that provides communication with the microprocessor in the Titan CPU via a terminal emulator program.

SYNC

An 1/8" Tip-Ring-Sleeve (TRS) connection that allows multiple CPUs to be synchronized for large channel-count configurations (>128 channels).

REM

An 1/8" TRS connection that permits remote Start/Stop recording.

PWR

Applies power to the CPU and all connected Titan devices.

Rear Panel

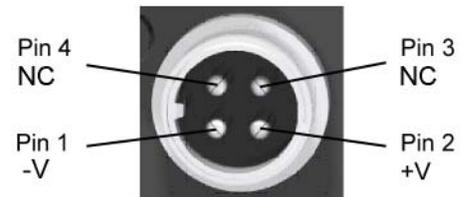
The Titan CPU rear panel incorporates five Titan Module input ports and a power connector:



Panel Components

Power Connector

The integrated power connector provides power to the Titan CPU and all Titan Input Modules. The power supply furnished with the CPU is sufficient to power the CPU and all connected devices. If you need to power the Titan CPU from your own source, observe the power connections shown.



WARNING: When using a power adapter with any Titan device, always connect the adapter before applying power. Never hot plug a device under any circumstances - hot plugging may damage the device!

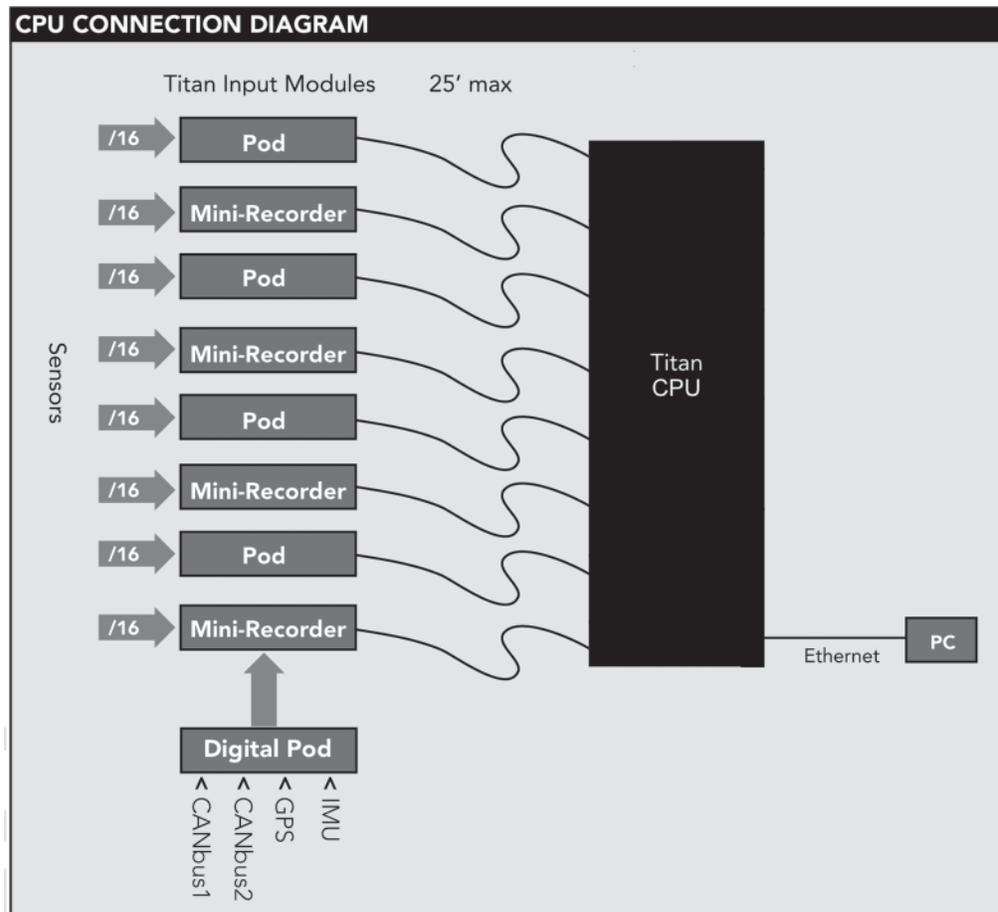
Titan Input Module Ports

Multiple RJ-45 style ports provide the connections for Titan Input Modules. Any combination of Titan Mini-Recorders and Pods can be connected to these ports to provide a total of 128 channels of data acquisition. Connections are made using standard straight-through Ethernet cables.

NOTE: The Titan CPU is offered in 5V and 12V versions. A 5V CPU should be matched with 5V Titan Pods or Mini-Recorders, while a 12V CPU should be matched with 12V Titan Pods or Mini-Recorders. Before making any connections, check to make sure that all devices are compatible. **A 12V CPU should never be connected to a 5V Titan Pod or Mini-Recorder** - doing so will subject the Pod or Mini-Recorder to an overvoltage condition that could damage the device!

Connection Diagram

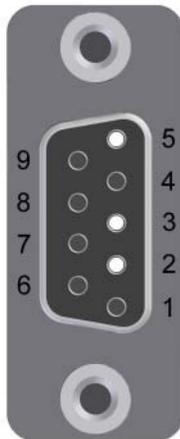
The diagram below depicts a large channel-count data acquisition system (128 analog channels, plus digital channels) using a Titan CPU, eight Titan Input Modules (a combination of Pods and Mini-Recorders), plus a Digital Pod. Connections between the CPU and the Titan Input Modules are made using standard 'straight-through' CAT6 Ethernet cables.



Interface

RS-232 Serial Port:

The RS-232 Serial Port supports the RS-232 standard for DB9 connections. An ANSI terminal or a PC running a terminal emulator is required to communicate through this port. Connections are made with the furnished CPU IP Address Programming Cable (CBL-CPUIP) or a null modem serial cable using serial parameters of 115,200 baud, 8 data bits, no parity, 1 stop bit (8N1), and no flow control. The RS-232 serial port is used to change the IP address of the Titan CPU (see 'Changing the IP Address', page 15).



<i>Pin Number</i>	<i>Function</i>
2	RX
3	TX
5	GND

REM (Remote):

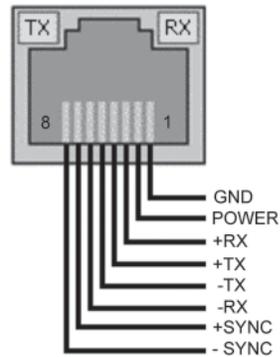
The REM jack permits the Titan CPU recording function to be started and stopped by means of an external switch. This function is implemented on an 1/8" Tip-Ring-Sleeve (TRS) jack, which provides connections for both an external switch and an LED to indicate the START/STOP status:

Tip - External Switch
 Ring - LED
 Sleeve - Ground

The CPU will start recording when a switch closure is made between the Tip and Sleeve contacts. When the switch is in the open position, recording will stop. If an LED is connected between the Ring and Sleeve contacts, it will be illuminated when the CPU is recording.

NOTE: When the Remote Switch is ON (i.e. recording) the Remote LED will blink mostly ON. When the Remote Switch is OFF the Remote LED will blink mostly OFF. The Remote Switch may be connected at any time. If the Remote Switch is ON when the connection is made, the CPU will begin recording immediately with the current test configuration.

Titan Input Module Ports



The Titan CPU has eight identical Titan Input Module Port connectors. LEDs integrated into these connectors indicate when a connected Titan Input Module is transmitting and receiving data. Titan Input Modules connect to these ports using industry-standard 'straight-through' Ethernet cabling, which provides power, sync and data connections on a single cable. The maximum recommended cable length from the Titan CPU to a Titan Input Module is 25'.

Connections

The Titan CPU can be operated directly from a host PC or over a network connection.

WARNING: The Titan CPU is offered in 5V and 12V versions. A 5V CPU should be matched with 5V Titan Pods or Mini-Recorders, while a 12V CPU should be matched with 12V Titan Pods or Mini-Recorders. Before making any connections, check to make sure that all devices are compatible. **A 12V CPU should never be connected to a 5V Titan Pod or Mini-Recorder - doing so will subject the Pod or Mini-Recorder to an overvoltage condition that could damage the device!**

Via a network:

1. If your CPU is configured with a unique IP address on the same subnet as your local network, you can simply connect it to your network. To make sure there are no IP address conflicts, it's a good idea to ping the address before connecting the CPU. To do this, open a command prompt (Start Menu -> Run: cmd) and enter "ping <ip address>".
2. Connect the Titan CPU to the network, but *do not* apply power to the Titan CPU.
3. Using standard CAT-5 or CAT-6 Ethernet cabling, make the connections to the Titan Pods/Mini-Recorders on the Titan CPU. Cable lengths should not exceed 25 feet. Continue until all Titan devices are connected.
4. Apply power to the Titan CPU. The Titan CPU will initialize and automatically detect all connected devices. The initialization period is typically about 90 seconds. Allow the initialization to complete before continuing.

NOTE: Device detection takes place when the CPU starts up. If you connect or disconnect a pod after start-up, the CPU does not automatically re-query the devices. To re-query connected devices, use the supplied Titan Control Software ('TCS').

5. If you have not already done so, install the TCS software according to the installation instructions in the TCS User Manual, and then follow the procedure in the manual to configure the Titan CPU device and Titan Input Modules. For information on changing the CPU's IP address, see page 15.

Via a null modem cable:

1. If you are making a direct connection between the Titan CPU and a PC, you will need to use the supplied CPU Programming Cable (or a null modem cable) and reconfigure the PC with a static IP address on the same subnet as the CPU.

To determine the correct static IP address for the PC, obtain the IP address of the CPU (the IP address is marked on the device). Use the same first three octets of this address, but set the last octet to a different number. For example, if the CPU is configured for “192.168.10.51”, you could set the PC to “192.168.10.61”.

For instructions on changing the PC IP address, refer to the following sources:

For Windows XP -

[http://windows.microsoft.com/en-US/windows-xp/help/networking/
manage-network-connections](http://windows.microsoft.com/en-US/windows-xp/help/networking/manage-network-connections)

For Windows Vista -

<http://windows.microsoft.com/en-US/windows-vista/Change-TCP-IP-settings>

For Windows 7 -

<http://windows.microsoft.com/en-US/windows7/Change-TCP-IP-settings>

2. With the static address changed on the PC, and with no power applied to the Titan CPU, plug the null modem cable into the Ethernet port on the CPU and then connect the other end to the Ethernet port on the host PC.
3. Follow steps 3-5 as described in the ‘Via a Network’ section above.

LED Operation

With power applied to the CPU, the front panel LED indicators will operate as follows:

PWR (Power) - The green PWR LED will illuminate and remain ON while power is applied.

ERR (Error) - The red ERR LED will illuminate while the CPU is initializing, and will extinguish after initialization has completed (about 40 seconds). The ERR LED will be lit if the CPU encounters an error during operation.

SCN (Scan) - The green SCN LED will illuminate when the CPU is scanning.

REC (Record) - The red REC LED will illuminate when the CPU is recording, either under control from TCS or from the Remote Switch.

Remote Switch - If a Remote Switch is connected when power is applied, the Remote Switch LED will illuminate solid while the CPU initializes, and then begin blinking at a 1Hz rate afterwards.

Remote Switch Operation

If a Remote Switch is connected to the CPU when power is applied, the Remote Switch LED will illuminate solid while the CPU initializes, and then begin blinking at a 1Hz rate afterwards.

With the Remote Switch connected, the CPU will attempt to start scanning and recording when the switch is in the ON position.

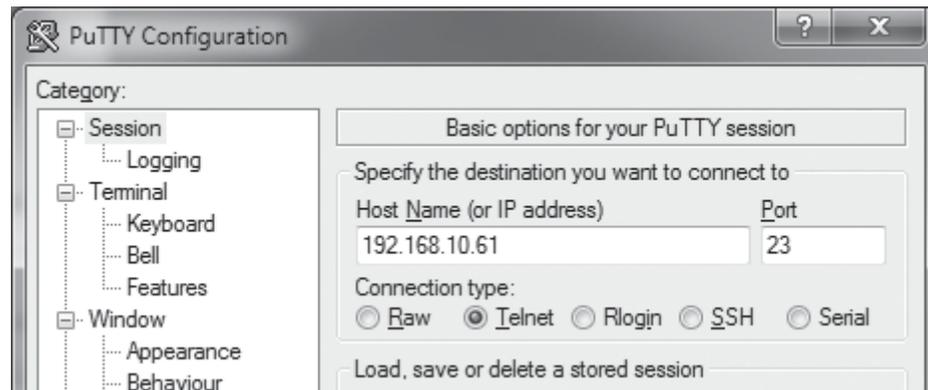
When the Remote Switch transitions from ON to OFF, the CPU will stop recording the current dataset but continue scanning.

Changing the IP Address

If the IP address of the Titan CPU is known, it can be changed via an Ethernet connection. If the address is unknown or uncertain, it can be changed using a serial connection. Both methods are described below

Via an Ethernet connection

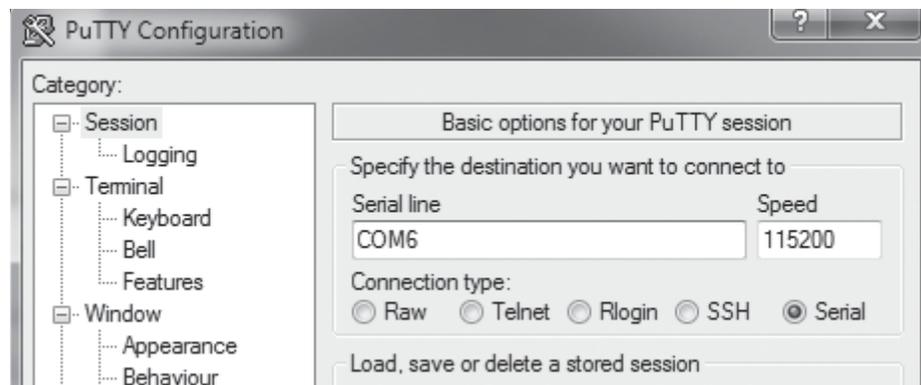
Open a terminal program (Putty is the preferred application for this procedure) and telnet to the IP address of the Titan CPU:



Continue with the procedure on page 16.

Via a serial cable -

Remove power to the Titan CPU. Connect the PC to the Titan CPU Serial Port connector using the CPU IP Address Programming Cable (Mars Labs P/N CBL-CPUIP) or a null modem serial cable (see page 20 for a wiring diagram). Open a terminal program (Putty is the preferred application) and connect to the serial port at 115200 baud / 8N1 with no flow control:



Apply power to the Titan CPU. When the boot-up sequence finishes a 'ts7800 login' prompt will appear. Continue with the procedure on page 16.

Changing the IP Address (con't)

1. At the ts7800 login prompt, enter “root”; the password is “blah99”.

NOTE: Entries are case sensitive. Be sure to use lower case when logging in.

2. After logging in, switch to the network directory by entering:

“cd /data/data” <ENTER>

“cp /etc/network/interfaces .” <ENTER>

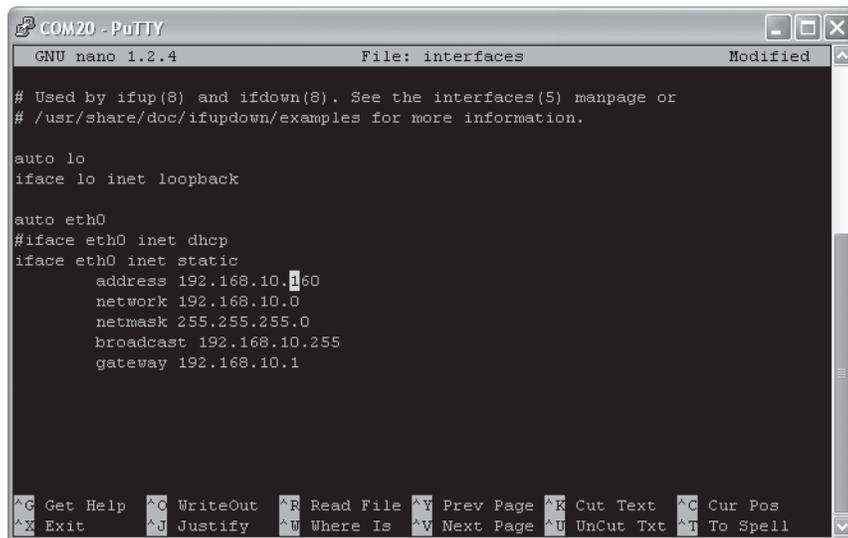
(Note the space between the word ‘interfaces’ and the period)

The prompt will change to “root@ts7800:network #”

3. At the new prompt, enter:

nano interfaces <ENTER>

You will be presented with an edit screen like this:



```
COM20 - PuTTY
GNU nano 1.2.4 File: interfaces Modified
# Used by ifup(8) and ifdown(8). See the interfaces(5) manpage or
# /usr/share/doc/ifupdown/examples for more information.

auto lo
iface lo inet loopback

auto eth0
#iface eth0 inet dhcp
iface eth0 inet static
    address 192.168.10.60
    network 192.168.10.0
    netmask 255.255.255.0
    broadcast 192.168.10.255
    gateway 192.168.10.1

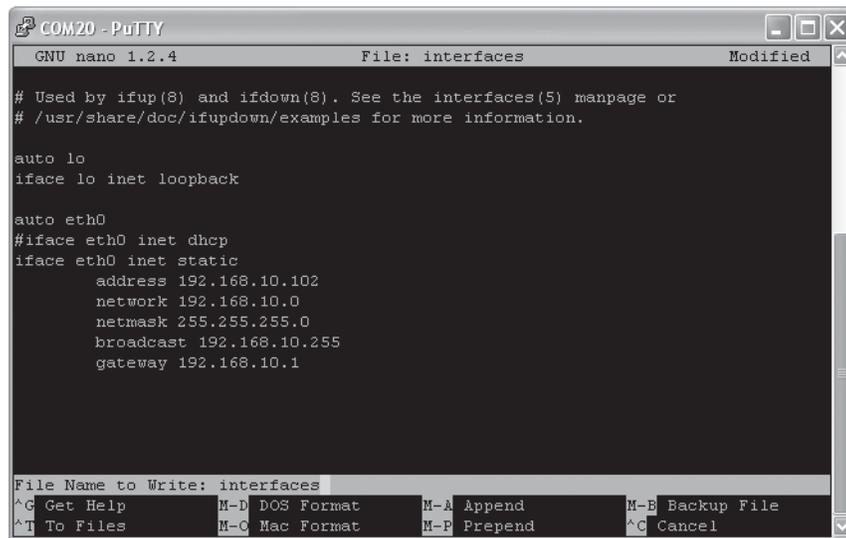
^G Get Help ^C WriteOut ^R Read File ^Y Prev Page ^K Cut Text ^C Cur Pos
^X Exit ^U Justify ^W Where Is ^V Next Page ^U UnCut Txt ^T To Spell
```

4. Use the cursor keys to move the cursor to the IP address field and edit the displayed address as desired. When the new address is complete, press CTRL O to write the change.

NOTE: You can also change the network, mask, broadcast and gateway addresses from this screen.

Changing the IP Address (con't)

5. The edit screen will ask you to save the change using the default file name "interfaces". Press ENTER:



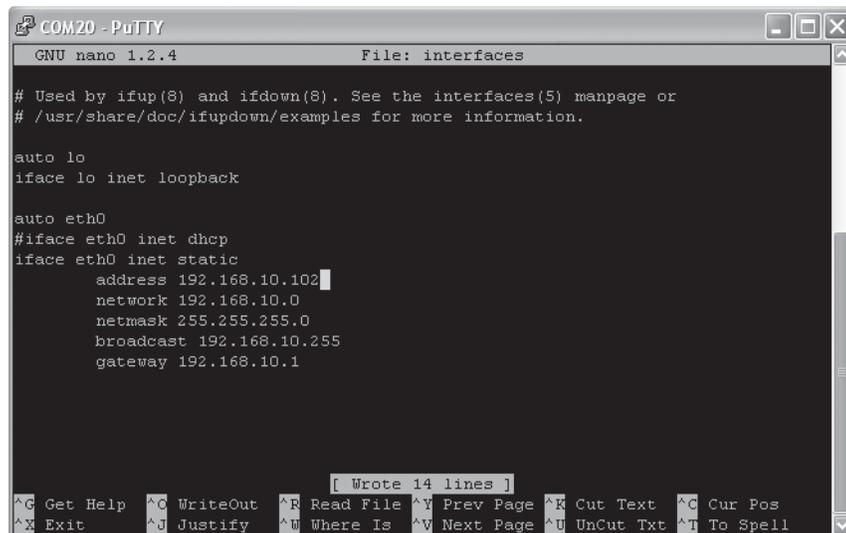
```
COM20 - PuTTY
GNU nano 1.2.4      File: interfaces      Modified
# Used by ifup(8) and ifdown(8). See the interfaces(5) manpage or
# /usr/share/doc/ifupdown/examples for more information.

auto lo
iface lo inet loopback

auto eth0
#iface eth0 inet dhcp
iface eth0 inet static
    address 192.168.10.102
    network 192.168.10.0
    netmask 255.255.255.0
    broadcast 192.168.10.255
    gateway 192.168.10.1

File Name to Write: interfaces
^G Get Help      M-D DOS Format  M-A Append     M-B Backup File
^T To Files      M-C Mac Format  M-P Prepend    ^C Cancel
```

6. The program will return to the previous screen. Press CTRL X to exit:



```
COM20 - PuTTY
GNU nano 1.2.4      File: interfaces      Modified
# Used by ifup(8) and ifdown(8). See the interfaces(5) manpage or
# /usr/share/doc/ifupdown/examples for more information.

auto lo
iface lo inet loopback

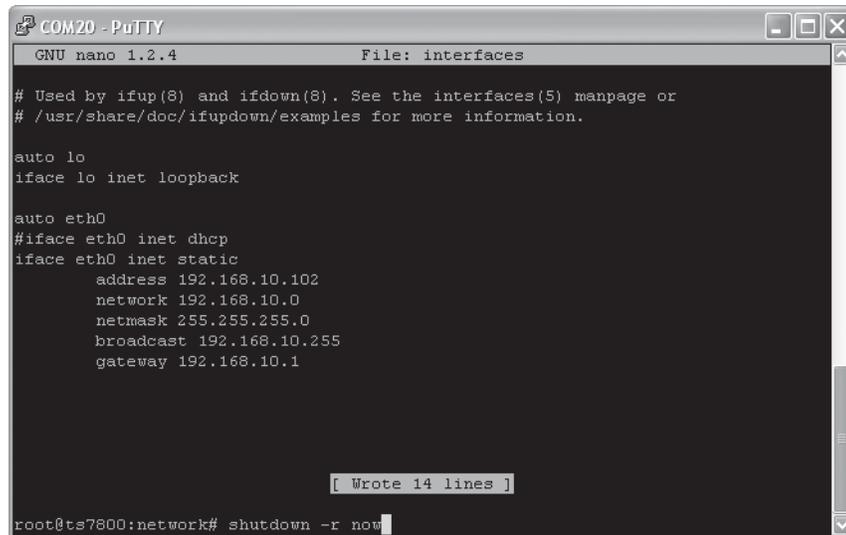
auto eth0
#iface eth0 inet dhcp
iface eth0 inet static
    address 192.168.10.102
    network 192.168.10.0
    netmask 255.255.255.0
    broadcast 192.168.10.255
    gateway 192.168.10.1

[Wrote 14 lines]
^G Get Help      ^C WriteOut     ^R Read File    ^Y Prev Page   ^K Cut Text     ^C Cur Pos
^X Exit          ^J Justify      ^W Where Is     ^V Next Page   ^U UnCut Txt   ^T To Spell
```

Changing the IP Address (con't)

9. The program will leave the edit screen and return to the original window. At the 'network' prompt, enter:

“shutdown -r now” <ENTER>



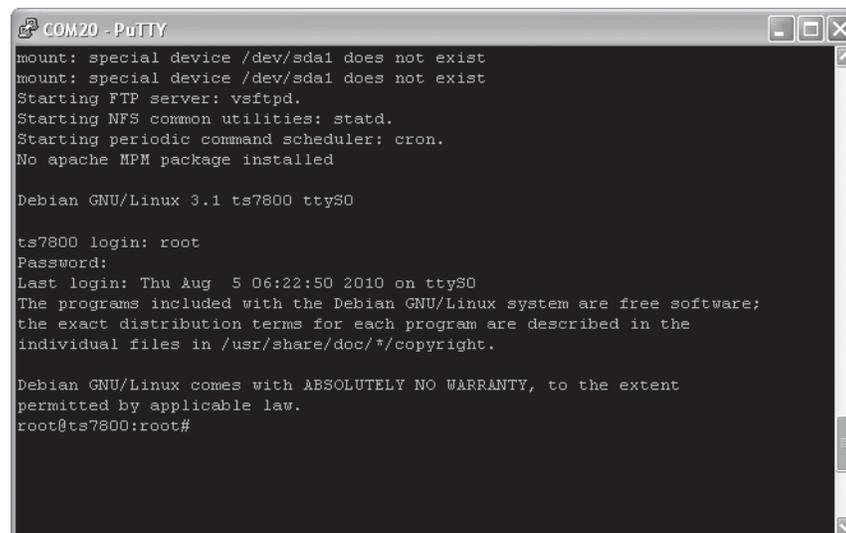
```
COM20 - PuTTY
GNU nano 1.2.4      File: interfaces
# Used by ifup(8) and ifdown(8). See the interfaces(5) manpage or
# /usr/share/doc/ifupdown/examples for more information.

auto lo
iface lo inet loopback

auto eth0
#iface eth0 inet dhcp
iface eth0 inet static
    address 192.168.10.102
    network 192.168.10.0
    netmask 255.255.255.0
    broadcast 192.168.10.255
    gateway 192.168.10.1

[ Wrote 14 lines ]
root@ts7800:network# shutdown -r now
```

10. The Titan CPU will execute a shutdown operation and then reboot. After rebooting, login again (login “root”, password “blah99”):



```
COM20 - PuTTY
mount: special device /dev/sda1 does not exist
mount: special device /dev/sda1 does not exist
Starting FTP server: vsftpd.
Starting NFS common utilities: statd.
Starting periodic command scheduler: cron.
No apache MPM package installed

Debian GNU/Linux 3.1 ts7800 ttySO

ts7800 login: root
Password:
Last login: Thu Aug  5 06:22:50 2010 on ttySO
The programs included with the Debian GNU/Linux system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

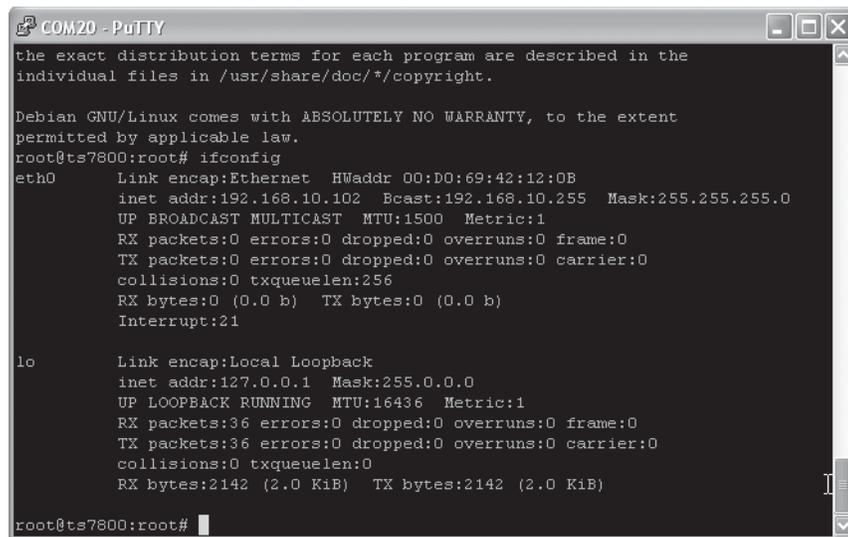
Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.
root@ts7800:root#
```

Changing the IP Address (con't)

11. Verify the change by entering the command:

```
ifconfig <ENTER>
```

The program will display a list of information, including the new Ethernet IP address (the line labeled 'eth0 inet addr'):



```
COM20 - PuTTY
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.
root@ts7800:root# ifconfig
eth0      Link encap:Ethernet  HWaddr 00:DO:69:42:12:0B
          inet addr:192.168.10.102  Bcast:192.168.10.255  Mask:255.255.255.0
          UP BROADCAST MULTICAST  MTU:1500  Metric:1
          RX packets:0 errors:0 dropped:0 overruns:0 frame:0
          TX packets:0 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:256
          RX bytes:0 (0.0 b)  TX bytes:0 (0.0 b)
          Interrupt:21

lo        Link encap:Local Loopback
          inet addr:127.0.0.1  Mask:255.0.0.0
          UP LOOPBACK RUNNING  MTU:16436  Metric:1
          RX packets:36 errors:0 dropped:0 overruns:0 frame:0
          TX packets:36 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:0
          RX bytes:2142 (2.0 KiB)  TX bytes:2142 (2.0 KiB)

root@ts7800:root#
```

12. Finally, exit the program by entering:

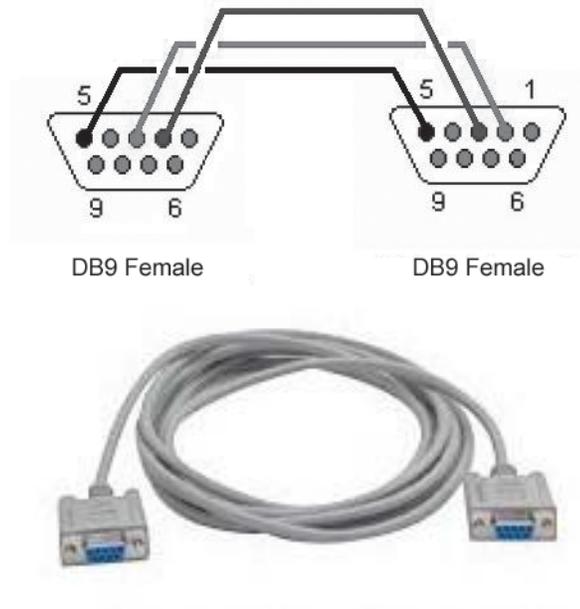
```
exit <ENTER>
```

The Titan CPU IP address is now changed. Close Putty and remove the RS-232 connection. The new address will be applied the next time the CPU is booted.

NOTE: After changing the IP, you should make note of it for future use. In TCS, you will also need to reconnect to the Titan CPU at the new address.

Null Modem Cable/USB Serial Adapter

A null modem cable is an RS232 cable with pins 2 and 3 reversed. Null modem cables feature DB9 female connectors at each end, enabling file transfers between two PC's over a common serial connection. Commerically-made null modem cables are widely available; they can also be easily fabricated.



A Null Modem Cable

In addition to the null modem cable, you may also need a USB to Serial RS-232 Adapter. This type of adapter has an RS-232 Serial connector (DB9 male) at one end and a standard USB port connector at the other end. It provides USB connectivity for serial port interfaces.



USB to Serial Adapter

Features and Specifications

Key Features

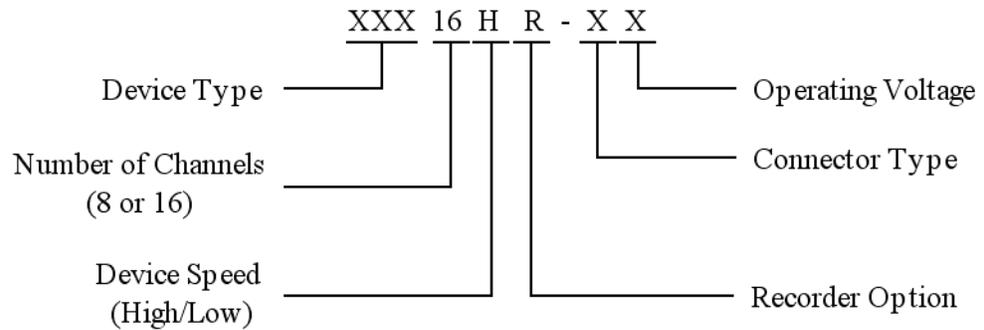
- Connects multiple Titan Input Modules to create large channel-count recording systems
- Isolated power supply accepts voltages of 11–32 VDC.
- Records data directly to an SD memory card (non-removable) or to local host PC
- Network interface allows remote operation via TCP/IP or UDP
- Compact size and low weight make the CPU suitable for in-vehicle applications
- Remote control jack for cabled Start/Stop control
- Auto Start / Auto Record modes
- Simplified user interface allows for easy operation under difficult operating conditions

Specifications

Recording Media:	16GB SD Memory Card (non-removable)
Number of Titan Modules supported:	Up to eight 16-channel Titan Input Modules (128 channels total)
Sample Rate:	Supports up to 2500 samples/sec with 8 modules (128 channels max.) Supports 4K samples/sec with 4 modules (64 channels max.) Supports 5K samples/sec with 2 modules (32 channels max.)
Power Requirements:	11–32 VDC Approximately 4W for CPU (add 4W for each Titan Input module)
PC Operation:	Via network or crossover Ethernet cable
Dimensions / Weight:	13.3 cm x 10.6 cm x 5.6 cm (L x W x H) / 500g

Titan Nomenclature

Titan device configurations are specified by the part number in the following basic format:



For the Titan CPU:

Device Type:

CPU – Titan CPU Channel Multiplexer

Recorder Option:

Standard on all Titan CPUs

Connector Type:

‘0’ – 12V Output to Pods / 4-pin Voltage Input

‘1’ – 12V Output to Pods / XLR Voltage Input

‘2’ – 5V Output to Pods / 4-pin Voltage Input

‘3’ – 5V Output to Pods / XLR Voltage Input

‘4’ – 0V Output to Pods / 4-pin Voltage Input

‘5’ – 0V Output to Pods / XLR Voltage Input

Operating Voltage:

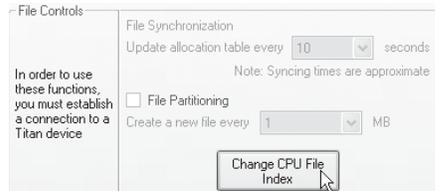
‘1’ – for 12 volt devices

‘2’ – for 24 volt devices

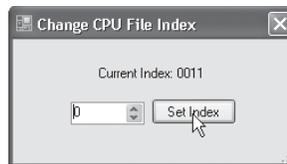
‘3’ – for wide input range devices (11-32V)

Reseting the CPU File Index

The CPU remote recording index (AKA ‘File Index’) always increments based on the value of the last recorded test, and keeps incrementing, even if all recorded test files are deleted. Since there may be occasions where it is desirable to reset the index, TCS (versions 3.0.4 and higher) include a button for this purpose. The button is located in the ‘File Controls’ pane on the Recording & Triggers screen:



Clicking on the button produces a selection window that allows you to set the index value to any value from 0000 to 9999. To set the value, use the increment/decrement controls or manually enter the desired value in the number field:



The index value can also be reset by issuing a manual command in the TCS Manual Command window (function key F10 in the Configuration tab). For example, to reset the value to zero, enter the command:

```
SET_FILE_NUM 0000
```

Note: Using either method described above, after resetting the index to zero, TCS will display a ‘?’ in the CPU Device Index field until a new remote recording is made.

Related ICD Commands:

SET_FILE_NUM

Syntax: SET_FILE_NUM <VALUE><CR>
 Summary: Sets the file index of the CPU to the specified value.
 Valid Inputs: <VALUE> = A four digit number from 0000 to 9999
 Ex. Response: ACK, ERROR

GET_FILE_NUM

Syntax: GET_FILE_NUM <CR>
 Summary: Returns the file index of the CPU
 Valid Outputs: From ‘0000’ to ‘9999’
 Ex. Response: <VALUE>

Warranty

Mars Labs warrants all their manufactured equipment to be free from defects in material and workmanship. **Mars Labs** liability under this warranty is limited to servicing or adjusting any equipment returned to the factory for that purpose, and to replace any defective parts thereof. The warranty remains effective for 365 days following delivery to the original purchaser. During this time, equipment will only receive repair when the original purchaser prepays all return transportation charges, and **Mars Labs** finds to its satisfaction that the equipment is indeed defective.

If the fault has been caused by misuse or abnormal conditions of operation, normal service charges will prevail. In this case, an estimate will be submitted before work is started. **Mars Labs** must authorize any warranty returns.

Mars Labs reserves the right to make changes in the design of its instruments without incurring any obligation to make the same changes on equipment previously purchased.

This warranty will be void if unauthorized alterations or modifications are found which impede the repair or testing of the equipment.

Receipt of Equipment

The equipment should be tested as soon as it is received. If the equipment is damaged in any way, a claim should be obtained by the claim agent, and this report should be forwarded to **Mars Labs**.

Mars Labs will then advise the customer of the disposition to be made of the equipment and arrange for repair or replacement. When referring to this equipment for any reason, the model number, serial number and purchase order number should be included.

Malfunction

If the unit fails to operate, or any fault develops, **Mars Labs** should be notified, giving full details of the difficulty, including model number and serial number. Upon receipt of this information, **Mars Labs** will provide service data and shipping instructions.

This warranty is expressly in lieu of all other obligations or liabilities on the part of **Mars Labs**, which neither assumes nor authorizes any person to assume for it any other liability in connection with the sale of its equipment. Contact:

Mars Labs
29 C Street
Laurel, MD
20707
(301) 470-3278
email: Support@MarsLabs.com

Notes & Known Issues

Additional information about the CPU not covered elsewhere:

Error Indications:

If a Titan Input Device (Mini-Recorder or Pod) stops sending data for any reason, the CPU will stop recording/stop scanning and display an error (the ERR LED will be ON).

CPU Power Loss/Data Loss:

1. In the event of a power loss while recording remotely to the CPU, data loss is limited to 10 seconds maximum.
2. If the CPU loses power while scanning, all independently-powered Titan Input Devices (Mini-Recorders or Pods) must be power-cycled in order to resynchronize the system.

CPU Remote Recording:

The CPU does not automatically handle Pod configuration changes made since the last remote recording (for example, if Pods are swapped between ports, or if a Pod is removed and used for another test, and then reconnected to the CPU). If a change occurs between tests, connect to TCS and run a short test to reconfigure the CPU and all connected Pods prior to resuming remote recording.

Remote Switch Operation:

If the Remote Switch is connected to the CPU and switched ON, the CPU will attempt to record repeatedly even if no pods are connected or an error condition exists. Each attempt will generate a small data file on the CPU. These files are invalid.

Mini-Recorder/Pod Reconfiguration

When a Mini-Recorder or Pod is connected to the CPU, the baud rate on the COMM port is reset to 3Mbits. Remote recording functionality on Mini-Recorders is also disabled (this includes both the front panel switch and the REM jack on the Mini-Recorder). The default baud rate and remote recording capability is restored on Titan Mini-Recorders after running a test directly from TCS.

