APPLICATION NOTE:
Titan Device COMM Baud Rates

APN-1006

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Overview

This application note addresses the operation and settings related to the baud rate of the RJ45 (COMM) ports on Titan devices.

Configuration

To facilitate a common system baud rate when USB serial adapters are used on Titan COMM ports, specific baud rate commands have been implemented in the latest device firmware. In order to use this new capability, Titan devices should first be updated to current firmware versions.

> **Note:** *The Titan CPU is not impacted by this change.*

> **Notes:**
> 1. *You can use TCS to confirm the installed firmware version of a given Titan device. Note that high-speed Mini-Recorder/Pod devices with firmware version 0.29.2 or higher already support the command that is used to select a common baud rate.*
> 2. *The Titan CPU is not impacted by this change.*

Titan firmware is updated using the Titan Programmer. Please refer to the Titan Programmer User Manual for information on updating the firmware.

Since the Titan CPU automatically sets the baud rate to 3M, Mars Labs recommends this setting as the common baud rate for *all* configurations, regardless of whether a CPU is in use or not.

To set a common baud rate, use the Manual Command function in TCS to configure the Titan devices as follows.

> For the DAC:
>> Connect the DAC via USB to TCS, and apply External Power to the DAC. In TCS, connect to the DAC and select 'Manual Command' (F10). In the Manual Command window, enter the following:
>>
>> SET_DEFAULT_POD_RATE 3000000 <CR>
>>> This command will set the default baud rate between the DAC and Pod to 3M.
>>
>> RUN <CR>
>>> Sends the command down to the DAC
>>
>> Disconnect in TCS and cycle the DAC power. The baud rate between the DAC and Pod (POD COMM port) is now set to 3M.

> For the POD:
>> Connect the Pod via USB to TCS. In TCS, connect to the Pod and select 'Manual Command' (F10). In the Manual Command window, enter the following:
>>
>> SET_DEFAULT_BAUD_RATE 3000000 <CR>
>>> This command sets the baud rate for the Mini-Recorder/Pod COMM port to 3M.
>>
>> RUN <CR>
>>> Sends the command down to the Pod.
>>
>> Disconnect in TCS and cycle the Pod power. The baud rate at the Pod COMM port is now set to 3M.

The baud rate change for both devices persists across power cycles.

Note that when the DAC and Pod is set to 3M, TCS must also be set 3000000 (3M) for all tests using these devices when a USB serial adapter is in use.

> ***Note:*** *When connecting to fixed (common) baud rate devices in TCS, do not use the 'Auto' mode.*

Limitations of using the 3M Baud Rate

A limitation of using the 3M baud rate is that it reduces the effective distance between connected devices to approximately 25 feet. This length will reliably support communications at the 3M rate *and* power distribution over standard Ethernet cables. Longer distances are possible at this rate, but Titan devices *must* be powered individually. Distances of up to 300 feet (maximum) are possible, but with a reduced baud rate and with the devices individually powered. Users whose cable length requirements between devices exceed 25 feet should consult the factory for more information and assistance.