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### Application Note 51632 (Revision -, 5/2021) Original Instructions

# ProTech Settings File Load Failure: USB-to-Serial Converter Latency Timer issue

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## ProTech Settings File Load Failure USB-to-Serial Converter Latency Timer Issue

### Problem

The issue is that a settings file load does not complete due to excessive loading time introduced by the USB-to-serial converter. While performing a settings file load from the ProTech service tool to the actual device, the primary requirement for the ProTech is that the settings load finishes prior to the 30 second timeout period. If the settings load does not complete prior to the 30 second timeout, the ProTech will error out internally and the service tool will appear to freeze or never fully complete the change. This can happen in two different ways:

### 1. Loading a Settings File (.wset) to the ProTech Device:

While loading a settings file to the ProTech device via the service tool, you will eventually come to the Loading Settings screen:

💥 Load Settings File to Device	×
Loading Settings Please wait	
Settings File: C:\Users\sforti\Documents\ProTech GII\Non-Voted\Test.wset	
Checking Configuration	
	Cancel Next >

During a settings file load, you should give the device several minutes to complete loading the file to ensure you do not interrupt the process. However, if the Loading Settings screen appears to be stuck as pictured above for an extended period of time it is very likely your ProTech has an internal error.

### 2. Changing Settings on the ProTech Using the Service Tool:

If using the service tool to alter settings on the ProTech, once complete and "OK" or "Apply" are selected, the service tool automatically writes all settings from the service tool to the device.

If "OK" is selected and the settings load is completed successfully, the Edit/View Configurations window will close, and you will end up back at the Home screen shown below:



ain Vew Settings Tools     New Open     Close Save     ProTechGII - Programming and Configuration Tool     On-Line Menu (Must be connected to unit)     CONFIGURATION - Upload - Download        View Configuration   ProTechGII - Programming and Configuration Tool             ConFigURATION - Upload - Download   View ProTechGII Logs     Configuration Error Log View Module Faults Log Configuration Overview    Plass  Total Use the above 'Settings' Edit Settings File Function for Line Menu' Functions  Total Use the above 'Connect' Function then the 'On-Line Menu' Functions  Reset Peak Speed () RPM Peak Acceleration 0.00 RPM/s Reset Peak Speed/Acceleration	ProTechGII.wstool - W	oodward ToolKit			? - □	
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Edit/View Configuration       View Configuration Error Log       View Trip and Alarm Log       View Overspeed/Acceleration Log         View Module Faults Log       Configuration Overview         otes:       Configuration Overview         Fo Edit Off-Line Files - Use the above 'Settings' Edit Settings File Function Fo Edit On-Line Settings - Use the above 'Connect' Function then the 'On-Line Menu' Functions         ak Speed/Acceleration Log       0 RPM       Peak Acceleration       0.00 RPM/s         Reset Peak Speed/Acceleration       0 RPM       Peak Acceleration       0.00 RPM/s	CONFIGURATION	- Upload - Download	View P	roTechGII Logs		
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reak Speed     0 RPM     Peak Acceleration     0.00 RPM/s	ak Speed/Acceleration Log					
Reset Peak Speed/Acceleration	eak Speed	0 RPM	Peak Acceleration	0.00 RPM/s		
	Reset Peak Speed/A	Acceleration				

If "Apply" is selected and the settings load is completed successfully, you will remain on the Edit/View Configuration window, but the status bar at the bottom will be blank and both the "OK" and "Apply" buttons will now be greyed out:

K Edit/View Configura	ation				×
Main		$\mathbf{\Theta}$	Speed	· ·	^
Back Forward Previ Navigation	ous Next Page Tools				
ProTechGII - Progr	amming and Configur	ation Tool	<b>W</b>	VOODWARD	Î
	Off-Lin	e Progra	am Mode - S	peed	
Speed	Modbus		Test Modes	Other Outputs	
Configure Speed Input		Conf	igure Acceleration		
Probe Type	Passive ~	En	able Acceleration Trip	No Y	
Nr of Gear Teeth	60	Ac	celeration Trip Enable Speed	100 RPM	
Gear Ratio	1.0000	Ac	celeration Trip	0 RPM/s	
Overspeed Trip	100 RI	PM			
Sudden Speed Loss	Trip ~				
Configure Start Logic					
Speed Fail Setpoint	100 R	RPM			
Speed Fail Trip	Not Used 🗡				
Speed Fail Alarm	Not Used 🛛 🗡				
Speed Fail Timeout Trip	Not Used 💙				
Speed Fail Timeout Time	1 s				
	Blank, no information s	hown and b	oth 🗖		ř
	he OK and Apply buton	s are greyed	out	OK Close Ap	ply

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If either the "OK" or the "Apply" buttons are selected and the settings load was unsuccessful, you will remain on the Edit/View Configuration window, the status bar at the bottom will show "Checking Configuration...." with a green progress bar and both the "OK" and "Apply" buttons will be greyed out:

K Edit/View Configuration			×
Main	$\bigcirc$	Speed Speed	· · ·
Back Forward Previous Page Navigation	Next Page Tools		
ProTechGII - Program	ming and Configuration	Tool	OODWARD
	Off-Line P	rogram Mode - Spe	eed
Speed	Modbus	Test Modes	Other Outputs
Configure Speed Input		Configure Acceleration	
Probe Type	Passive Y	Enable Acceleration Trip	No 🗡
Nr of Gear Teeth	60	Acceleration Trip Enable Speed	100 RPM
Gear Ratio	1.0000	Acceleration Trip	0 RPM/s
Overspeed Trip	100 RPM		
Sudden Speed Loss	Trip 👻		
Configure Start Logic			
Speed Fail Setpoint	100 RPM		
Speed Fail Trip	Not Used 🛛 👻		
Speed Fail Alarm	Not Used 🛛 🗡		
Speed Fail Timeout Trip	Not Used 🛛 🗡		
Speed Fail Timeout Time	1 s		
Status har s	hows "Checking Configur	ation" with green	
progress bar a	and both the OK and Appl	y butons are greyed	OK Cancel Apply
Checking Configuration	1		

**Note:** you should allow the service tool several minutes to complete this operation to ensure you are not interrupting the settings load to the device. If the service tool appears to be frozen as pictured above for an extended period it is very likely your ProTech has an internal error.

## Solution

Using the USB-to-Serial converter introduces latency in the data transfer time that was not previously present in pure serial or RS-232 connections. This additional time can cause an issue when communicating to the ProTech. In the event of an internal error, the latency is not allowing the settings changes to load in the given 30 second timeout window. With some USB-to-Serial converters you can adjust the Latency Timer under Advanced Settings in Device Manager for the given adapter/converter. If your device does not allow you to adjust this Latency Timer, then you may need to get a different USB-to-Serial Converter and Driver software that will allow you to make this adjustment. There are some converters/adapters that do not allow you to make this adjustment, but also do not seem to have the same latency issue, so please keep that in mind as well.

On the devices investigated that allow for the Latency Timer to be adjusted, the Latency Timer was default set to 16ms. In order to maximize transfer speeds and remove the problem noted above, simply adjust the Latency Timer to 1ms (or lowest available setting). If there are any concerns with adjusting the Latency Timer to the lowest setting it is not completely necessary to do so. Alternate settings can be used. The primary goal is to ensure that the overall settings load time is under 30 seconds or the internal error is likely to occur. Here are the steps you can take to adjust the Latency Timer:



- 1. Go into Device Manager
- 2. Select the Ports (COM & LPT) drop down
- 3. Right-Click on the RS-232 Serial Port adapter
- 4. Select Properties



- 5. In the Properties window select the Port Settings tab
- 6. Select the Advanced... button.

RS-232 Isolated Port (COM4) Properties	×
General Port Settings Driver Details Events	
Bits per second: 9600 ~ Select Port Setting Tab Parity: None ~ Stop bits: 1 ~ Flow control: None ~	
Advanced Restore Defaults Select the Advanced option	
OK Cance	

 In the Advanced Settings window select the Latency Timer drop-down and choose a time less than 16 msec. Make sure to choose a value that will allow settings load times under 30 seconds (may need to experiment with this).



8. Select OK to get out of the Advanced settings and OK to get out of Properties. You should see the Device Manager refresh. In some cases, making this change may require a PC reboot.

lvanced Settings for CO	M4		?	>
COM Port Number:	COM4	~	ОК	
USB Transfer Sizes			Cancel	
Select lower settings to a Select higher settings for	correct performance problems at lov faster performance.	v baud rates.	Defaults	
Receive (Bytes): Transmit (Bytes):	4096 ~ 4096 ~			
BM Options Select lower settings to o	correct response problems.	Miscellaneous Options Serial Enumerator Serial Printer		
Latency Timer (msec):	1 ~	Cancel If Power Off Event On Surprise Removal		
Timeouts	<b>)</b>	Set RTS On Close Disable Modem Ctrl At Startup		
Minimum Read Timeout (	(msec): 0 ~	Enable Selective Suspend Selective Suspend Idle Timeout (secs)	): 5	~



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