

Improving the Communication Latency (Speed)

This document provides a step-by-step guide to setting the Serial Latency Timer for Stahl-Electronics Devices which use a USB Virtual Serial Port on both Windows and Linux operating systems. Follow the instructions carefully to ensure correct configuration.

Issue

The Driver for USB Virtual Serial Ports polls the device for answers in 16ms intervals, also called Latency Timer. Depending on the current state of this Latency Timer an answer to a command might be delayed by up to 16ms, independent of the time the device needs to answer itself. To reduce this Delay, the Latency Timer can be adjusted down to 1ms within the operating system

Setting the Serial Latency Timer in Windows

1. Open the Device Manager, by right-clicking on the Start menu and selecting 'Device Manager'.

2. In the Device Manager, find 'Ports (COM & LPT)' and expand it to see the connected serial device.

3. Right-click on the serial device and select 'Properties'.

4. In the Properties window, navigate to the 'Port Settings' tab and click on the 'Advanced' button.

5. In the Advanced Settings window, locate the 'Latency Timer (msec)' setting. Use the dropdown to select 1ms as latency timer value.

| 🛃 Device Manager — 🗆 🗙 | USB Serial Port (COM8) Properties × | Advanced Settings for COM8 | ? × |
|--|---|--|----------|
| File Action View Help | General Port Settings Driver Details Events | | |
| (≈ ⇒) □ □ □ □ □ □ □ ↓ × ● | | COM Port Number: COM8 ~ | ОК |
| ✓ 븝 LabPC-1 | Bits per second: 9600 ~ | USB Transfer Sizes | Cancel |
| Atmel Audio inputs and outputs | Data bits: 8 | Select lower settings to correct performance problems at low baud rates. | Defaults |
| > 🏺 AVM USB Remote Connection | | Select higher settings for faster performance. | |
| > 🚯 Bluetooth | Parity: None ~ | Receive (Bytes): 4096 V | |
| > 🔜 Computer > 🚍 Disk drives | Stop bits: 1 V | Transmit (Bytes): 4095 V | |
| > la Display adapters | | 4036 V | |
| > PVD/CD-ROM drives | Flow control: None ~ | BM Options Miscellaneous Options | |
| > 🗱 Firmware > 📷 Human Interface Devices | Advanced Restore Defaults | Select lower settings to correct response problems. Serial Enumerator | |
| > The ATA/ATAPI controllers | Advanced Restore Defaults | Serial Printer | |
| > 🚔 Imaging devices | | Latency Timer (msec): 16 V Cancel If Power Off | |
| Keyboards Mice and other pointing devices | | Timeouts Set RTS On Close | |
| > Minite and other pointing devices | | Disable Modern Ctrl At Startup | |
| > 💭 Network adapters | | Minimum Read Timeout (msec): 0 Enable Selective Suspend | |
| Ports (COM & LPT) USB Serial Port (COM8) | | Minimum Write Timeout (msec): 0 V Selective Suspend Idle Timeout (secs | s): 5 ~ |
| > Print queues | OK Cancel | | |
| > 🛱 Printers | | | |
| Processors Processors Processors | | | |
| > Im Sensors | | | |
| > 📲 Software components 🗸 🗸 | | | |
| | | | |
| | | | |

6. Once the value is set, click 'OK' to apply the settings.



Setting the Serial Latency Timer in Linux

1. Open a terminal window.

2. To check the current latency timer setting for the serial device, use the following command:

sudo cat /sys/bus/usb-serial/devices/ttyUSB0/latency_timer

Replace 'ttyUSBO' with the appropriate device name if necessary.

3. To set the latency timer to 1ms, use the following command:

sudo echo 1 > /sys/bus/usb-serial/devices/ttyUSB0/latency_timer

Again, replace 'ttyUSB0' with the correct device name.

4. You can verify the change by re-running the first command to check the latency timer value.

5. Note: To make this change permanent across reboots, you may need to create a udev rule or add the command to your system's startup scripts.