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XID Test Procedures

Operating systems keep increasing in complexity and adding layers of software such as device drivers between the application program and the actual device that one is trying to communicate with. This may introduce some timing issues. Additional causes for delay are peripheral devices such as USB to serial port adapters.

XID devices include two test procedures to help determine if such timing issues exist:

- The **Round Trip** procedure sends data back and forth between the application program and the XID device in an attempt to determine if there are any delays round trip delays.
- Activating the **Stream** procedure makes the XID device send a number of bytes to the computer at 1 millisecond interval for a duration of 500 milliseconds, and then every 2 millisecond interval for 500 milliseconds, and so forth. It keeps increasing the interval until it reaches 25 milliseconds. The total duration of this test procedure is always 12.5 seconds (25 times 500 milliseconds). The receiving program attempts to time the arrival of these bytes and look for delays.

Please note that this portion of the XID firmware has not been tested and should not be used for now.

Initiating the Test Procedures

The test procedures are started using the following commands:

Command	Send Bytes	What Happens:
Start Round Trip Procedure	e4	The XID device sends the character X to the host computer and resets an internal timer. The host computer reads this byte and immediately “echoes” it back to the XID device. The XID device measures how long it took to receive back the X byte and then sends to the host the bytes PT followed by two bytes indicating the delay in milliseconds.
Start Stream Procedure	e6	The XID device sends a stream of bytes (hex value AA) starting at a 1 millisecond interval and increasing steadily to 25 millisecond interval every 500 milliseconds.