PCScope User

Introduction

Purpose

PC Scope User is a tool for testing and measuring gimbal performance, as well as controlling basic gimbal functions. It supports sending movement commands, setting limits, initialization commands and sending raw TASS commands. In addition a virtual scope allows for detailed monitoring and measurement of gimbal performance.

Input/Output

PCScope User takes input from both the user and a servo gimbal attached through a serial port (RS232 or RS422), and sends commands to the gimbal back over the same port. Error messages are reported to the user in a diagnostic text box.
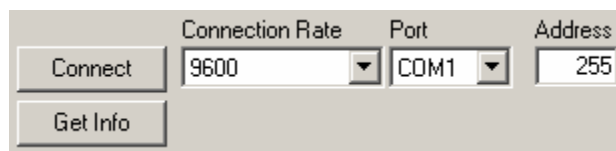
Implementation Details

PC Scope User was written in MS Visual C++ 6.0.

Operational Overview

Upon starting PCScope User the main window is displayed and the scope window is minimized.

Connecting to the Gimbal

To connect to an attached gimbal, check the baud rate, serial port number and device address, then click the "Connect" button. The default baud rate is for the gimbal as shipped and the default device address is set to broadcast to all attached devices. Once connected, PCScope User will update the display with information about the gimbal, including serial number, movement limits and control gains.

To change the connection speed choose a new baud rate from the drop down menu, then click the "Get Info" button.

Setting Limits

After connecting to a gimbal PCScope Light will display the Acceleration, Movement Rate and Positional limits for the gimbal. It is possible to save the limits to the gimbal by entering the new desired limits and selecting "Save Limits".
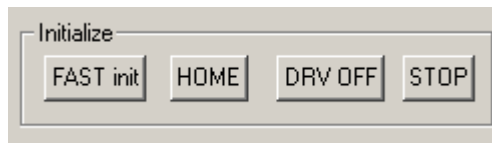
Initializing the Gimbal

To initialize the gimbal after power up click the "FAST init" button. The gimbal will run through a short initialization sequence and stop near the home position. When initializing the gimbal first moves down and left looking for the home switch. If it gimbal is positioned up and to the right of the home position the initialization sequence will take less time. Clicking the "HOME" button after initialization will return the gimbal to the home position.
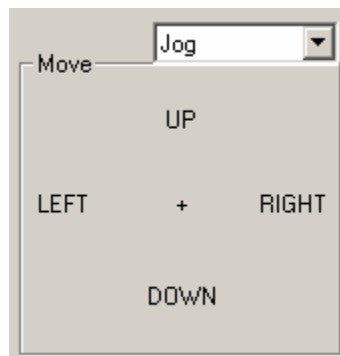
Moving the Gimbal with the Virtual Joystick

A virtual joystick is provided for movement testing. Clicking the mouse around the UP, DOWN, LEFT and RIGHT controls will move the gimbal in the appropriate directions.
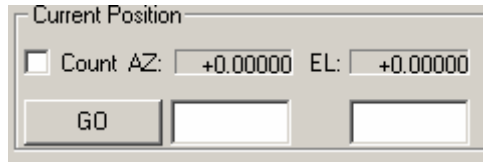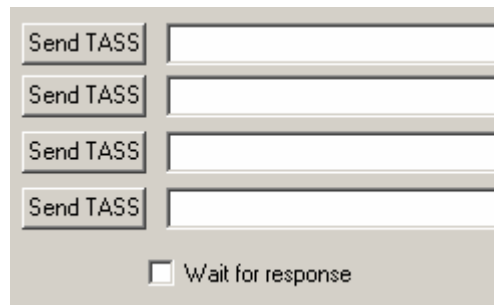
Moving the Gimbal to a Specific Location

The gimbal can be sent to a specific location by entering the desired position in degrees and clicking the "GO" button. The current position of the gimbal is displayed above the desired position input. Position information can be displayed in either degrees or encoder counts by toggling the "Count" checkbox.

Sending TASS Commands

If it is necessary to send TASS commands this can be done using the "Send TASS" buttons. If a response from the gimbal is expected, check the "Wait for response" box. Four "Send TASS" buttons have been provided to allow multiple TASS commands to be readied for use.