



PE Kit Tools: Propeller <--> PC Terminal Communication

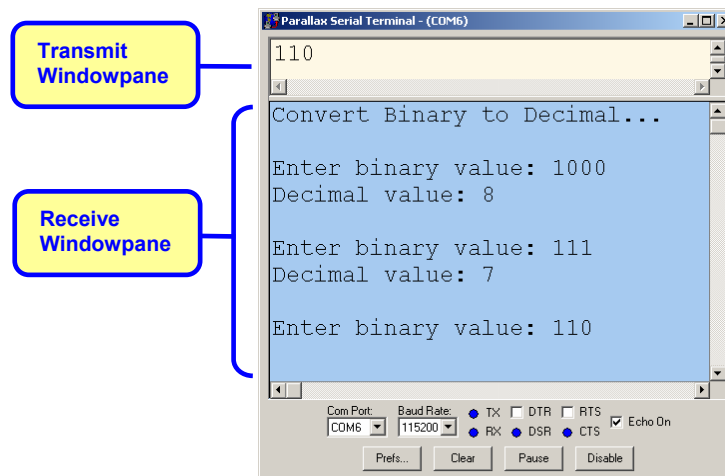
The Parallax Serial Terminal is a useful tool for testing code and displaying messages that include status indicators, variable values, I/O pin states and more. It is also useful for sending messages that choose between different options or set variable values.

This article introduces “Hello Parallax Serial Terminal.spin”, an object to keep handy for adding Parallax Serial Terminal functionality to your applications.

Parallax Serial Terminal

When everything is configured correctly, the Parallax Serial Terminal forwards characters you type into its transmit windowpane to the Propeller chip and displays messages from the Propeller chip in its receive windowpane.

Figure 1: Parallax Serial Terminal



Download and Install

- ✓ If you have not already done so, download the Parallax Serial Terminal from www.parallax.com → Propeller → Downloads & Articles.
- ✓ Unzip PST.exe to a folder that is easy to get to while working on Propeller projects. Alternately, unzip it to C:\Program Files\Parallax Inc\Propeller Tool... and create a shortcut to it next to your Propeller Tool shortcut.

Test Parallax Serial Terminal <--> Propeller Chip Communication

Before incorporating it into your applications, start by testing a simple, pre-written application. In this case, we'll use Hello FullDuplexSerial.spin, an application that converts binary numbers you enter into the Parallax Serial Terminal's transmit windowpane and displays the decimal equivalents in the receive windowpane. (See Figure 1)

- ✓ Download and unzip “PE Kit Tools - Propeller <-> PC Terminal Communication.zip”. It’s located at forums.parallax.com → Propeller Chip → Propeller Education Kit Labs.
- ✓ Open “Hello FullDuplex SerialPlus.spin” with the Propeller Tool software.
- ✓ Use the Propeller Tool software's F7 function to Determine the COM port your Propeller’s programming tool is connected to.
- ✓ Open the Parallax Serial Terminal (Run PST.exe)
- ✓ Set Parallax Serial Terminal to the Propeller programming tool’s COM Port with a baud rate of 115200.
- ✓ Press F11 in the Propeller tool to load the test code into the Propeller chip’s EEPROM and start the application.
- ✓ Immediately click the Parallax Serial Terminal's Connect button. Do not wait until the program is finished downloading. The Parallax Serial terminal will wait for the download to finish before it connects to the Com Port.
- ✓ When the Parallax Serial Terminal displays the “Binary value:” prompt, type in a string of 1s and 0s into the transmit windowpane (see Figure 1).
- ✓ When you press enter, the receive windowpane should display the decimal equivalent of the binary value you entered.

Use in Your Application for Testing and Debugging

Hello FullDuplexSerialPlus.spin is also a good program for starting test applications as well as incorporating into applications that need some light debugging. All it takes is two steps: (1) Make sure FullDuplexSerialPlus is in the same folder with your application. (2) Copy the code below (from Hello FullDuplexSerialPlus.spin) into your application. You will then have all it’s methods at your disposal for exchanging information with the Parallax Serial Terminal.

CON

```
_clkmode = xtal1 + pll16x  
_xinfreq = 5_000_000
```

OBJ

```
term : "FullDuplexSerialPlus"
```

PUB go | val, index

```
term.StartPST(115200)
```

The FullDuplexSerialPlus object has methods to handle most common message exchange tasks with the Parallax Serial terminal. Some examples include:

- Send/receive characters and strings
- Send/receive decimal, binary, or hexadecimal integers
- Wait until a string is received or a timeout elapses
- Position the cursor, clear the screen, send the cursor to the top-left home position.
- Transmit Parallax Serial Terminal control characters

All of these features are explained in the FullDuplexSerialPlus object’s documentation comments.

- ✓ Open FullDuplexSerialPlus with the Propeller Tool software
- ✓ Click the documentation radio button.
- ✓ Examine the following sections:
 - Object “FullDuplexSerialPlus” Interface

- Parallax Serial Terminal Control Character Constants
- Method explanations from StartPST downwards.

More Examples

The Objects Lab in Propeller Education Kit Labs: Fundamentals includes lots of examples that use the Parallax Serial Terminal. It's available for PDF + zipped source code download from www.parallax.com → Propeller → Downloads & Articles.