Parallax Propellent

The Parallax Propellent software is a Windows-based tool for compiling and downloading to the Parallax Propeller chip. Propellent is available as both a library (Propellent.dll) and as an executable (Propellent.exe).

- The Propellent Library (DLL) is for software developers to link into applications enabling immediate support of the Propeller using the same functions as the Parallax-made Propeller Tool development software.
- The Propellent Executable (EXE) is a program that includes the Propellent Library within it and provides many of the same functions to anyone wishing for command-line support of the Propeller chip.

This document is written for the Propellent Executable.   For details about the Propellent Library, see the "Propellent Library.pdf" document. For more information on the Parallax Propeller chip and tools, please visit http://www.parallax.com/propeller

Features of the Propellent Executable:

- Small, command-line driven application that includes the Propellent Library inside of it; there's no need to have the Propellent.dll file in order to use Propellent.exe.
- Compiles and downloads Propeller source (.spin), and downloads Propeller Application images (.binary or .eeprom) to Propeller chips.
- Allows saving of compiled source as a binary or EEPROM image.
- Includes the Propeller Tool's multi-threaded serial port handling and Propeller chip communication functionality.
- Includes the Propeller Tool's dialogs for indicating serial port access and download progress as well as the user-customizable serial port search options.
- Stores user-modified preferences in the Windows Registry for use in future sessions; Source Library path, Reset Signal (DTR, RTS, or both), and Serial Search Method (AUTO or specific port).
- Supports Win2K (and later) operating systems.

Propellent Executable Command-Line Options

Syntax Definitions:

Propellent.exe　　**{/LIB** *lib_path***}**　**{/PORT (** AUTO **|** COM# **)}**　**{/SIGNAL (** DTR **|** RTS **|** BOTH **)}**　**{/EEPROM}**　*propeller_file*	– Load source/image and download to Propeller chip.
Propellent.exe　　**/COMPILE**　**{/LIB** *lib_path***}**　**{(/SAVEBINARY | /SAVEEEPROM)}**　*source_file*	– Load source, compile, and optionally save image.
Propellent.exe　　**/EDITPORTS**	– Show the Serial Port Search List to allow editing.
Propellent.exe　　**/GET (/LIB , /PORT , /SIGNAL)**	– Return current persistent option(s).
Propellent.exe　　**/SET (/LIB** *lib_path* **, /PORT (** AUTO **|** COM# **) , /SIGNAL (** DTR **|** RTS **|** BOTH **))**	– Set persistent option(s).
Propellent.exe　　**/ID {/PORT (** AUTO **|** COM# **)}**　**{/SIGNAL (** DTR **|** RTS **|** BOTH **)}**	– Identify the Propeller chip.
Propellent.exe　　**/VERSION**	– Display version of Propellent library/executable.
Propellent.exe　　**/HELP**	– Display this information.

Syntax Elements:

{ }	– Denotes optional parameters; do not type the braces.
(|)	– Denotes mutually exclusive parameters; exactly one item must be specified; do not type the parentheses or pipe symbol.
(,)	– Denotes necessary parameter(s); one or more items must be specified; do not type the parentheses or comma symbol.

lib_path	– Specifies a path to Propeller library files.
propeller_file	– Specifies Propeller source or image file (.spin, .binary, or .eeprom) to be loaded, compiled if necessary, and downloaded to the Propeller chip.
source_file	– Specifies Propeller source file (.spin) to be loaded and compiled.

/COMPILE	– Compile and return error, if any.
/EDITPORTS	– Display the Serial Port Search List for possible editing. Port filtering rules and search order may be modified. Settings are saved in between sessions.
/EEPROM	– Download to Propeller chip's EEPROM in addition to its RAM.
/GET	– Retrieve options of all the switches that follow; see /LIB, /PORT, and /SIGNAL. Operates globally on all switches on the command-line.

/HELP   – Display command-line help (this information). /? is equivalent.
/ID   – Identify a Propeller chip connected to a serial port.
/LIB   – Refers to the Propeller source library path.
        /LIB *lib_path*   – Sets the path to lib_path; valid for this session only.
        /GET /LIB   – Returns the current path; stored in between sessions.
        /SET /LIB *lib_path* – Sets the path to lib_path; stored in between sessions.
/PORT   – Refers to the serial port search method.
        /PORT (AUTO | COM# **)**   – Sets the port search method to AUTO or COM#; valid for this session only.
        /GET /PORT   – Returns the current port search method; stored in between sessions.
        /SET /PORT (AUTO | COM# **)** – Sets the port search method to AUTO or COM#; stored in between sessions.
         – AUTO (default) indicates to search all available serial ports (according to port filtering and search order rules; see /EDITPORTS) for a Propeller chip.
         – COM# indicates to search a specific serial port for a Propeller chip, ignoring all others. # must be one or more numeric digits.
/SAVEBINARY   – Save successfully compiled source code as a binary file.
/SAVEEEPROM   – Save successfully compiled source code as an EEPROM file.
/SET   – Set options of all the switches that follow; see /LIB, /PORT, and /SIGNAL. Operates globally on all switches on the command-line.
/SIGNAL   – Refers to the serial port signal used to reset the Propeller chip.
        /SIGNAL (DTR | RTS | BOTH **)**   – Sets the reset signal to DTR, RTS, or both; valid for this session only.
        /GET /SIGNAL   – Returns the current reset signal; stored in between sessions.
        /SET /SIGNAL (DTR | RTS | BOTH **)** – Sets the reset signal to DTR, RTS, or both; stored in between sessions.
         – DTR (default) indicates to reset the Propeller chip using the serial port's DTR signal.
         – RTS indicates to reset the Propeller chip using the serial port's RTS signal.
         – BOTH indicates to reset the Propeller chip using the serial port's DTR and RTS signals.
/VERSION   – Retrieve version of the Propellent library and this executable.

Examples:

- To search for and identify a Propeller chip connected to the system:
  Propellent.exe /id

- To download image file "Graphics_Demo.binary" to Propeller RAM from the current folder using current settings:
  Propellent.exe Graphics_Demo.binary

- To compile and download application "Graphics_Palette.spin" to Propeller's RAM and EEPROM from the C:\Temp folder using current settings:
  Propellent.exe /eeprom C:\Temp\Graphics_Palette.spin

- To compile and download application "Inductor Demo.spin" to Propeller RAM (on serial port 2) from the default library examples folder:
  Propellent.exe /port COM2 "C:\Program Files\Parallax Inc\Propeller Tool v1.1\Examples\Library\Inductor Demo.spin"

- To compile and save an EEPROM image of the above application:
  Propellent.exe /compile /saveeeprom "C:\Program Files\Parallax Inc\Propeller Tool v1.1\Examples\Library\Inductor Demo.spin"

- To see the current persistent settings for Propeller Source Library and Serial Port Search Method:
  Propellent.exe /get /lib /port

- To change the persistent settings for Serial Port Search Method and Reset Signal to COM25 and BOTH, respectively:
  Propellent.exe /set /port COM25 **/signal** BOTH

- To view the current system serial ports and modify search order and port filtering rules:
    Propellent.exe /editports