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 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.
- 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