Propeller 1 and 2 Binary File Graphical Downloader Request for Community Input and Design

Background

Parallax designers put the Propeller 1 and 2 Multicore Microcontrollers into products which are deployed at their customer locations. Examples could include a bicycle lane traffic counter, an environmental sensor in the forest or a lake, or a piece of equipment on a factory floor. The designer often has the need to update the firmware and asks the customer to upload a binary file to a Propeller mounted on a PCB. The designs often have a four-pin connector for a Prop Plug or a micro USB connector (FLiP Module or P2 Edge).

The end user needs a simple method of uploading a new binary file to the Propeller EEPROM. Current solutions require using the Propeller Tool, Propellent (command line), PropLoader or other community programming tools. These methods are sometimes too technical for field staff, involve too many options and installation, and may require sharing the designer's source code.

We would like to create a stand-alone graphical packaging tool which allows the source code developer to package their binary source into a graphical distributable .exe (or equivalent) for their end user. The single-file distributable would operate on Windows, Mac and Linux operating systems.The long goal is to have this functionality built into popular programming tools (like FlexProp, VSC, and Spin Tools IDE).

All distributables would [ideally] be signed such that they will not trigger OS or virus warnings.

Features

- Create a single .exe "Propeller Firmware Loader" with simple installation process
- Graphical downloader allows binary files to be downloaded to the target system, providing download task bar and success confirmation message
- Runs on Mac, Windows and Linux
- Includes Parallax logo in the Help system, with links to our support e-mail and forums
- Open source, fully, from top to bottom with MIT license
- Based on PropLoader, which provides Propeller 1 and 2 code loading over USB and WiFi. Latest C sources here: https://github.com/totalspectrum/PropLoader
- Available on OBEX as source code, hosted on Parallax.com web site

Outline of Graphical "Propeller Package Creation Tool" (PPCT) functionality

1. Upload a binary (either .bin or .binary file extension)
2. Auto-detects P1 or P2 binary
3. Prompts user for some options appropriate to the customer
   a. Load to EEPROM / Load to RAM (default tick load to EEPROM)
   b. Allow WiFi programming - checkbox. (The functionality of WiFi programming could follow in a future revision of the software).
   c. Allow USB programming - checkbox
   d. Allow automatic programming attempt - checkbox (if ticked, no user interaction- just search for Propeller and upload if only one found)
   e. If multiple ports found, will have to ask the user which one
   f. Allow user to enter/select an IP and/or USB port (instead of OR as well as auto search) - checkbox (note- this should happen by default if automatic unticked- the port must be chosen somewhere!)
   g. After searching, or manual IP/COM port setup, prompt the user to confirm the port (and thus Propeller firmware upgrade action) before upload? - checkbox
   h. Text box with default success or failure message
   i. Option to upload customer logo (optional, could allow developer to brand this as their own)
   j. Text box for supplementary info, empty by default. Example, could add customer service contact info.
   k. Button - Download signed Windows version "Propeller Firmware Loader"
   l. Button - Download signed Linux version…
   m. Button - Download signed iOS version…
   n. Button - Download ALL (or maybe tick boxes to choose which to download)

Schedule

Community-created system by March 2025. This can be accomplished by a single developer, or several, and the Parallax forums should be used for the process. Payment from Parallax is a possibility, too.