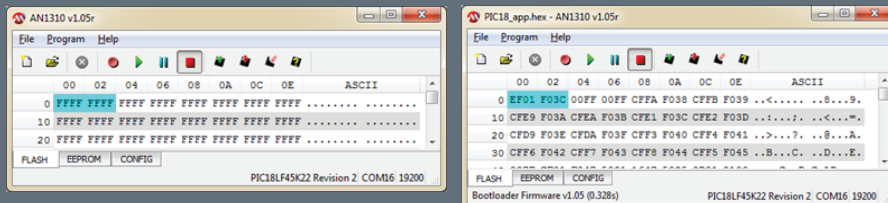


## Downloading to the PIC18 chip (ARC PRO)

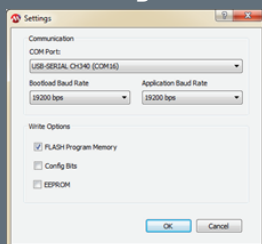
- A USB to serial cable to be plugged into the Pro and the PC
- The app "AN1310ui.exe" to be running on Windows
- See the next section for the program settings (Menu: Program->Settings...) and make sure they match where appropriate.
- The "break/reset" button (cyan pause symbol) to be pressed in on the apps toolbar
- The user to connect to the Scalextric BLE chip using Light Blue
- The user to write "05" to the "Command" characteristic on the BLE chip . This resets the PIC18 CPU and incidentally clears the "short circuit" status (if the BLE chip is red instead of green). Since the break/reset icon is pressed, the PIC18 chip will go into bootloader mode.
- The user to click the "bootloader mode" icon ( red square) to get into bootloader mode. The app should show the version of the bootloader in the status bar. If it gives an error message ("Bootloader not found.") then the PIC18 was not in bootloader mode.
- The user to load the firmware "PIC18\_app.hex" using the "File->Open..." menu



- The user to write the firmware using the "Write device" icon this will take a few seconds.
- The user to run the app firmware using the "Run" button (green play icon)
- You can test that the firmware is running by hearing the (big orange) relay switch when you switch between analogue and digital modes using the switch on the left of the circuit board.

## Program Settings

These are the "Program Setting" dialog on the "Program->Settings" for the Downloading to the PIC18 chip (ARC PRO).



- COM Port: "USB-SERIAL CH340 (COM16)" - it might be a different COM port on other computers, but CH340 is the chipset of the USB-to-serial chip on the Arc Pro. This installed easily on Windows 7 (64) installation, but other systems might need drivers.
- Bootload baud rate: 19200 bps
- Application baud rate: 19200 bps
- Write options: (yes) Flash program memory, (no) Config bits, (no) EEPROM.

## LightBlue

You can use the app "LightBlue" from Punchthrough to send the "reset" command to the PIC18.



- Load up the LightBlue App
- Connect to the Scalextric ARC peripheral by clicking on it
- Scroll down to the "Command" characteristic of service 3B08
- Click on "Write New Value"
- Enter the value "05" (zero five) which is the command to reset the PIC18. (and click Done)
- The PIC18 should now reset. There may be a slight click from the orange relay.

