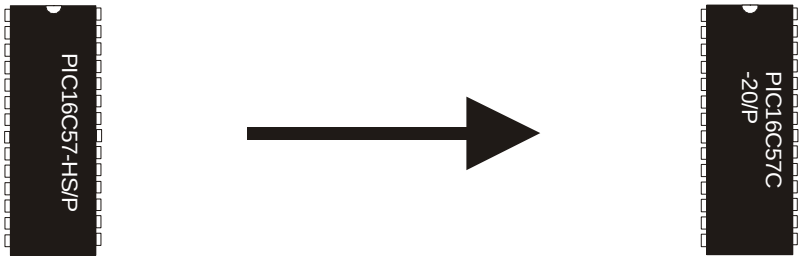
Notice of Change in BS2 Interpreter Chip Hardware

Last year (2000), Microchip Technology, Inc. began producing a new version of the PIC16C57 microcontroller that Parallax, Inc. uses for the BASIC Stamp 2 Interpreter Chip (PBASIC2/P, PBASIC2/SO and PBASIC2/SS). Microchip has labeled this new version "Rev. C".

Due to indications that the previous version of this microcontroller would be discontinued, Parallax, Inc. began producing BASIC Stamp 2 modules and OEM units using the new "Rev. C" PIC chips.

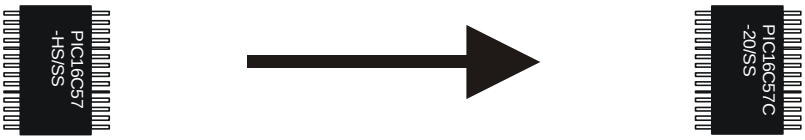
This document describes the necessary change to the BASIC Stamp 2 circuitry to support this chip and is intended for use by any customer who is currently, or plans on, using BS2 Interpreters for the purpose of building their own BS2 circuit. **For customers who are only using BS2-IC modules or OEMBS2 modules, this document, and the issues pertaining to this change, may be ignored.**

The diagram below shows the two most commonly used package types of the BS2 Interpreter chip and indicates how to determine which chip you may have, based on the part number.



Old BS2 Firmware
Chip (DIP package)
Microchip # PIC16C57-HS/P
Parallax # PBASIC2/P

New BS2 Firmware
Chip (DIP package)
Microchip # PIC16C57C-20/P
Parallax # PBASIC2C/P



Old BS2 Firmware
Chip (SSOP package)
Microchip # PIC16C57-HS/SS
Parallax # PBASIC2/SS

New BS2 Firmware
Chip (SSOP package)
Microchip # PIC16C57C-20/SS
Parallax # PBASIC2C/SS

Note: Parallax # reflects the “programmed” parts (as opposed to “unprogrammed” PIC parts).

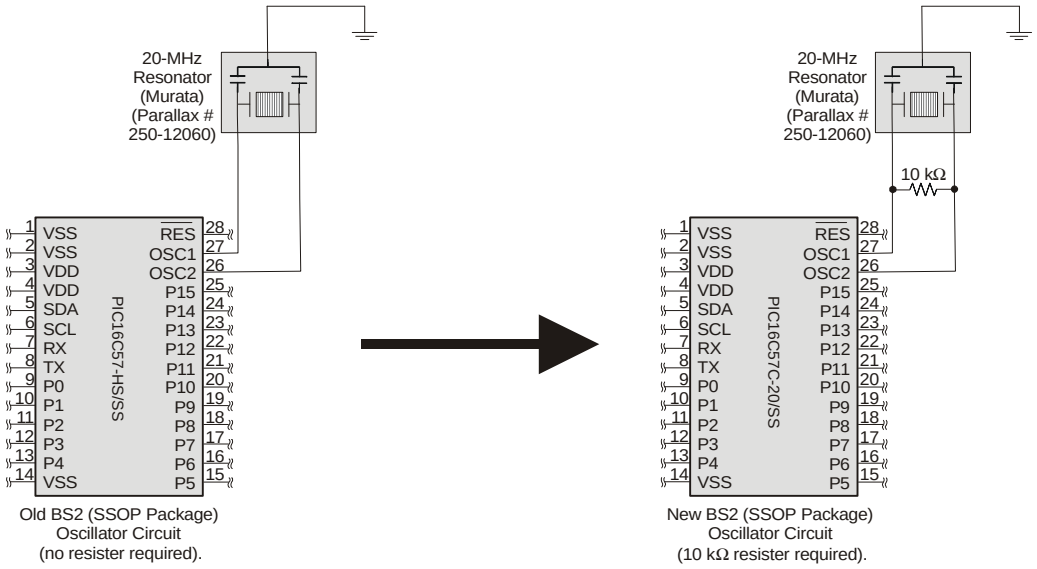
Parallax, Inc. cannot guarantee how long the older chips will be available and suggests you make changes to your products as soon as possible to support the new Interpreter chips. **When ordering BASIC Stamp 2 Interpreter chips, please request the appropriate part: PBASIC2/P or PBASIC2/SS (for the old chips, soon to be discontinued) and PBASIC2C/P or PBASIC2C/SS (for the new chips).**

The pin configuration for the new chips (PIC16C57C) is exactly the same as the corresponding package-type of the old chip (PIC16C57).

Parallax, Inc. has tested the new PBASIC Interpreter chip and has found only one difference; in circuits where the power supply voltage rises or falls slowly (ie: in circuits with a high capacitance across power and ground) the Interpreter chip may begin to run at a harmonic frequency lower than 20 mHz. **To resolve this, a 10 kW resister is required across the oscillator pins of the PBASIC Interpreter chip to stabilize the clock source.** The required change is indicated in the diagram below.

This extra resister is already installed on all new BS2-IC modules and OEMBS2 boards which use the PIC16C57C microcontroller.

The diagram below only shows the required oscillator circuitry. The other pin connects are left out for simplicity.



Note: 10 kΩ resister across oscillator pins is optimal for the Murata resonators (with integral capacitors) that Parallax, Inc. recommends. If a different resonator or other clock source is used, optimal resister size will likely be different.

The pinouts for DIP and SOIC package-types are different than shown here, but the oscillator circuit is the same (ie: resonator still connects to the PIC chip's OSC1 and OSC2 pins and still requires 10 kΩ resister across oscillator pins).