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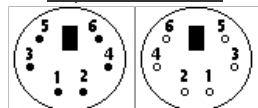
PS/2 Keyboard Interface

[Jump To: Part 4: Theory of Operation](#)[Post](#)

PS/2 Communication Theory

This section will go through the theory of the specific connectors we will be using and their associated pinouts, as well as an example data output from a PS/2 keyboard device. PS/2 is a serial protocol and only uses 2 pins to communicate information. The data pin is actually bi-directional, but we will only consider the data-output from the PS/2 device.

PS/2 Connectors

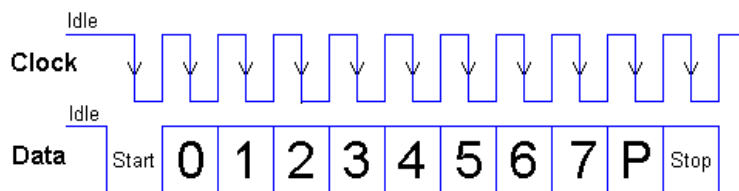


6-pin Mini-DIN (PS/2):

- 1 - Data
- 2 - Not Implemented
- 3 - Ground
- 4 - Vcc (+5V)
- 5 - Clock
- 6 - Not Implemented

The standard pinout for a mini-din or PS/2 port can be seen above for both the male and female connectors. Typically the male connector is on the keyboard/mouse or whatever PS/2 device you have and the female connector will be on the receiving device (laptop/desktop) which is the PIC 18F452 in our case.

PS/2 Data Output



The timing diagram seen above is the standard way for any PS/2 device to output data. It follows a specific sequence everytime:

- [1] Data Bit Goes Low
- [2] Clock Goes Low
- [3] Data Kept Low (Start Bit)
- [4] Clock Goes High
- [5] 8 Data Bits Clocked Out
- [6] Parity Data Bit Kept High
- [7] 1 Clock Cycle
- [8] Stop Data Bit Kept High
- [9] 1 Clock Cycle

The main points to catch from the timing diagram is that: [1] for every 8 bits of data output, there is a start and a stop bit and [2] all data output is valid only on a falling clock edge.

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