Circuit Description

The original Coco2 keboard is of a simple matrix design with 55 keys/functions and the Coco responded when a key was released – except the Shift key which was required to be pressed whenever a “shifted” function was required. Its keycodes are unique being row and column. Even the PS2 keyboard uses serial communication thus some kind of code changer is required to to convert the serial codes of the PS2 keyboard to emulate the matrix keyboard signals needed by the Coco.

The ‘schematic.pdf’ file shows the circuit I designed to fit this rquirement. The connector at the top of the diagram connects to a Parallax Stamp StackII whitch I programmed to do the code conversion. (The Stamp StackII I used was in my spare parts box.) The two connectors on the right of the circuit connect to the Coco keyboard connector – I removed this connector from the Coco main board and soldered wires directly to it. The upper left connector is where the PS2 keyboard plugs in and below it is the +5Volt power connection which I linked in to the Coco power supply.

The six integrated circuits on the left of the diagram do the actual decoding of the PS2 scan codes and feed their output to the Stamp StackII as a 7 bit parallel word. The staps StackII program the outputs two binary coded bytes to the circuitrhy on nthe right which emulates the old keyboard matrix.

There are a few keys that do not match the PS2 keyboard or are not present (@, clear, break etc.) and some that do not match up with today’s keyboard layout (Brackets key etc.). These functions I arbitrarily assigned to various keys not used for other purposes but they can be changed in the Stamp StackII program by reassigning the scan codes.

This project gave me a working replacement keyboard for my old Coco2. Luck for me the parts – except for the circuit board itself – all came from my spares box and the final result is that my Coco2 can now be used for all its original functions albeit with more actual computing power in the new keyboard than in the Coco itself!