

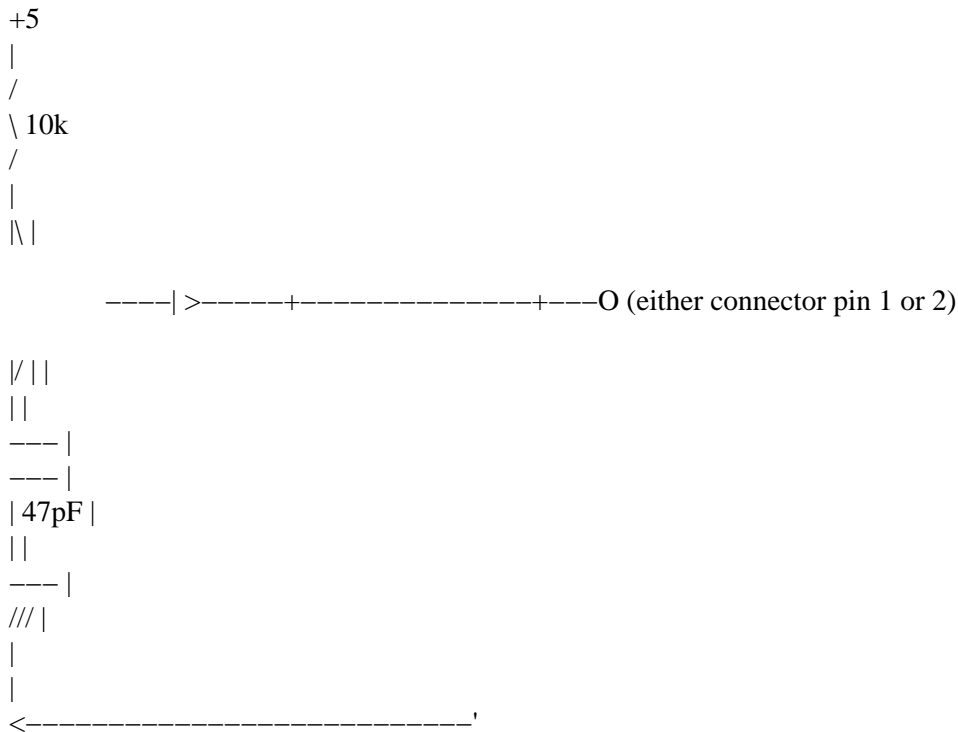
# Re: PIC, Keyboard, and USART

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I assume that you are talking about PC/AT keyboards here (or simply known as "AT keyboards.") I think the original PC keyboard was incompatible with the AT keyboard, but that all clones since that advent are now following the AT keyboard arrangement and I doubt you could even find a PC (non-AT) keyboard these days. Of course, I have long since forgotten, for sure. Do check on what I'm saying.

Regarding AT keyboards, there is a very detailed electrical spec of the hardware to be found in the IBM Technical Reference, Personal Computer AT set (4 volume set, which I will protect with my life!) That spec is the schematic itself, on page 17 of 22. They use '07 open-collector drivers tied to an RC filter, with 10k and 47pF.



That spells out the exact details of both pin 1 and pin 2. You should be able to note that the IBM PC can use either line is input or output. There is a reason for that design. If you intend to operate the keyboard correctly, you will need to mimic it.

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You will also need to fully understand how the keyboard is properly operated from the PC. It is discussed on pages 1-31 to 1-44 and all of chapter 4 of that Technical Reference I mentioned. But in particular there is the capability to observe aborts in transmission and to deal with conflicts in securing the interface from one side or the other.

I think that the technical details on the AT keyboard were fairly well considered by IBM before laying them out and the proper operation of the interface isn't entirely trivial, if you plan to get it right.

There are very specific timing issues you need to be aware of. Have you searched the web for all this info? You should be aware of something called the "BAT" and the power up exchanges, graceful operation in the face of communication aborts, how to deal with moments when both you and the keyboard decide to talk to each other, etc.

Jon

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