

Re: Is microprocessor an integrated circuit???

Source: <http://sci.tech-archive.net/Archive/sci.electronics.design/2005-01/8692.html>

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"Bradley1234" (someone@yahoo.com) writes:

> *Translates to some 10 bit code thing? So you now admit its never, ever*
> *claiming to be a 10 bit byte?*

>

> *The data remains an 8 bit byte, since universally the obvious definition for*
> *byte is an undisputed 8 bit width.*

>

The trick is to use a source that is old enough not to be corrupted by more recent and common useage of the word.

Take, for instance, "The Dictionary of Electronics" by Rudolph Graf, with a copyright of 1972. Mine has a Radio Shack imprint, but the book was published by Howard Sams.

"Byte – 1. A single group of bits processed together (in parallel). It can consist of a variable number of bits. 2. A sequence of adjacent binary digits, usually shorter than a word, operated on as a single unit."

Just to put that in context,

"Word – 1. A group of characters occupying one storage location in a computer. It is treated by the computer circuits as an entity, by the control unit as an instruction, and by the arithmetic unit as a quantity."

> *Any concept of how data is transferred serially? There are zillions of*
> *schemes that use start bits, stop bits, parity, control, bamboo bits, endian*
> *ness bits, it becomes extra bits to help establish framing to deliver the 8*
> *bit bytes.*

>

>

No, serial data is always defined in terms of how many data bits, and the start and stop were just that. So a 5bit teletype code was treated as a 5-bit code, after all there weren't enough combinations for a full character set, but there were extra bits in order to transmit those five bits correctly. Same with 8-bit ASCII.

Here's a classic example, the PDP-8. Used 12 bits per address. You'd toss bits away, or use odd compression to keep 8-bit ASCII characters

in that memory. But you could only access each memory location as 12bit bytes.

Before microprocessors, ie CPUs in an IC, bytes were all kinds of widths. Of course, there were relatively few computers back then. When microprocessors took off, their ALUs were mostly 8-bits wide (with of course a few 4-bit to begin with, and the odd exception like the INtersil 6100 that was a microprocessor version of the PDP-8, so it had a 12bit ALU). Hence bytes were commonly explained as being 8bits wide, since that was what was being talked about, and a lot of computers were 8bits wide. And of course, when later generations were added, they were in multiples of 8bits, so a byte could remain 8bits (since most of those could access 8bits at a time.)

Michael