

Re: homebrew computer – where to start?

Source: <http://sci.tech–archive.net/Archive/sci.electronics.basics/2005–09/msg00109.html>

- *From:* "petrus bitbyter" <pieterkraltlaatditweg@xxxxxxxxxxxxxxxxxxxxx>
 - *Date:* Sat, 3 Sep 2005 20:10:11 +0200
-

<racter@xxxxxxxx> schreef in bericht
news:1125732804.697587.191090@xx

> hi,
>
> i've been a dedicated computer nerd for about twelve years now. i
> started with a cast-off tandy "laptop" that ran BASIC and have been
> hacking ever since, through 386/486/pentium/etc.
>
> now i find myself much more interested in computer systems that appear
> historically before my introduction to computers, and i'd really like
> to get to know these older computing methodologies more intimately.
> i'd like to try to build a computer from scratch – build my own
> processor, etc. – to gain a greater familiarity with the underlying
> technology.
>
> so where do i start? poking around on the internet, all i can seem to
> find is vendors trying to sell "homebrew" computer parts which
> basically involves piecing together readymade components.
>
> i know that the definition of "computer" covers a pretty wide continuum
> right now, but what i'm interested in building is just the basic
> machine: an electronic device that runs programs, whether it has a
> display, printer, or just an array of LEDs as its output.
>
> maybe someone knows a book or something that covers this material.
>
> thanks for your time!
>
> best,
> jake
>

Well, Jake,

A starting point is a matter of choice. Some early calculating machines used cogwheels and functioned pure mechanically. The first electronic computers used electron tubes by the dozens and required more power than your mains

Re: homebrew computer – where to start?

connection can provide. The first computer I worked on was build with discrete transistors, ferrite cores and lots of wire all packed in five 19" rack enclosures higher then a mans length. The first one I build for myself has a Z80 processor on 4MHz, 2k of RAM and 2k of EPROM. The latter contained a monitor program derived from the NASCOM. I build, also from scratch, a separate I/O card for it containing a UART that communicated with a dumb terminal. The next step was an I/O card that could write to – and read from cassette tape. Still works when I hook up a PC running a terminal emulator. At about the same time you could buy Apples or one of its clones. You could buy an empty board and fill it with components. Some time later you could buy empty PC– and peripheral boards to do the same. AFAIK the last computer building that required soldering. These days you can assemble your own machine even without a screwdriver. IMHO you can't go back but to the first microprocessors like the 8085, Z80, 6800, 6502 and some others I don't know well. Some stuff, like the Z80, is still available. Don't know about the others. Nevertheless, I don't think this is the way to go. The old times will not come back you know. I advise to look around in the world of microcontrollers. They have processor, RAM, ROM and I/O in one package but fiddling with the bits, assembler programming and even soldering are still required. There is a wide range of them from six pins SOT–23 to forty and more pins DIP all with eight bits processors. The latter at least as powerfull as the old Z80 and its contemporaries. If you want more there are much more powerfull sixteen bits micros available as well. You'll find more info then you ever can read on the web but you still can do plenty of things others have not done before.

petrus bitbyter

- **Follow-Ups:**

- ◆ **Re: homebrew computer – where to start?**

◇ From: Jonathan Kirwan

- **References:**

- ◆ **homebrew computer – where to start?**

◇ From: racter

- Prev by Date: **Re: neg voltage relay driver (for an idiot)**
- Next by Date: **Re: Hitachi TV power problem**
- Previous by thread: **Re: homebrew computer – where to start?**
- Next by thread: **Re: homebrew computer – where to start?**
- Index(es):
 - ◆ **Date**
 - ◆ **Thread**