



Chip Chart

Microprocessors have evolved from two main sources: those stemming from the original Intel microprocessors and those from Motorola's rival 6800 chip. This chart shows the way the chips developed, as well as some of the machines in which they have been used. Many of the less well-known chips appear in the less popular micros. The Apple III is perhaps the only business machine to use a 6502 processor. The Olivetti M20 is the only general-purpose micro to use a Z8000. In both cases, the unusual choice of microprocessor and its consequent lack of software has inhibited the success of the machine. Some immensely successful machines, like the IBM PC, have the effect of making a chip very popular

Motorola



6800: The 8080's rival, with similar capabilities but a completely different design philosophy. Two schools developed: those who preferred the Intel 8080 approach and those who preferred Motorola's 6800 way of working

MOS Technology



Commodore PET

6502: MOS Technology designed its own eight-bit chip, which although not compatible with the 6800, was very much a derivative. Its cheap price made it very attractive to hobbyists and designers and as a result it was used in the first generation of machines such as the top-selling PET and Apple. It remains a popular choice for home micros and has been used in machines such as the Oric and BBC

Intel



4004 and 8008: Designed to replace large numbers of TTL integrated circuits, the 4004 was a very simple chip that could only handle data in four-bit groups. Intel quickly progressed to eight-bit processing with the 8008. Hobbyists and engineers recognised the potential and began building their own 'home brew' computers



8080: With the arrival of the CP/M operating system, this became the first chip that could be used to build home and business micros. Intel's own update to the 8080 was the 8085, which was 8080-compatible, with extra functions and fewer support chips. The 8085 is available in a low-power CMOS version often found in portables such as the Tandy Model 100

Zilog



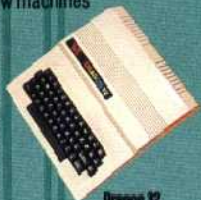
Z80: A team of designers left Intel to form Zilog and produce this enhanced but fully compatible version of the 8080



Tandy TRS-80 Model 1



6809: Motorola's own enhancement of the 6800 is the 6809, arguably the most capable of all eight-bit chips. However, it was too late to have any real impact and as a result has only been used in a few machines



Dragon 32



68000: The success of Motorola's highly-acclaimed 16-bit chip has been hampered by the lack of cheap software and the dominance of the 8086. However, Sinclair has chosen the scaled-down 68008 version for its QL



Apple III



8088 and 8086: The 8088 is a scaled-down version that can use older support chips, and so for a while was the most popular 16-bit chip. Its use in the Sirius and in the IBM PC made it the most popular 16-bit chip. The higher-performance but fully compatible 8086 is now being used in most machines



Z8000: Zilog's first 16-bit chip has not proved popular in the general-purpose computer market. Bad timing and the adoption of the 8088 by IBM may have been the reasons. Zilog's second attempt at a 16-bit chip is the Z800, which promises full Z80 (and hence 8080) compatibility



Sinclair QL



Apple Lisa



IBM PC



Olivetti M20

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