12-bit

In computer architecture, **12-bit** integers, memory addresses, or other data units are those that are 12 bits (1.5 octets) wide. Also, 12-bit CPU and ALU architectures are those that are based on registers, address buses, or data buses of that size.

Possibly the best-known **12-bit** CPU is the PDP-8 and its relatives, such as the Intersil 6100 microprocessor produced in various incarnations from August 1963 to mid-1990. Many analog to digital converters (ADCs) have a 12-bit resolution. Some PIC microcontrollers use a 12-bit word size.

12 binary digits, or 3 nibbles (a 'tribble'), have 4096 (10000 octal, 1000 hexadecimal) distinct combinations. Hence, a microprocessor with 12-bit memory addresses can directly access 4096 words (4 Kw) of word-addressable memory. At a time when six-bit character codes were common a 12-bit word, which could hold two characters, was a convenient size. IBM System/360 instruction formats use a 12-bit displacement field which, added to the contents of a base register, can address 4096 bytes of memory.

List of 12-bit computer systems

- Digital Equipment Corporation
  - PDP-5
  - PDP-8
    - DECmate, a personal computer based on the Intersil 6100
  - PDP-12
  - PDP-14
- Intersil IM6100 microprocessor (PDP-8-compatible)
- Control Data Corporation
  - CDC 6600 - Peripheral Processor (PP)
  - CDC 160 series computers
- National Cash Register NCR 315
- Scientific Data Systems SDS 92
- Ford Motor Company EEC I Automotive engine control unit
- PC12 minicomputer
- Ferranti Argus
- LINC, later commercialized by DEC as the LINC-8
- Electronic Arrays 9002 (12-bit addressing but 8-bit byte)

See also

- FAT12, a file system with 12-bit wide cluster entries

References

- DIGITAL Computing Timeline: 12-bit architecture

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