

# THE CPU – Tapescript

## Part 1

The Central Processing Unit, the CPU, has three main parts: the Control Unit, the Arithmetic and Logic Unit, and Registers. These components are connected to the rest of the computer by buses.

The Arithmetic and Logic Unit, ALU for short, performs arithmetic functions such as ADD and SUBTRACT, and logic operations such as AND, OR, and NOT.

The Control Unit makes the computer carry out each instruction of a program in the right order and controls the operation of all hardware, including input and output devices and the other parts of the CPU.

Registers are temporary storage areas for instructions or data. They work under the direction of the control unit. They hold the instructions or data *immediately* required for an operation, whereas main memory stores data required *in the near future*. Registers work at high speed.

## Part 2

A bus is a group of parallel wires which carry electrical signals between different parts of the computer. Some buses are bidirectional. They allow data to flow in either direction. Most computers have three main buses: the data bus, the address bus, and the control bus.

The data bus is a bidirectional bus. It carries data and instructions from the memory to the CPU and from the CPU to memory.

The address bus is a unidirectional bus. Data flows one way only. It carries addresses from the processor to memory. The addresses identify places in the memory where data or instructions may be found or stored.

The control bus is bidirectional. It carries instructions to and from the CPU and other parts of the computer. It's a collection of lines which carry different signals. For example, the clock line carries a signal from the clock chip to synchronize the operations of the processor.