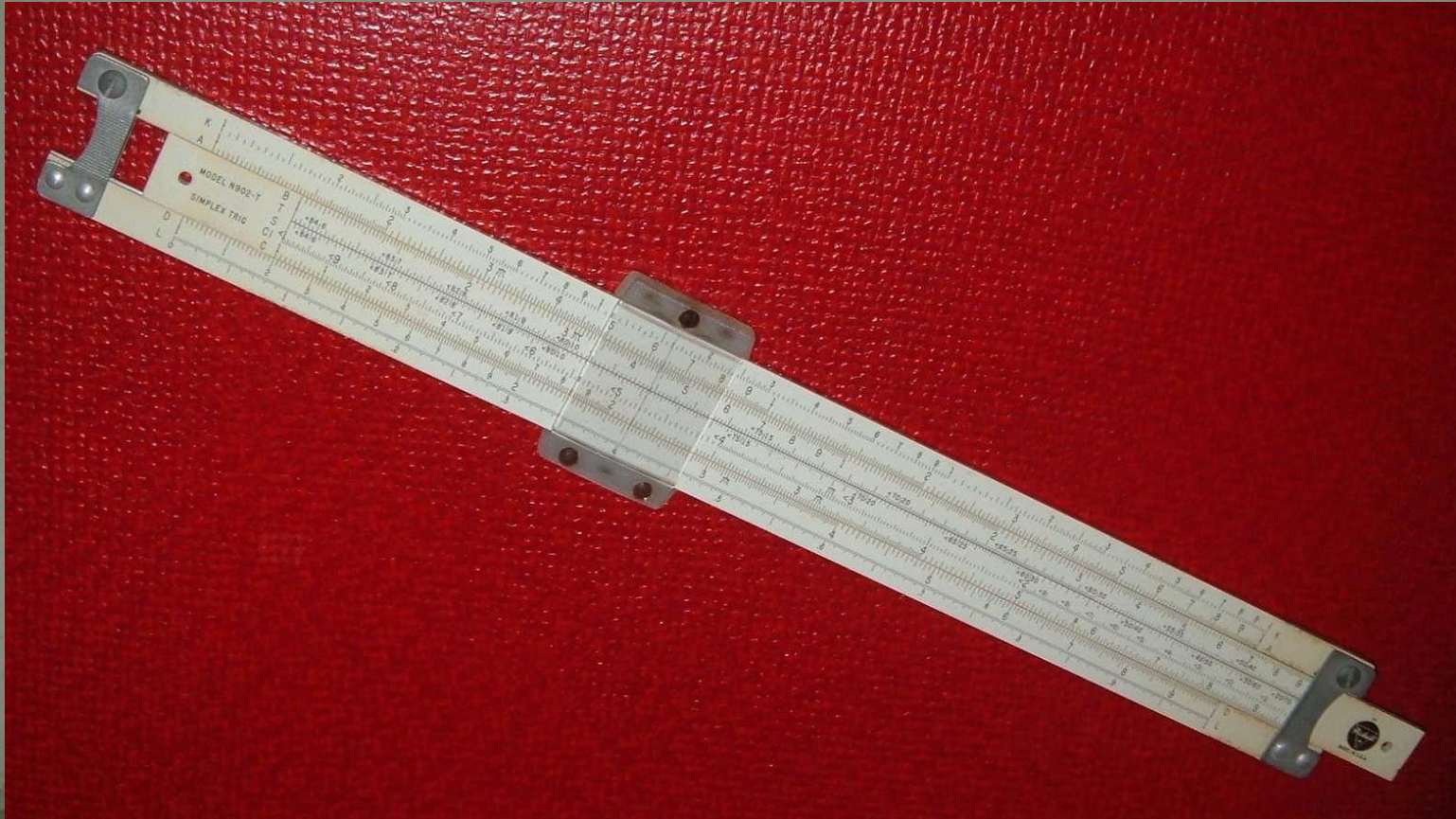


Limited-function early computers

- The history of the modern computer begins with two separate technologies,
- automated calculation and
- Programmability
- But no single device can be identified as the earliest computer, partly because of the inconsistent application of that term.



Applications of Microprocessors

- Microprocessors can be found just about everywhere:
 - In general-purpose computers, like mainframes, personal computers (PCs), and single-board computers (SBCs).
 - In special-purpose computers, like calculators, personal data assistants (PDAs), and game computers.
 - In embedded computers that control automobiles, appliances, instruments, communication systems, cell phones, factories, assembly lines, refineries and etc.
 - **Ex. In a car:** Microprocessors are used in the ignition system, emission control system, anti-lock brakes, dashboard display, entertainment system, navigation system, etc. Modern cars often contain 20 or more microprocessors.

Microprocessors Related Terms

- A “microcomputer” is a computer system that has been built around a microprocessor chip.
- A “microcontroller” is an integrated circuit that contains a microprocessor as well as other useful support circuits, such as timers, memory, input/output interface circuits, etc.
- The EE380 lab microcomputer system contains the Motorola MC68332 microcontroller chip.
- A “digital signal processor” (DSP) is a specialized microprocessor that has features (e.g. instructions, registers, internal signal paths, arithmetic circuits) that make it particularly efficient at performing the kinds of numerically intensive calculations that are required in digital signal processing (e.g. in modems and cell phones)