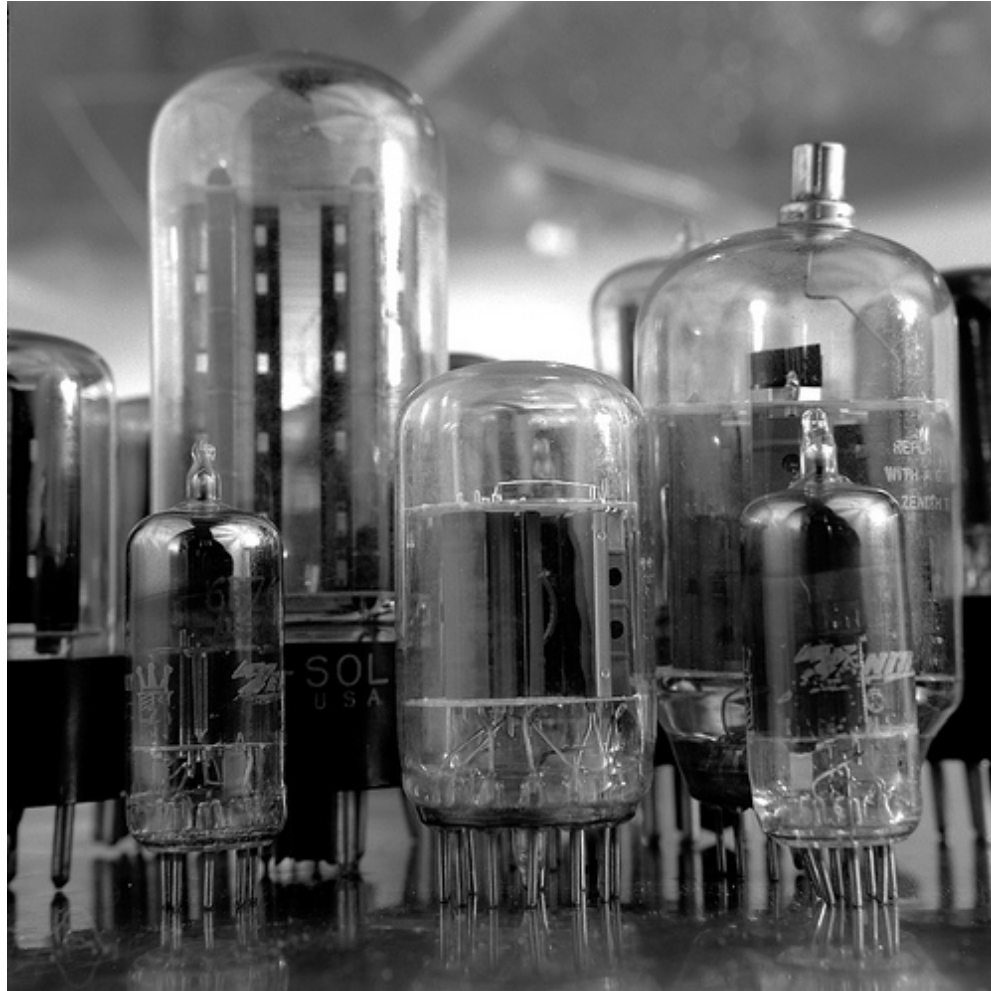


Background/History

Vacuum Tubes



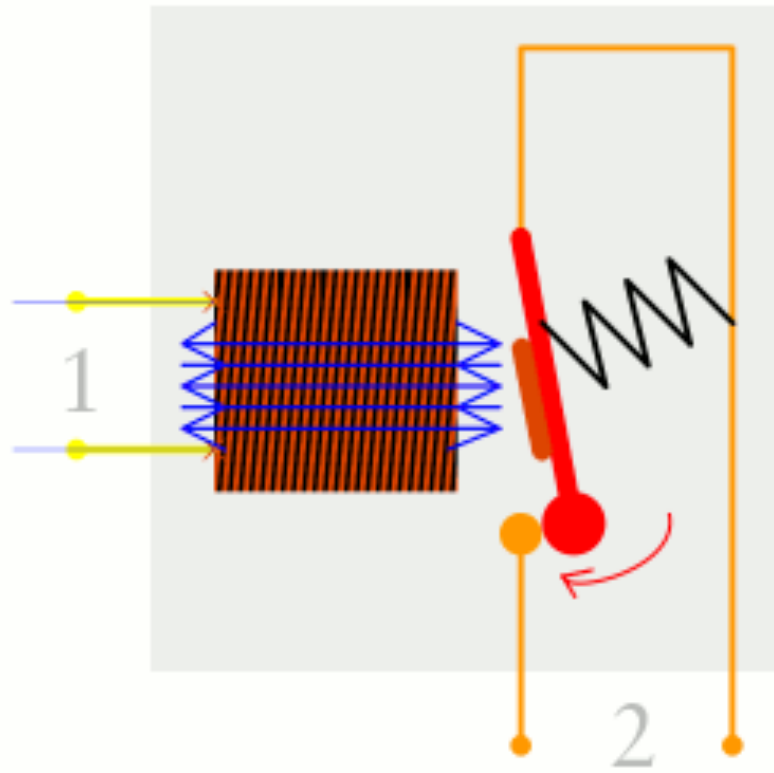
Vacuum Tubes



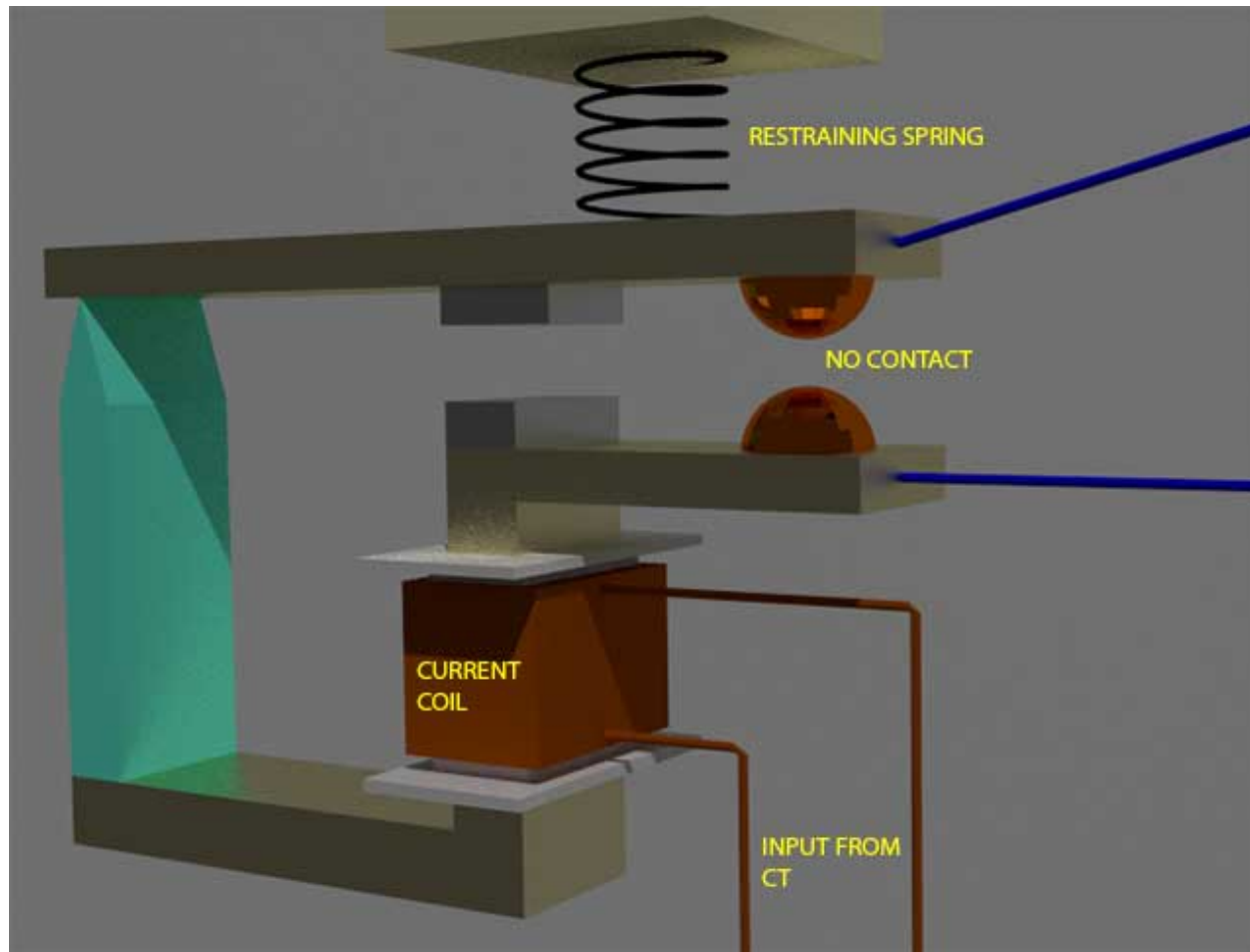
Vacuum Tubes



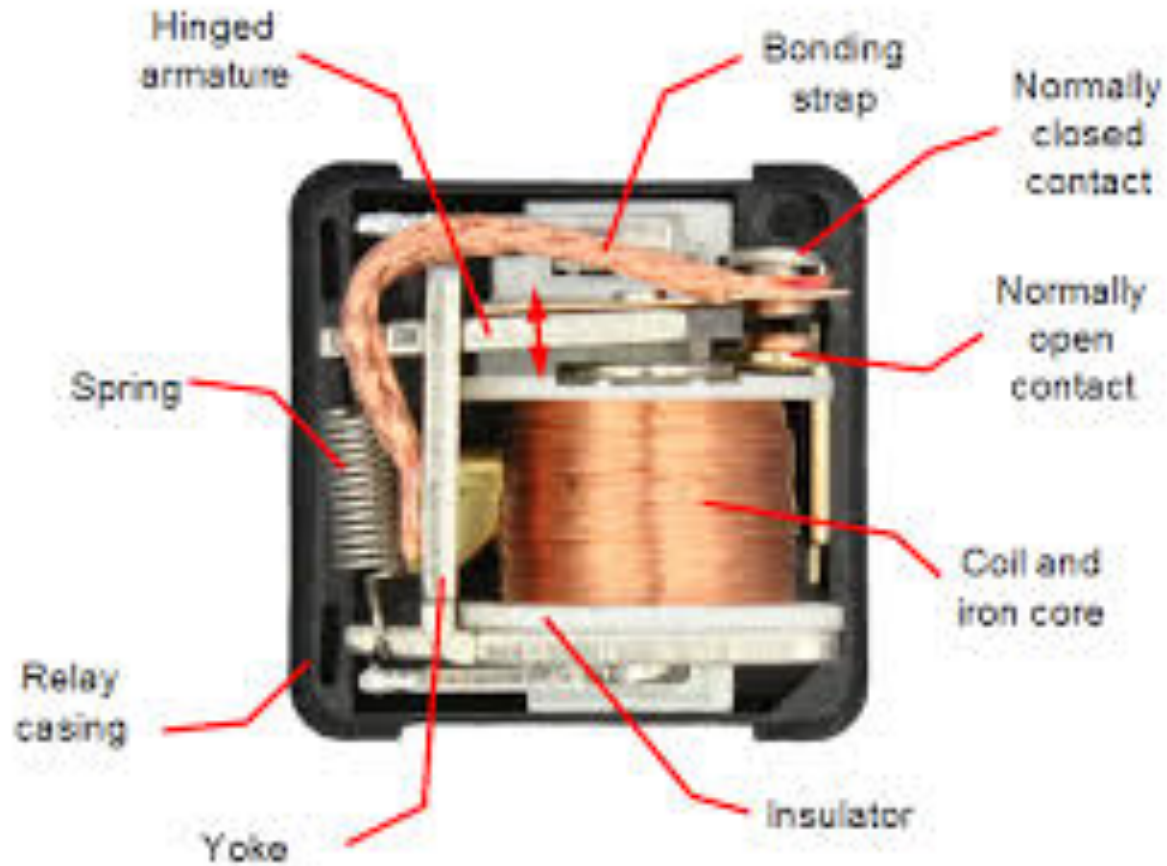
How a relay works



How a relay works



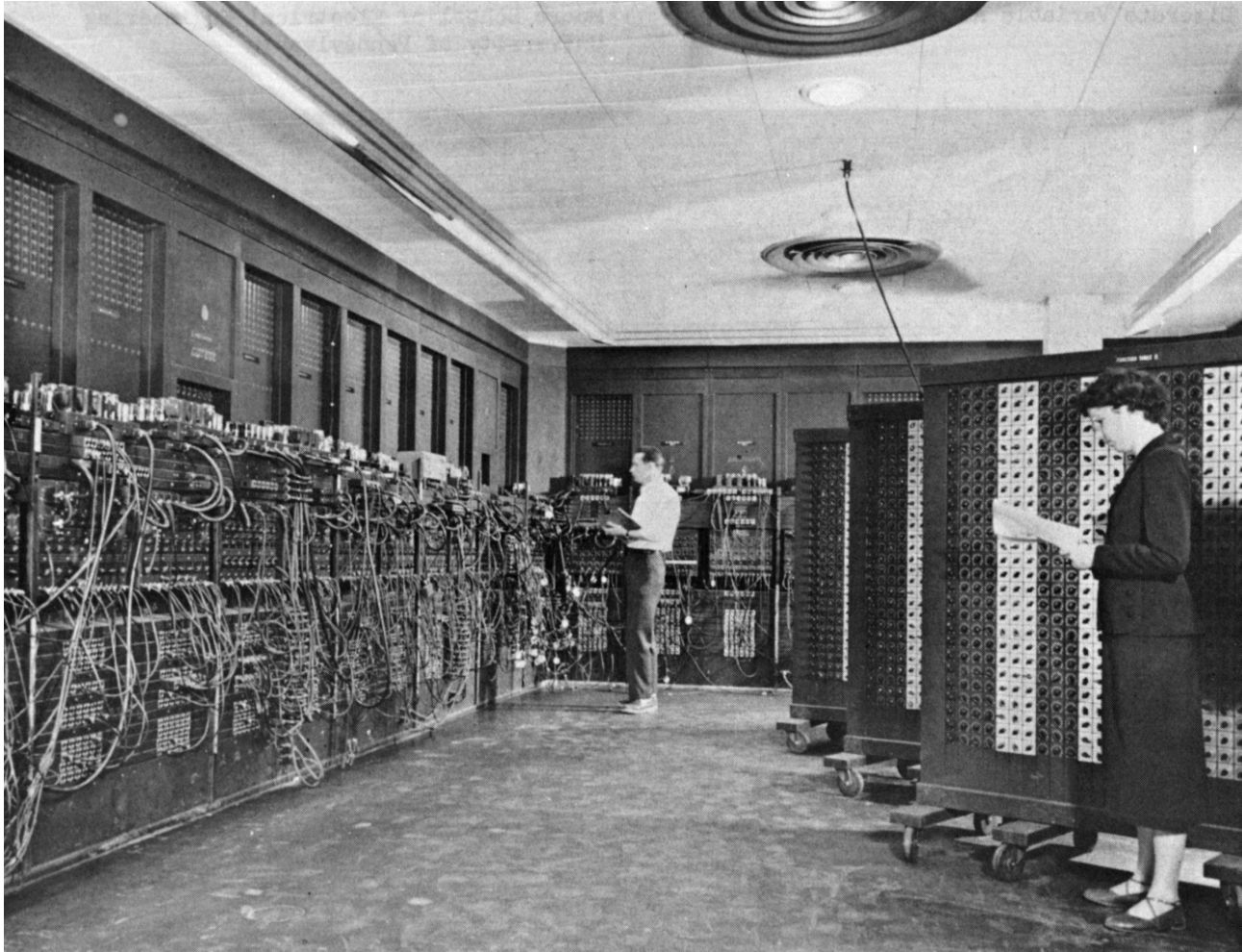
Relay



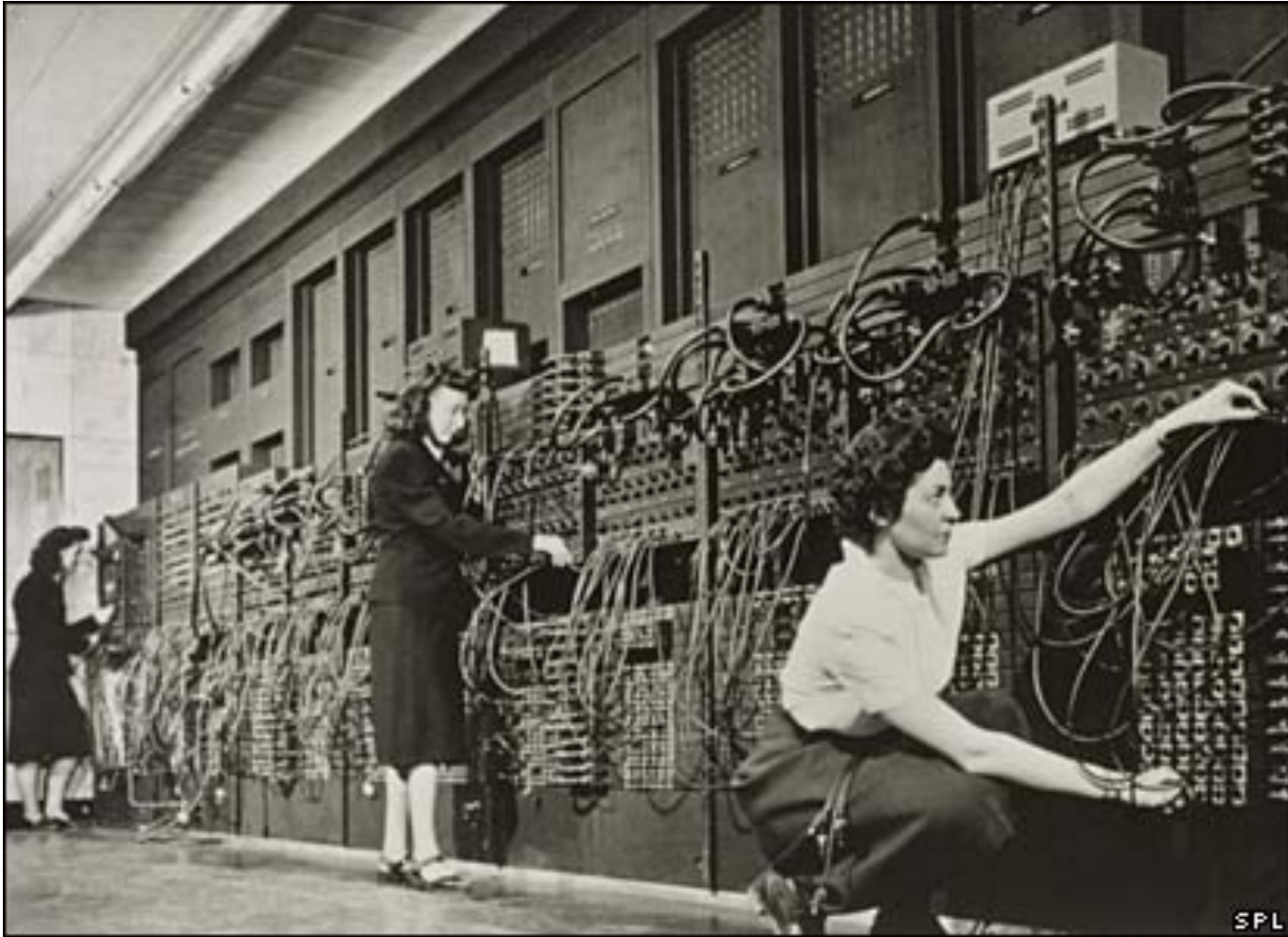
Relay



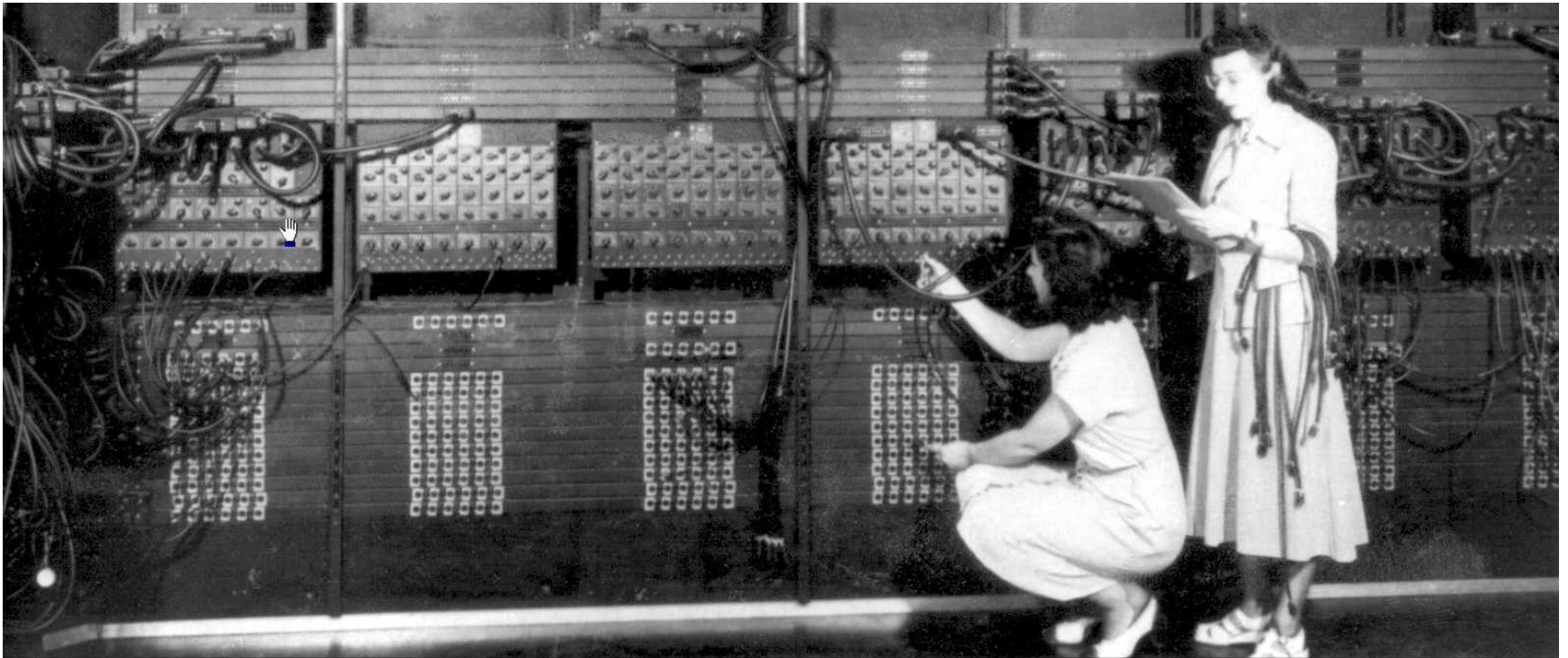
ENIAC



ENIAC



ENIAC

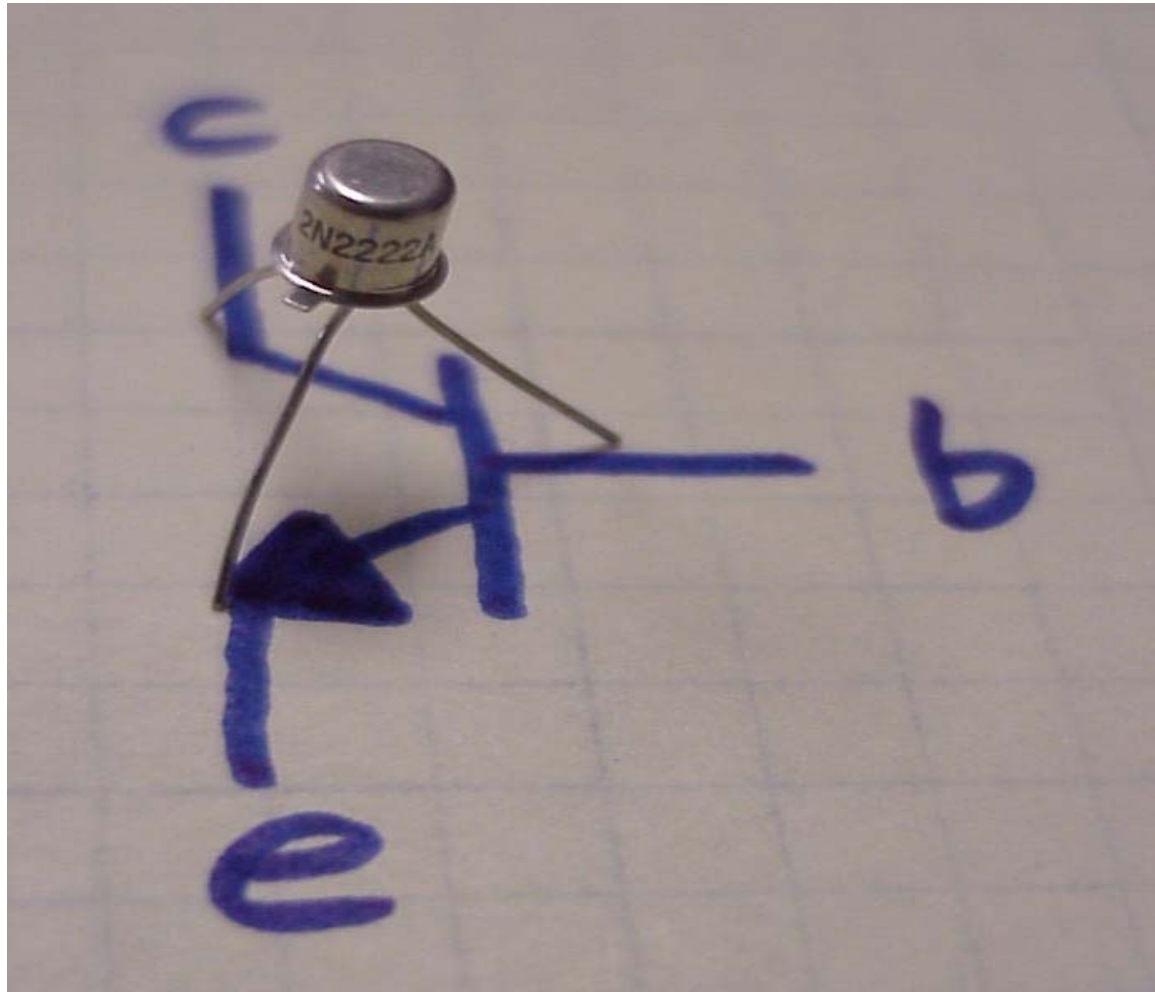


DOWNSIZING AND UPGRADING

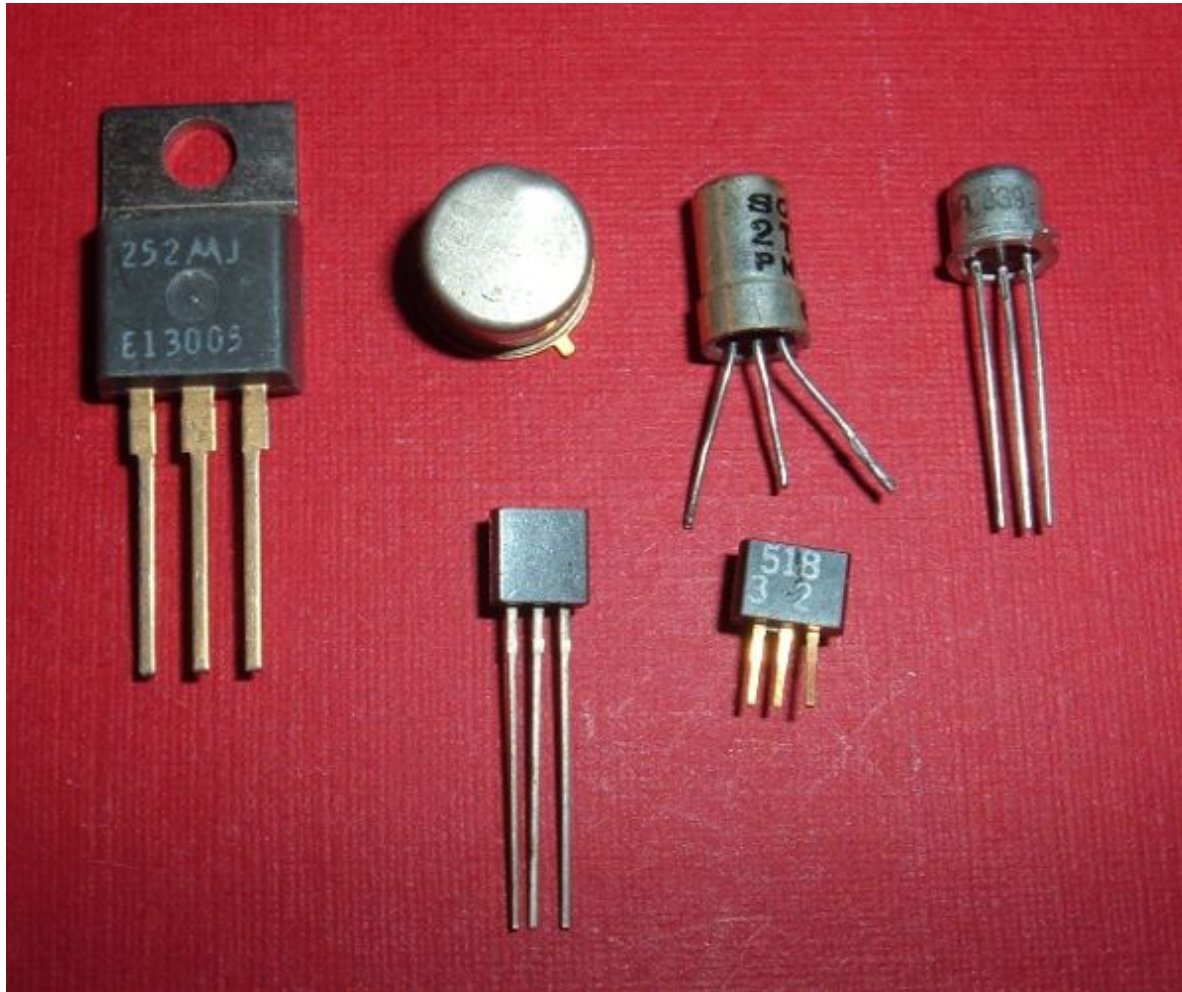
The inception of computing inspired a remarkable race for faster, smaller, lighter, cheaper hardware.

	ENIAC	Intel Core Duo chip
Debut	1946	2006
Performance	5,000 addition problems/sec	21.6 billion ops/sec
Power use	170,000 watts	31 watts max
Weight	28 tons	negligible
Size	80' w x 8' h	90.3 sq. mm.
What's inside	17,840 vacuum tubes	151.6 M transistors
Cost	\$487,000	\$637

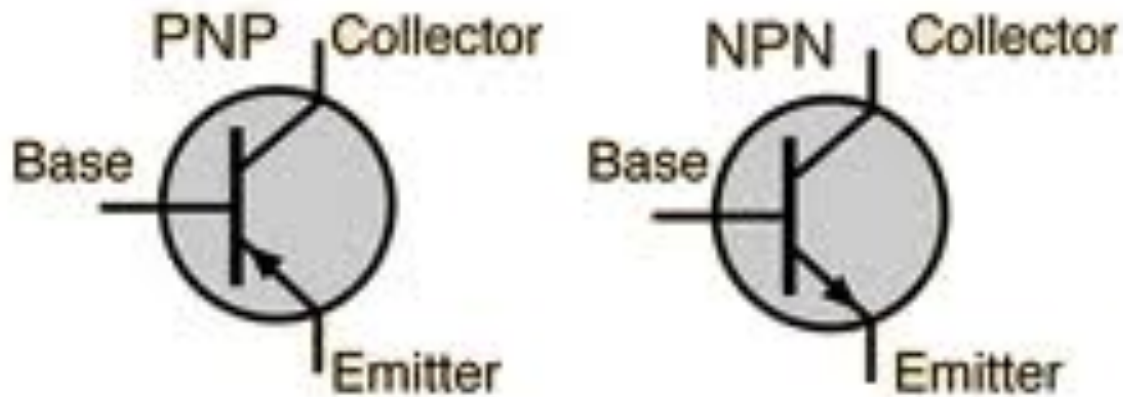
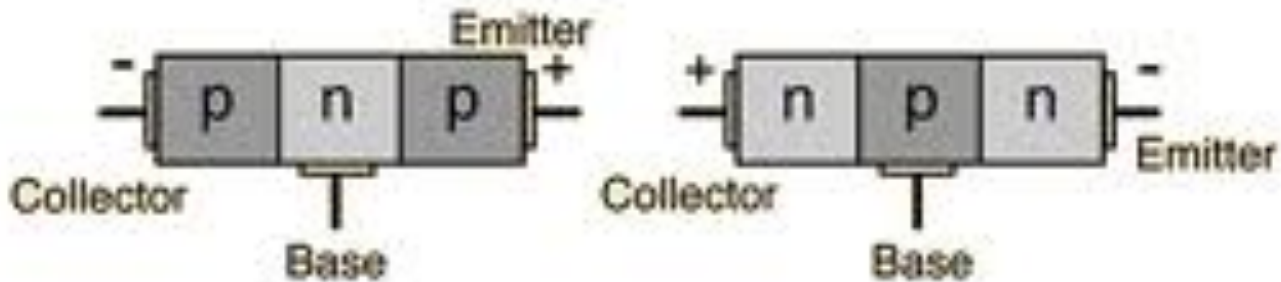
2nd Generation Transistor



2nd Generation Transistors

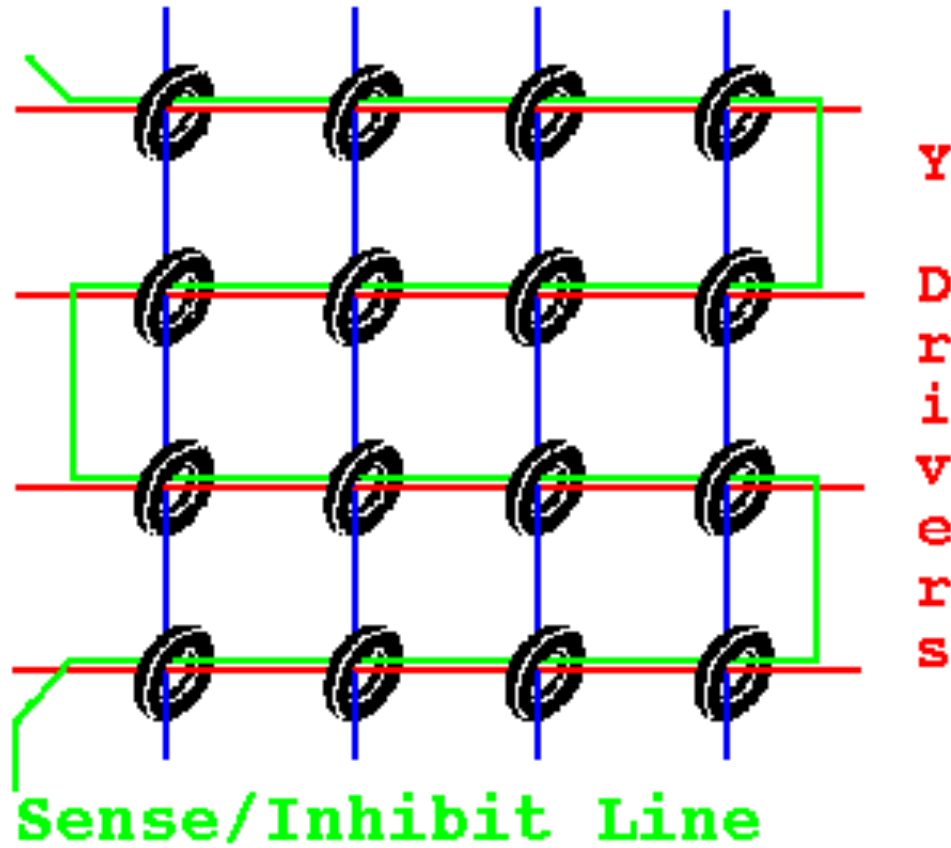


2nd Generation Transistors

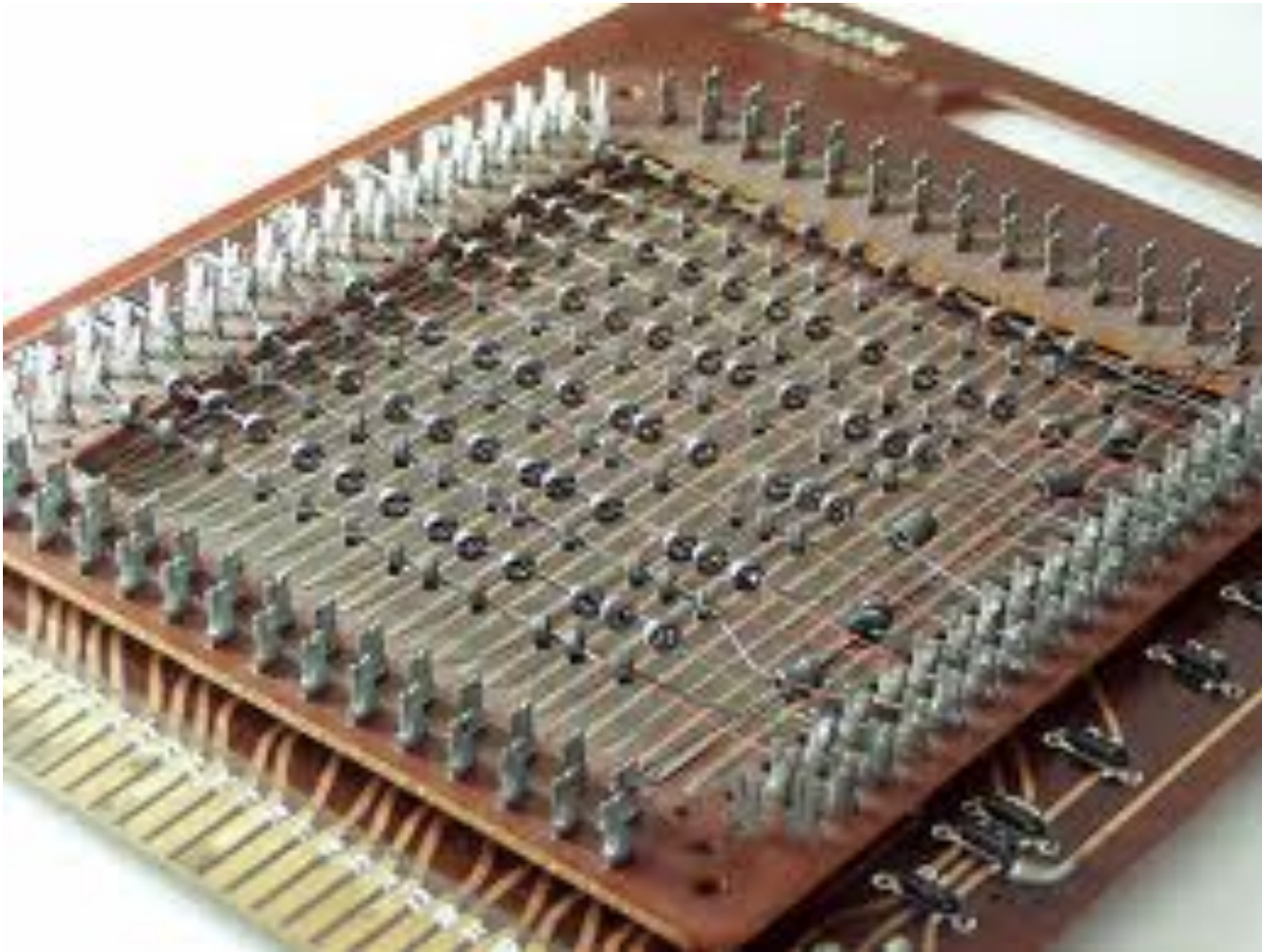


Core Memory

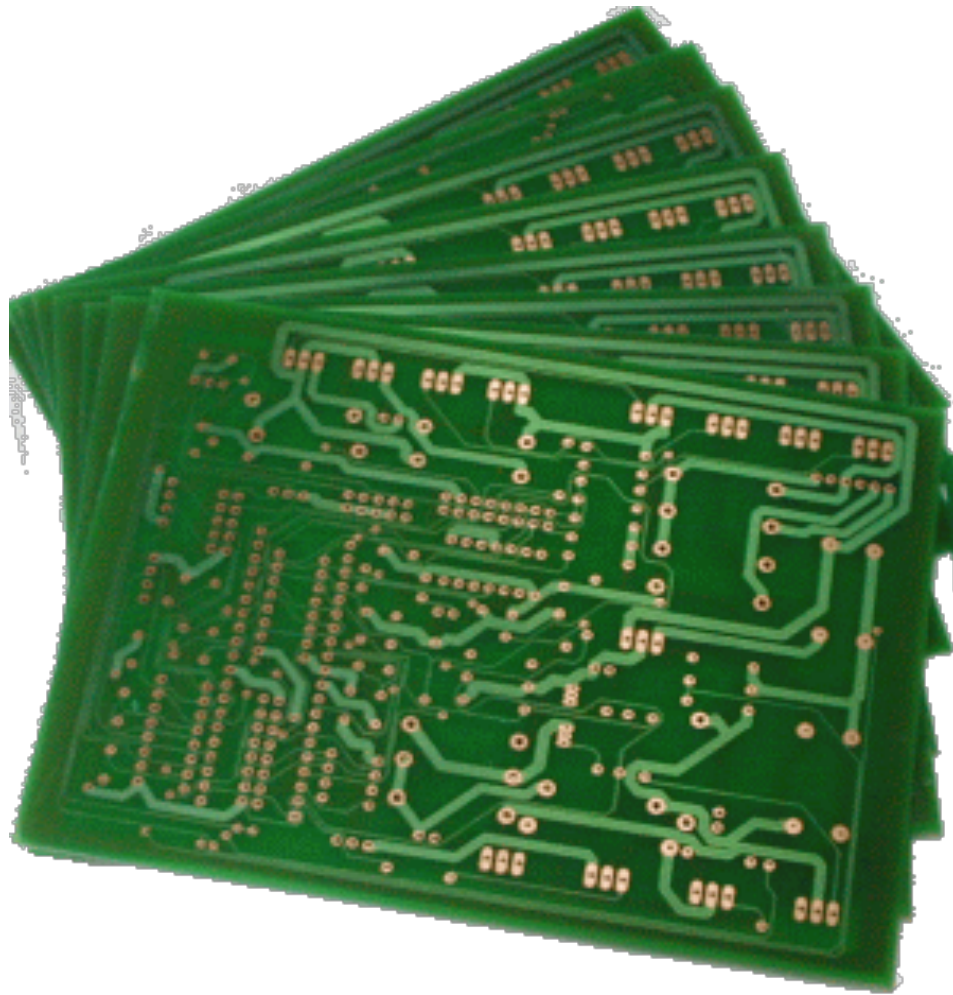
X Drivers



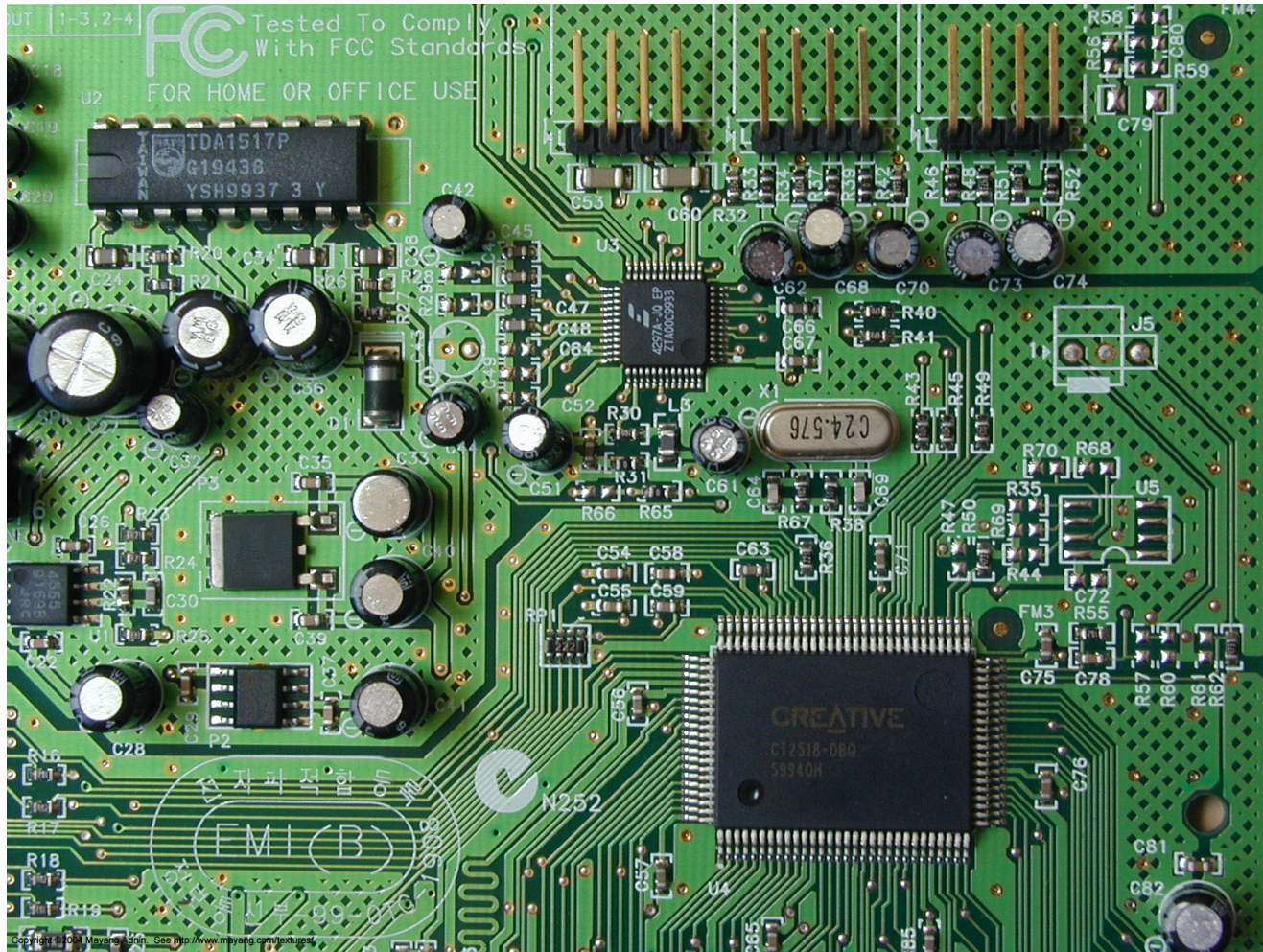
Core Memory



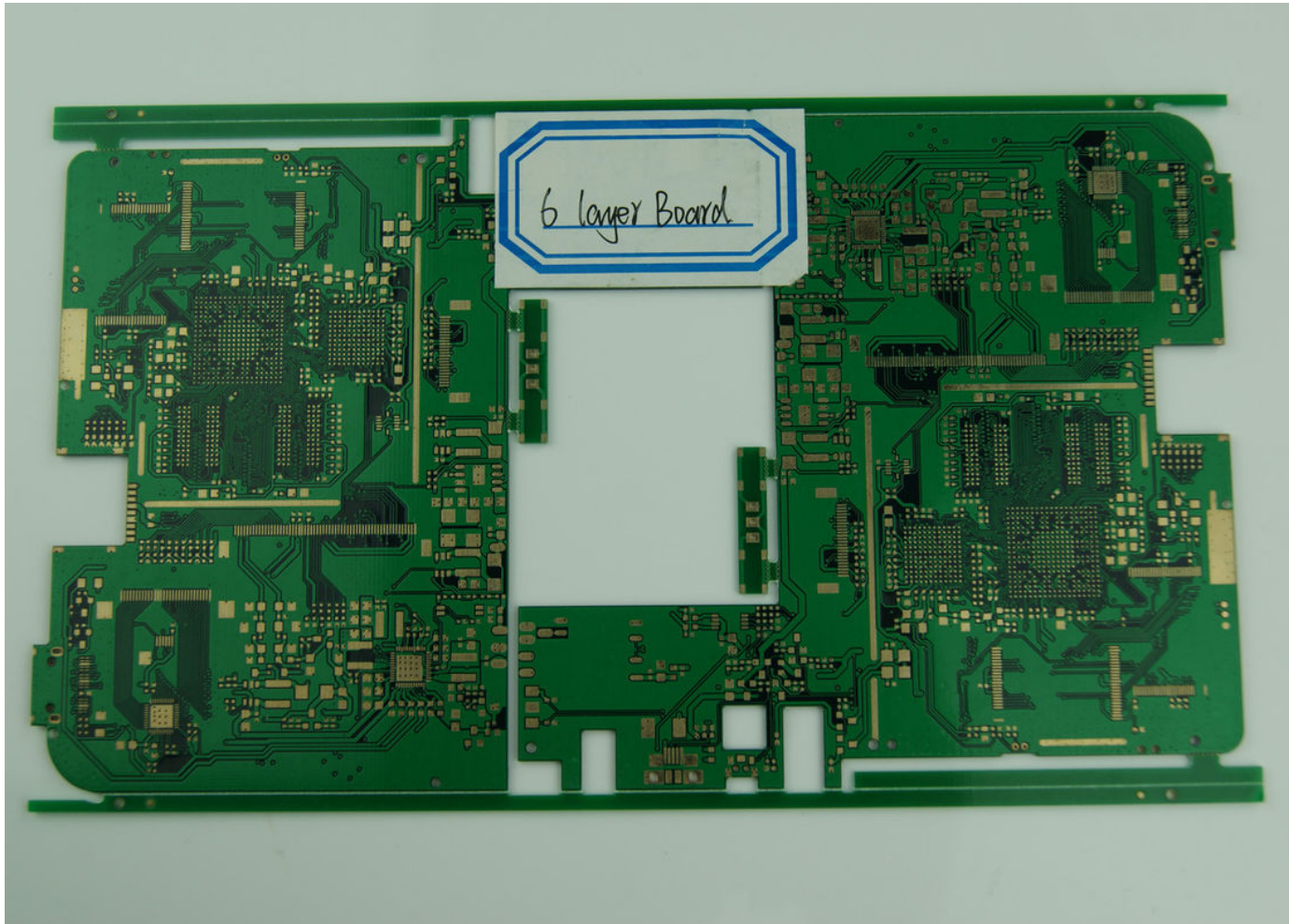
PCBs (Printed Circuit Boards)



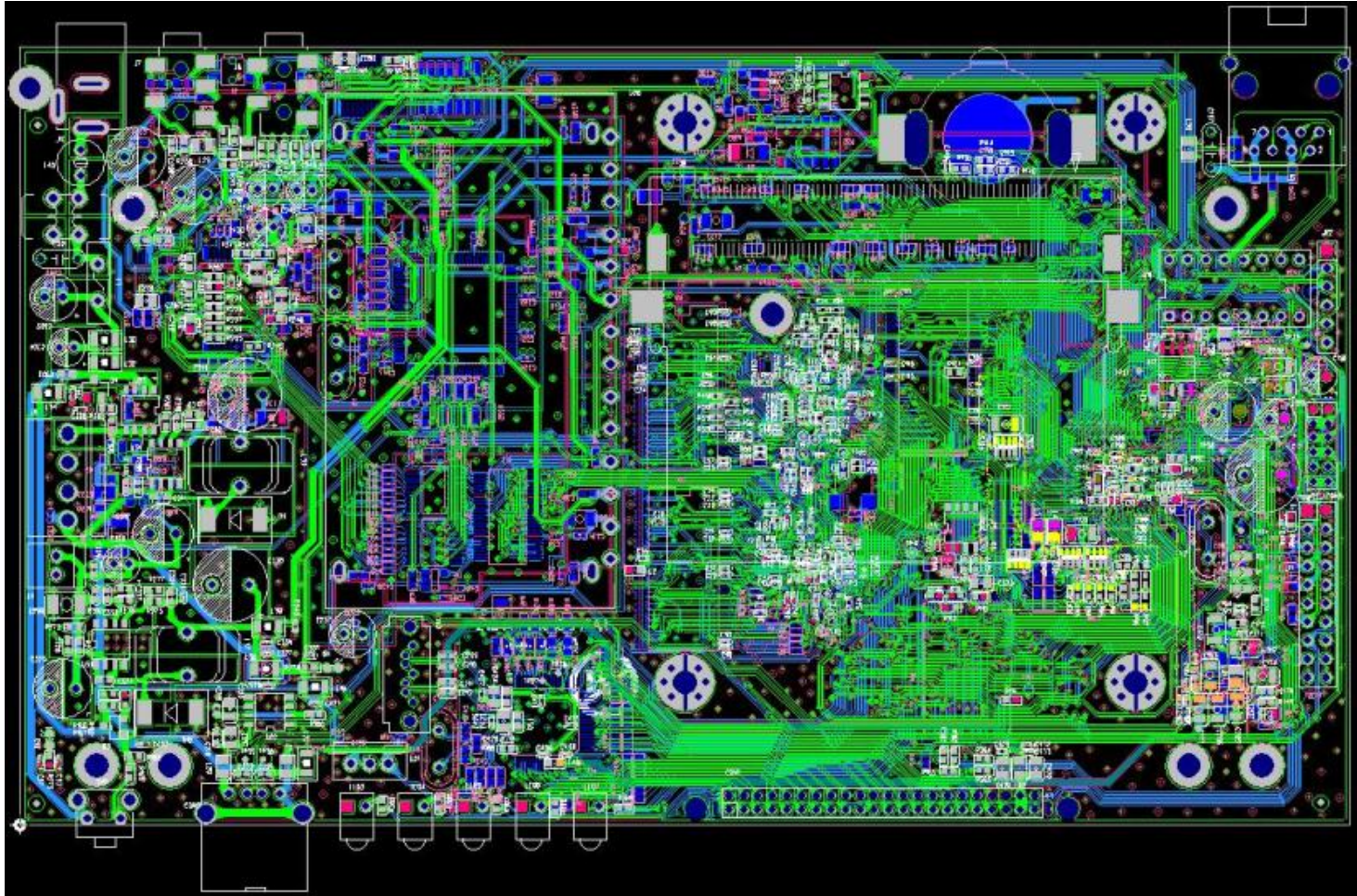
PCB



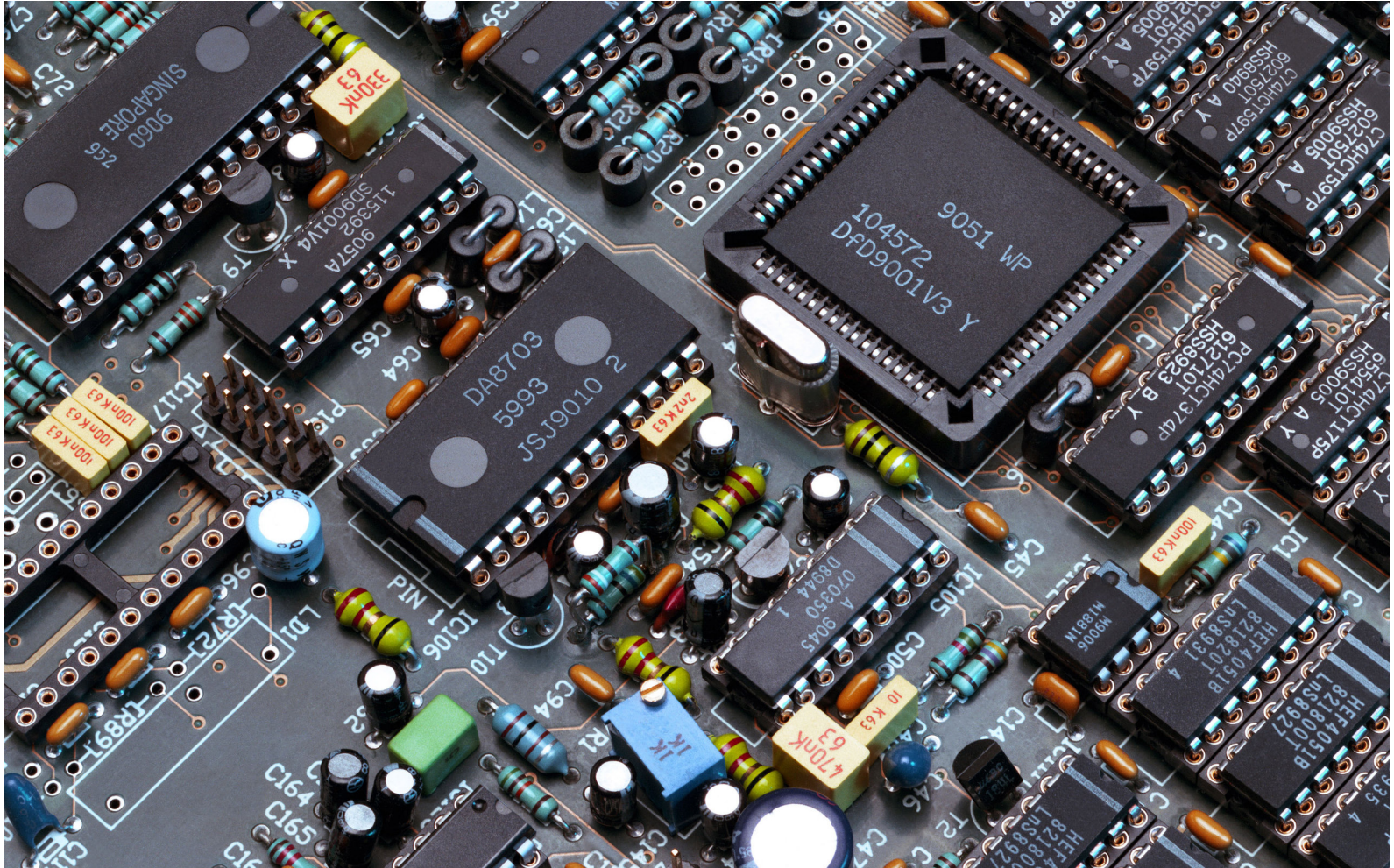
Multilayer PCB



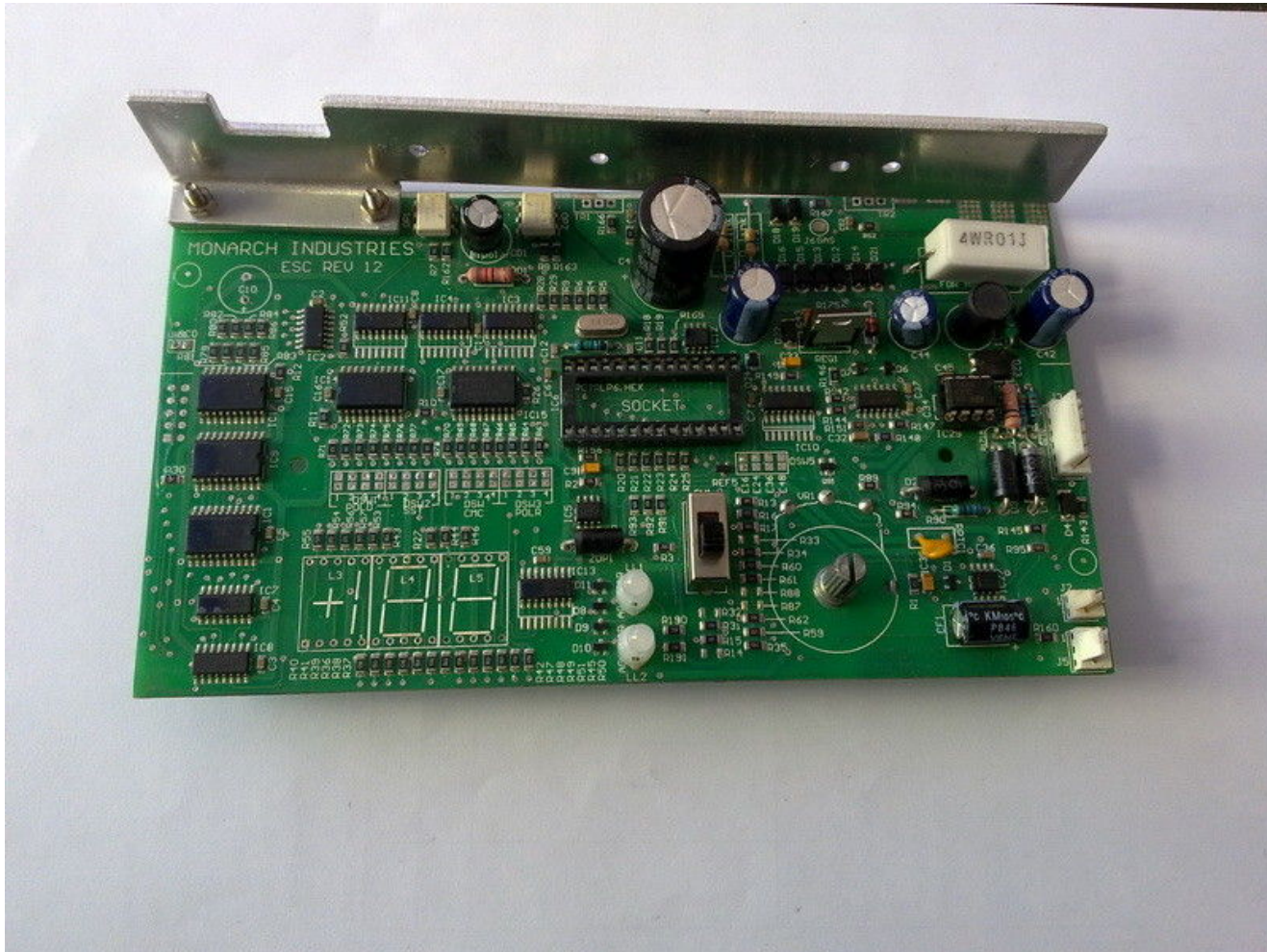
Complex PCB

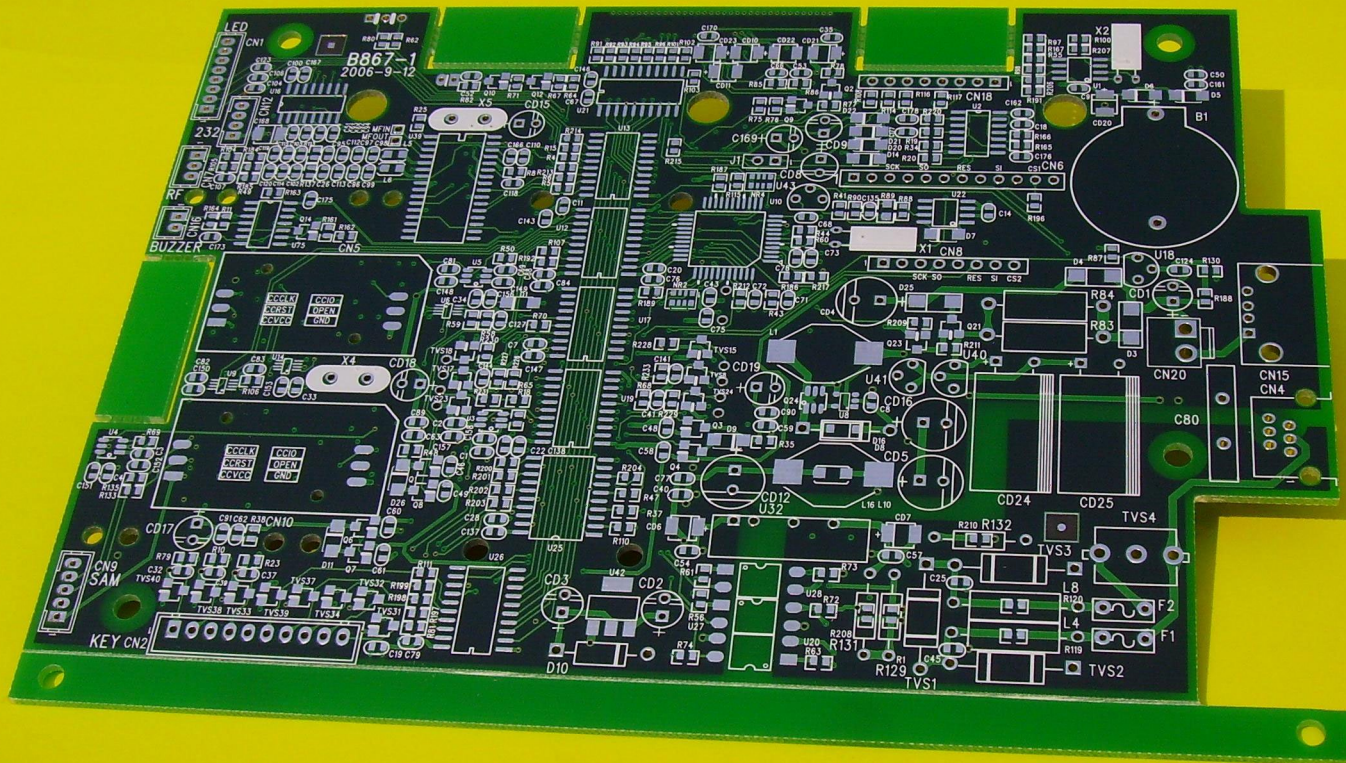


PCB with sockets



PCB with sockets





Populated PCB

