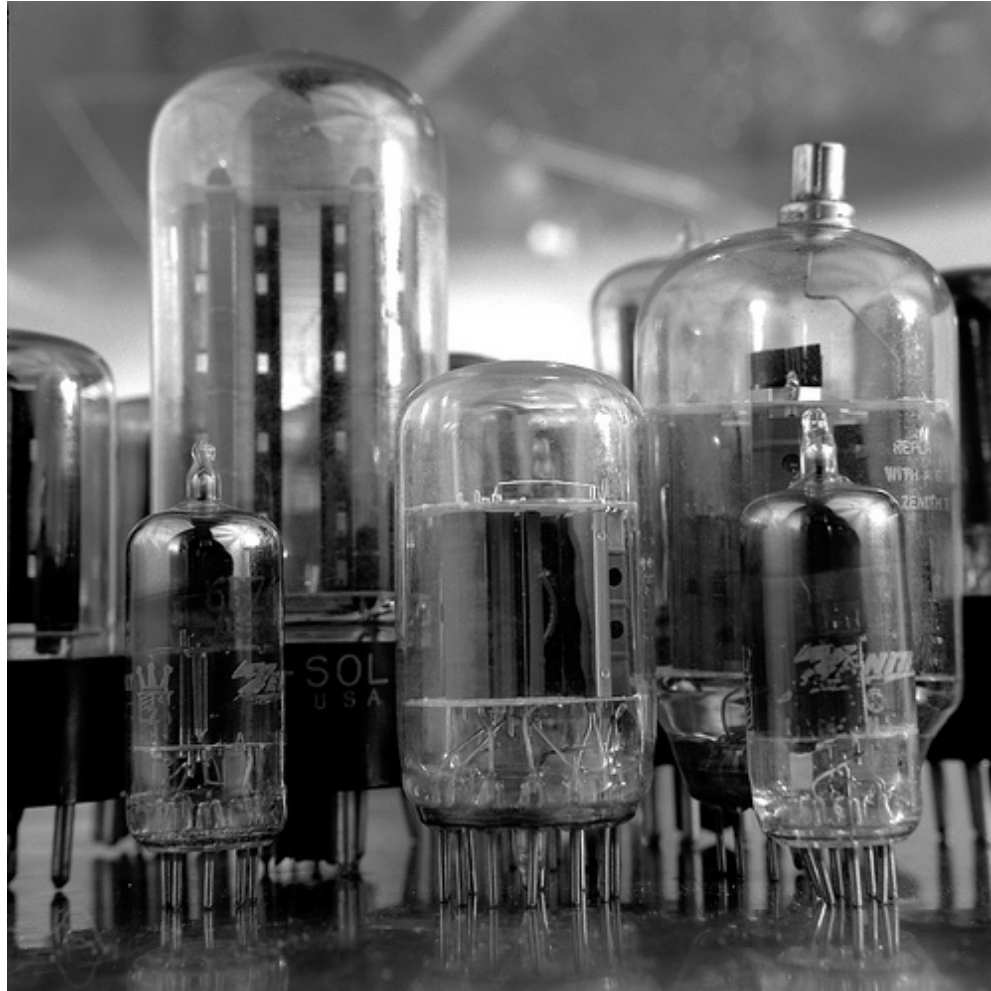


# Background/History

# Vacuum Tubes



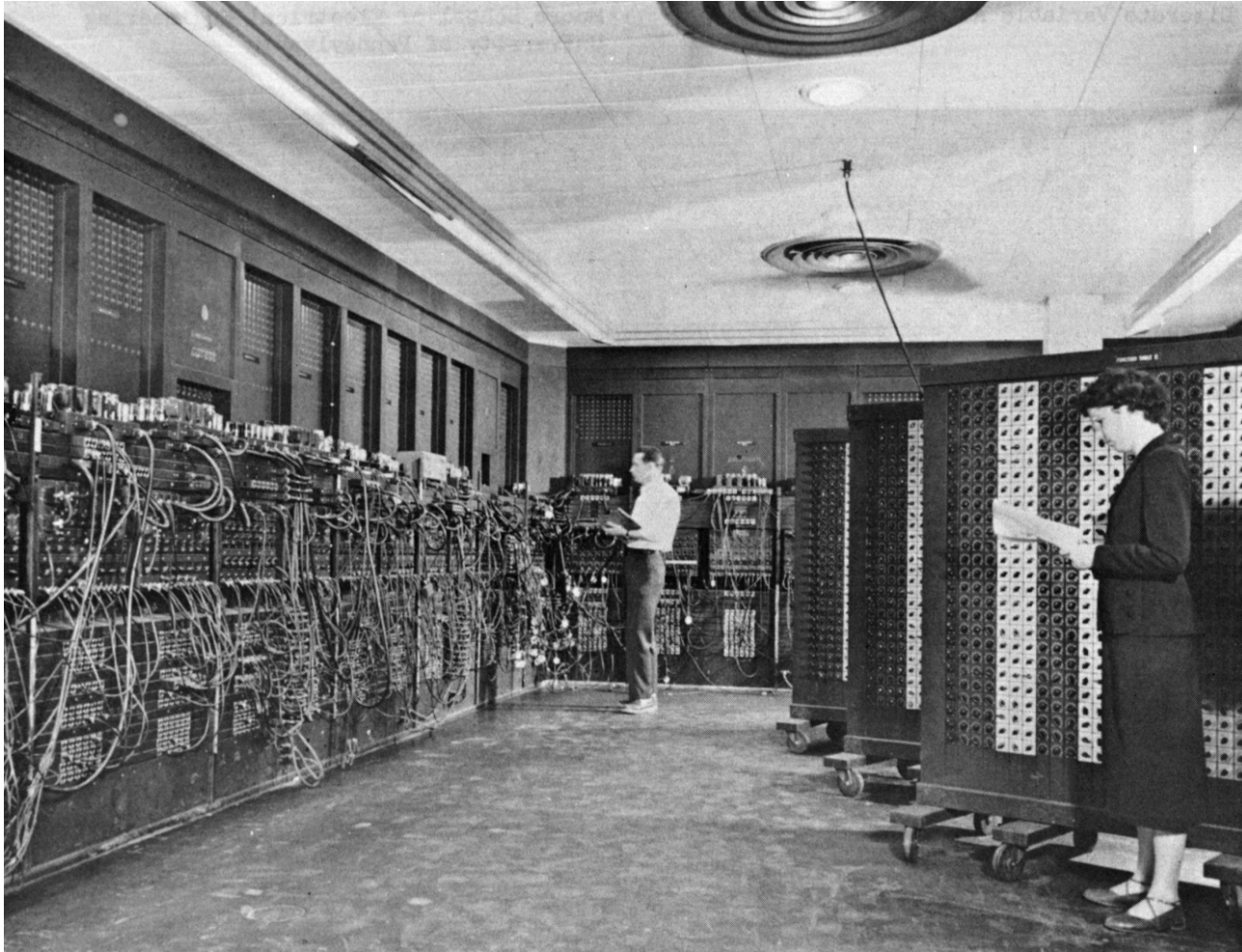
# Vacuum Tubes



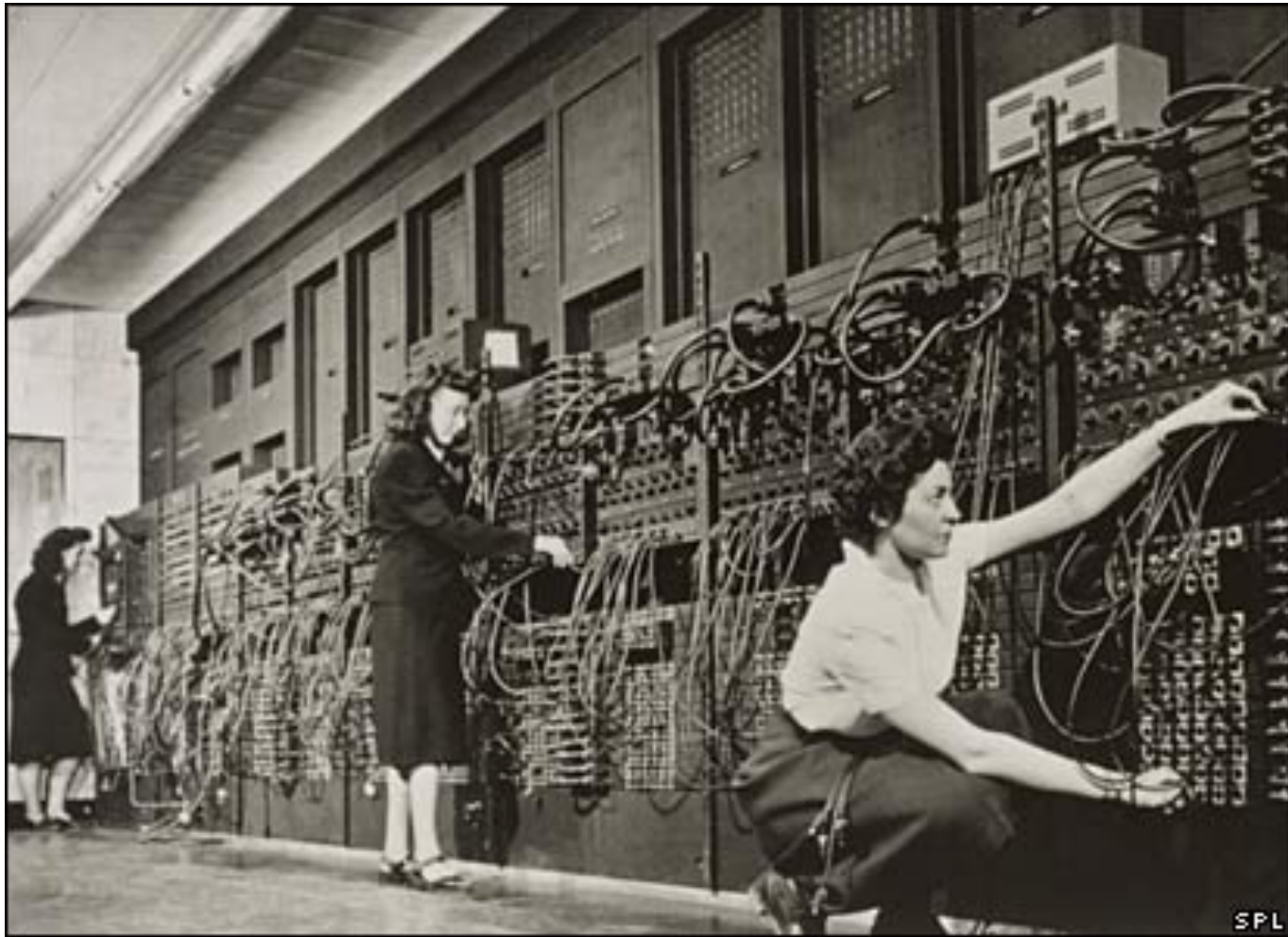
# Vacuum Tubes



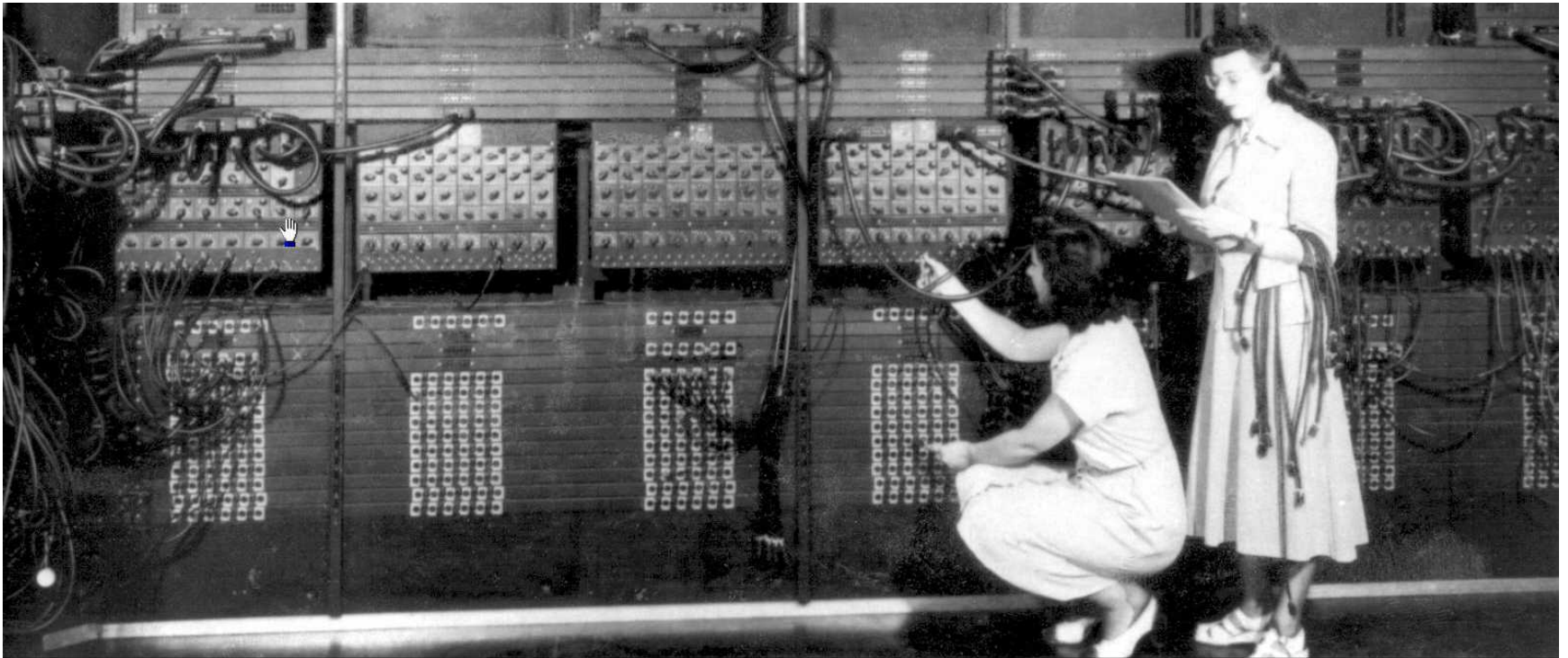
# ENIAC



# ENIAC



# ENIAC



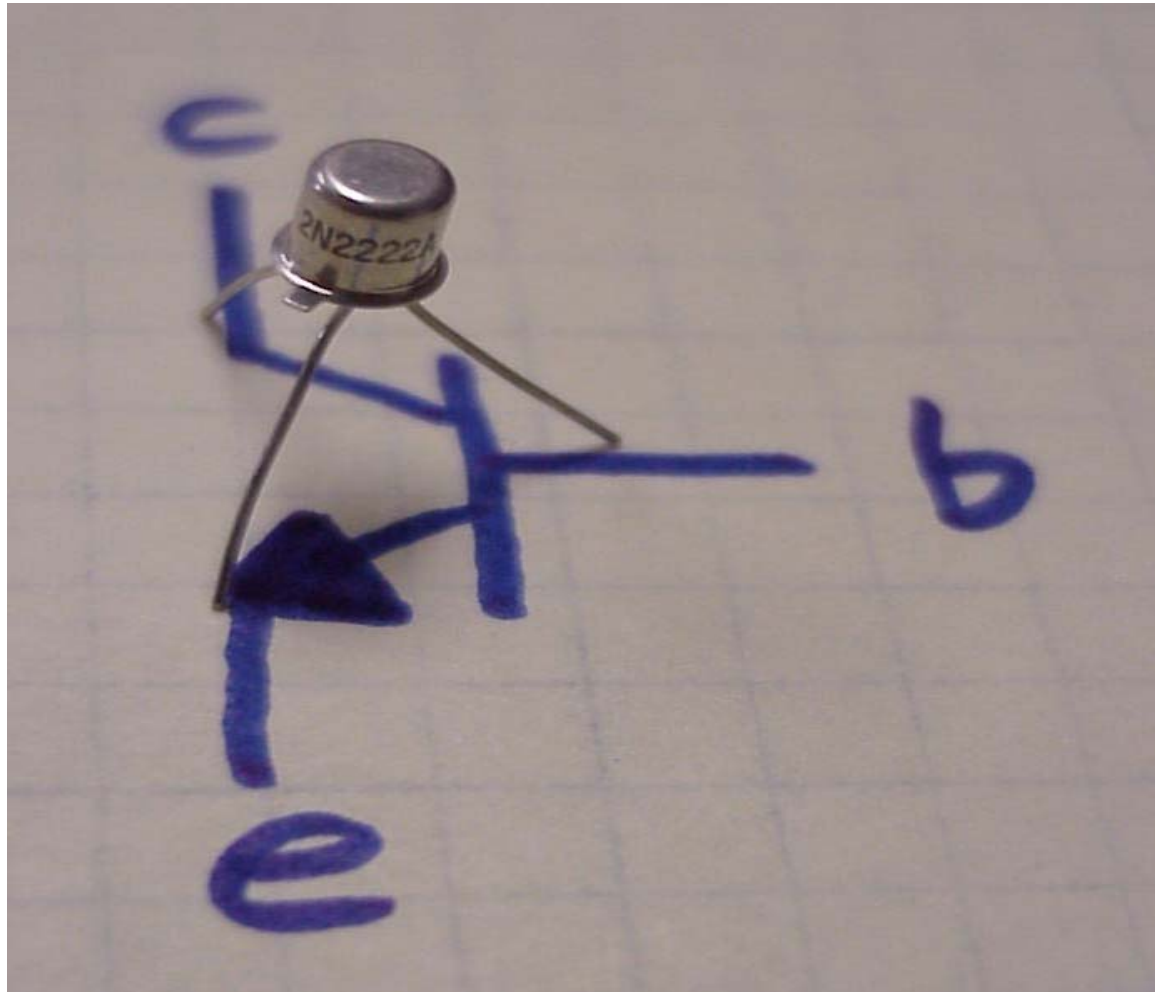
## DOWNSIZING AND UPGRADING

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

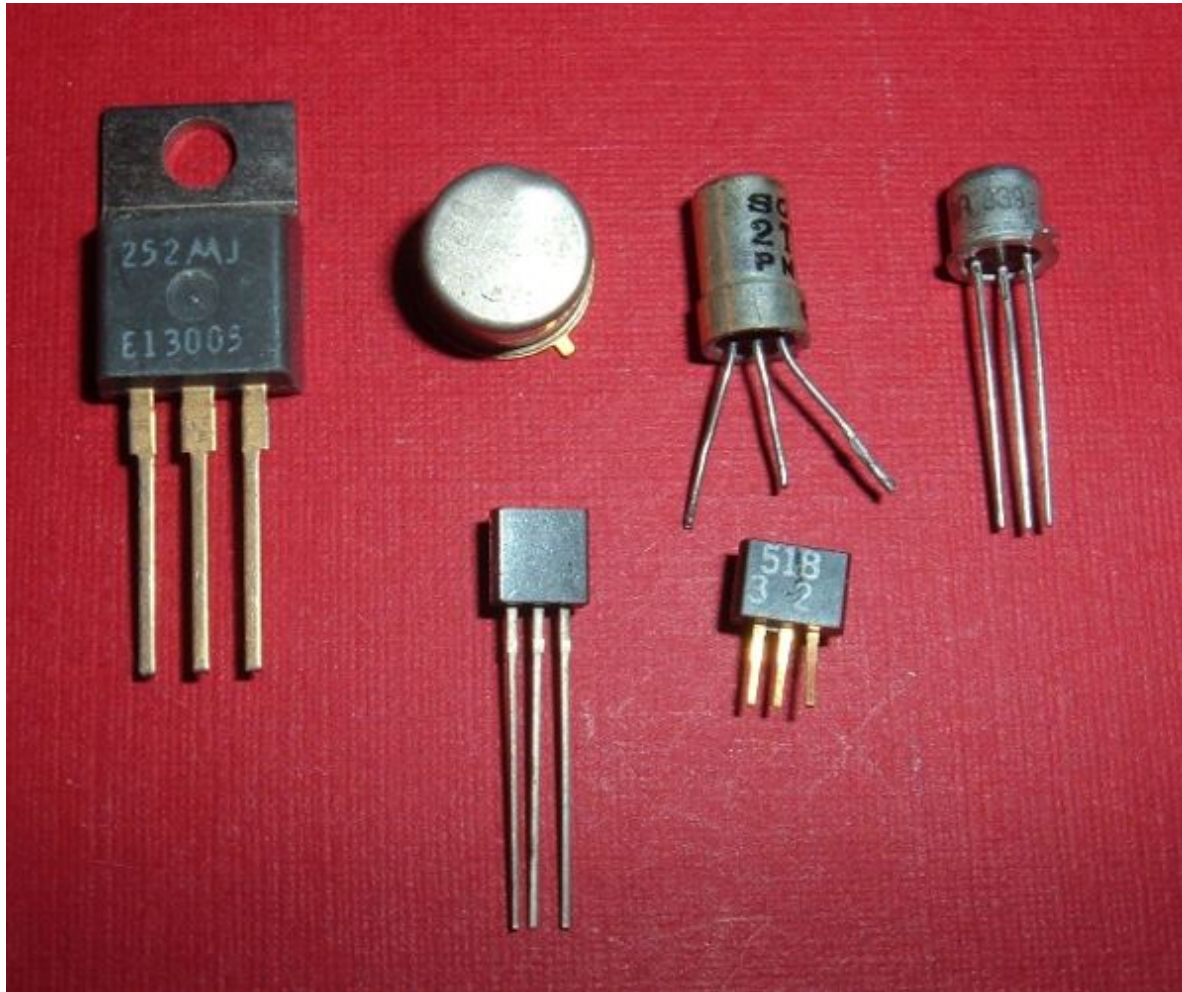
	<b>ENIAC</b>	<b>Intel Core Duo chip</b>
Debut	1946	2006
Performance	5,000 addition problems/sec	21.6 billion ops/sec
Power use	170,000 watts	31 watts max
Weight	28 tons	negligible
Size	80' w x 8' h	90.3 sq. mm.
What's inside	17,840 vacuum tubes	151.6 M transistors
Cost	\$487,000	\$637



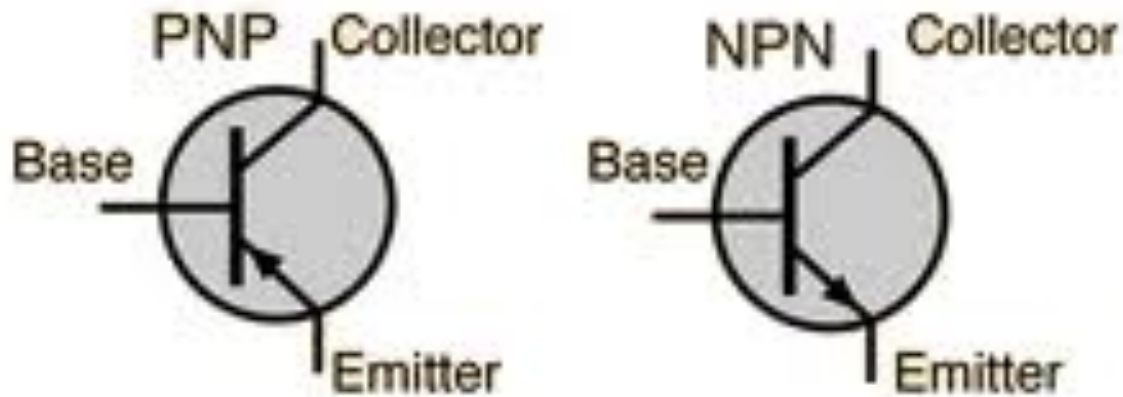
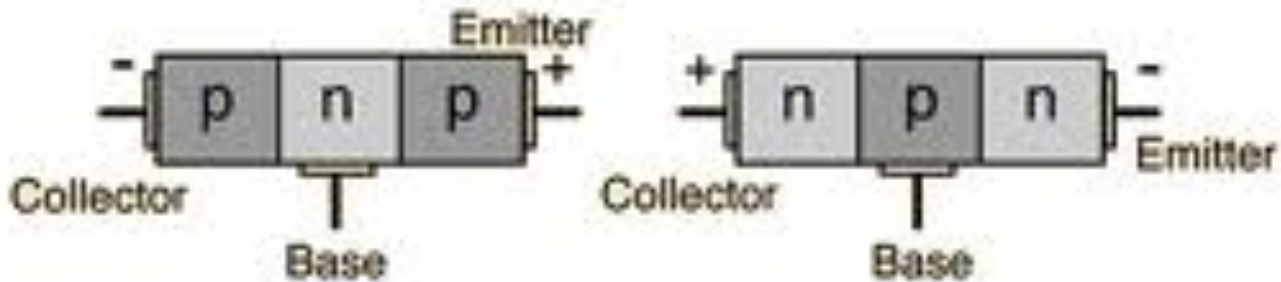
# 2<sup>nd</sup> Generation Transistor



# 2<sup>nd</sup> Generation Transistors

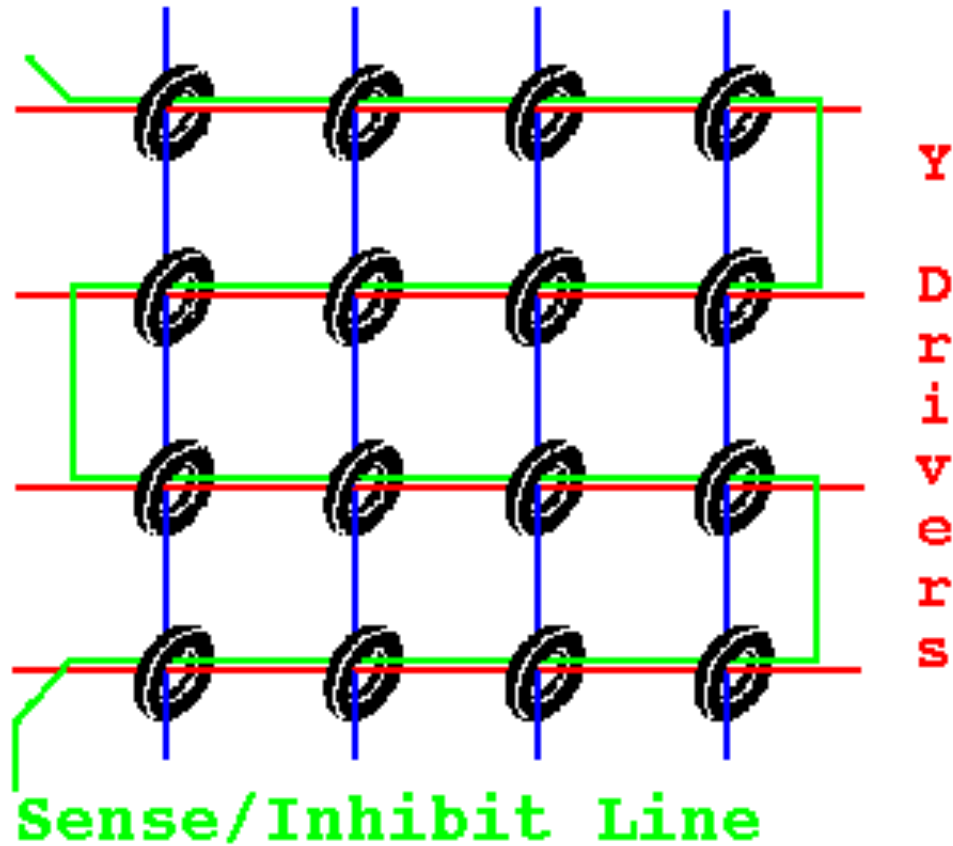


# 2<sup>nd</sup> Generation Transistors

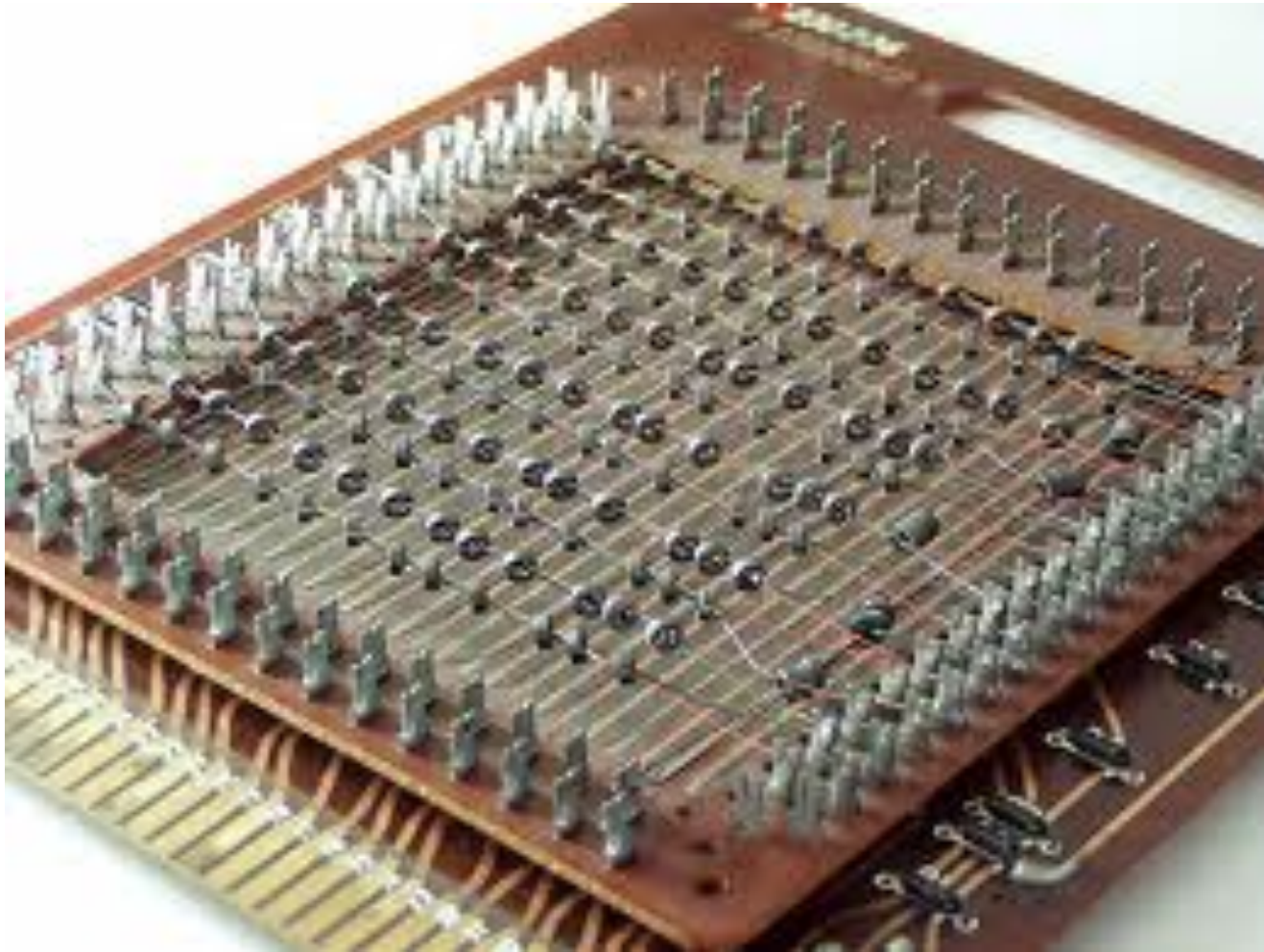


# Core Memory

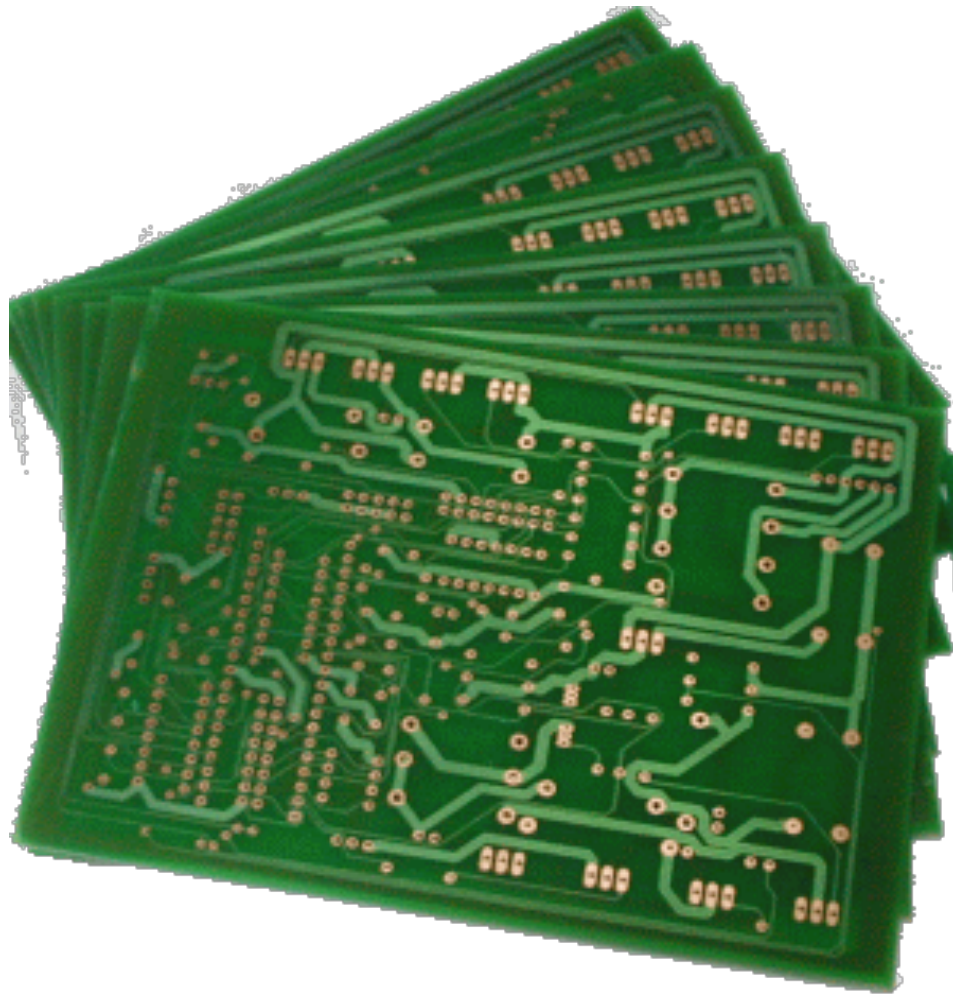
X Drivers



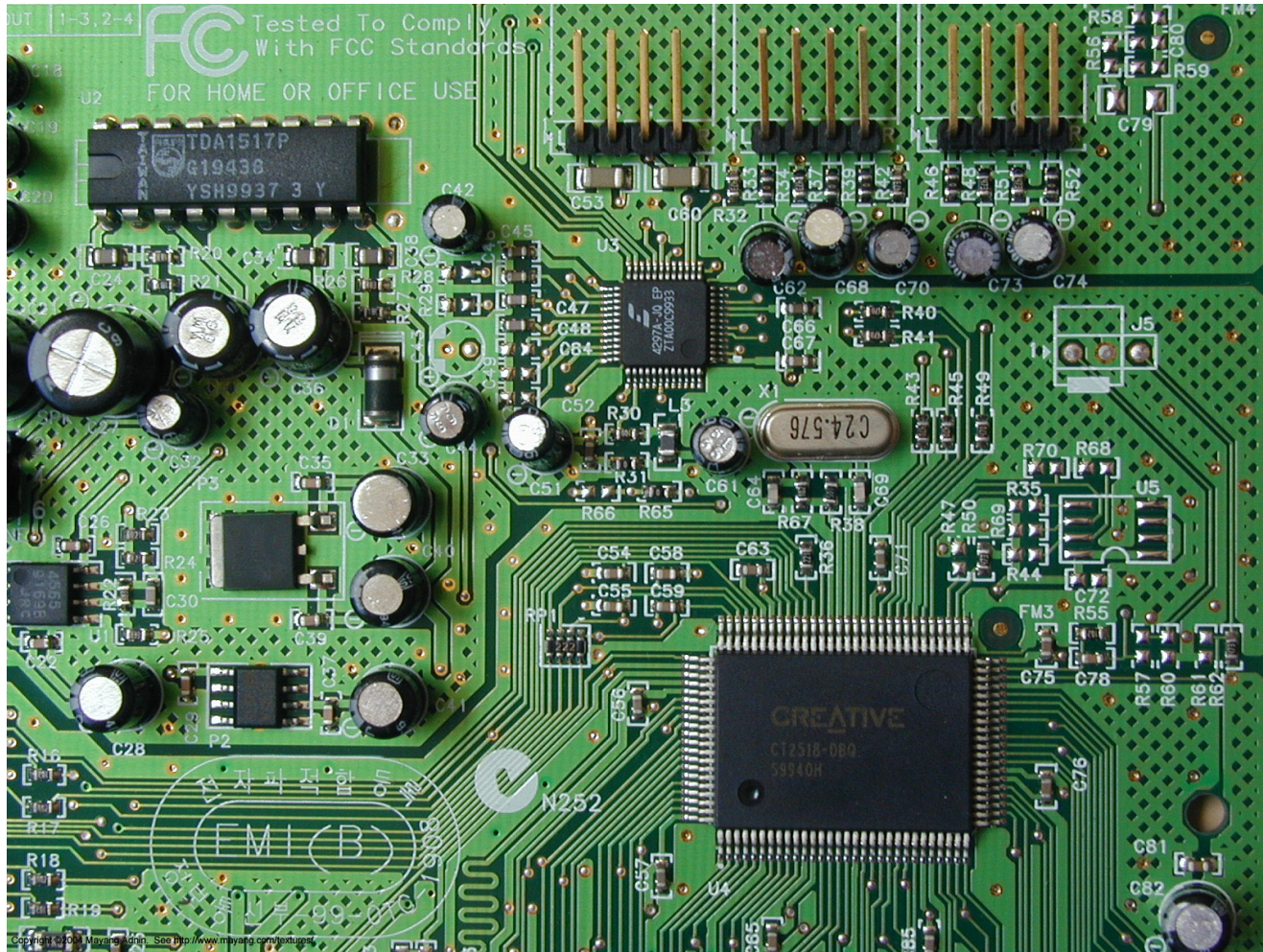
# Core Memory



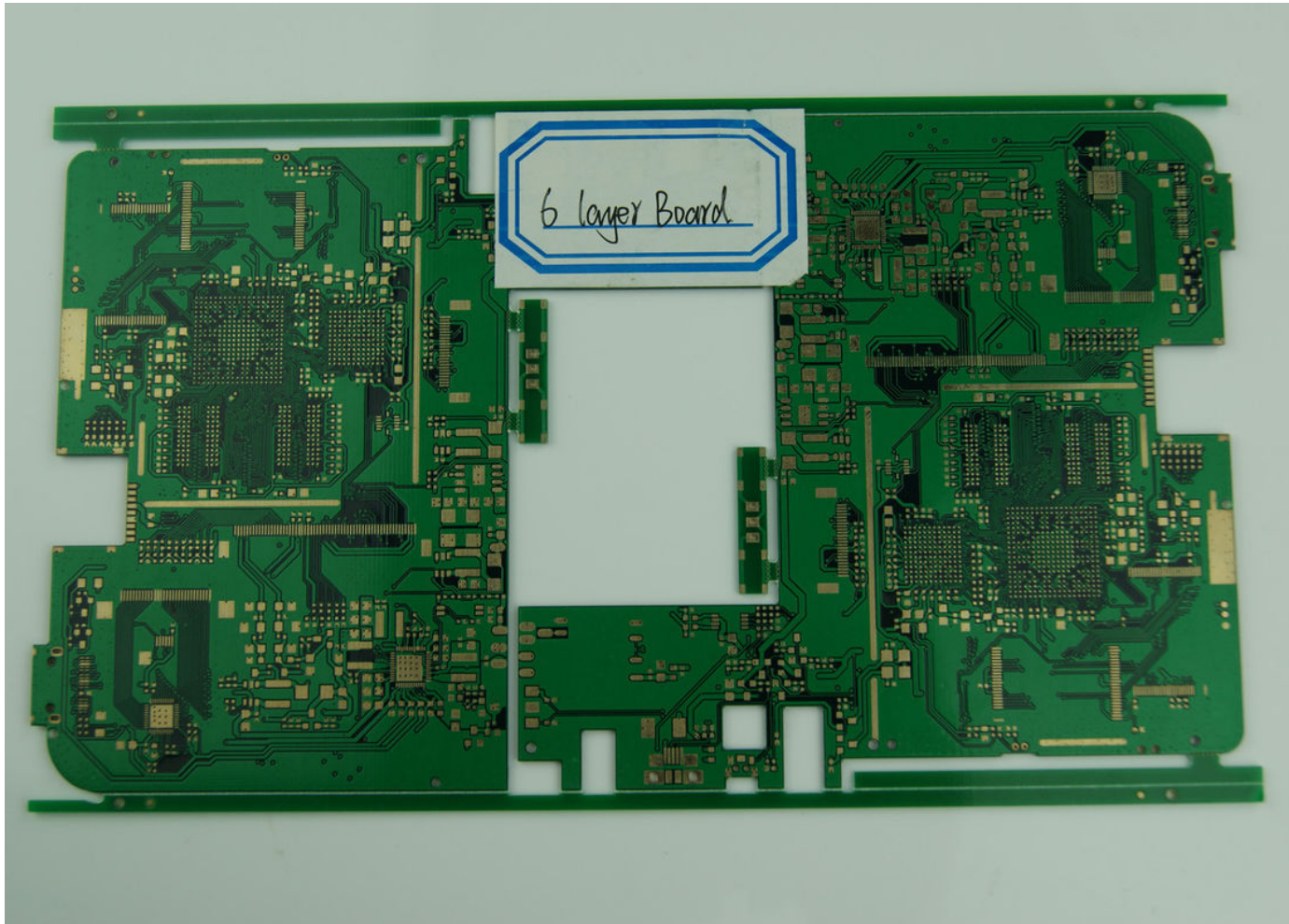
# PCBs (Printed Circuit Boards)



# PCB

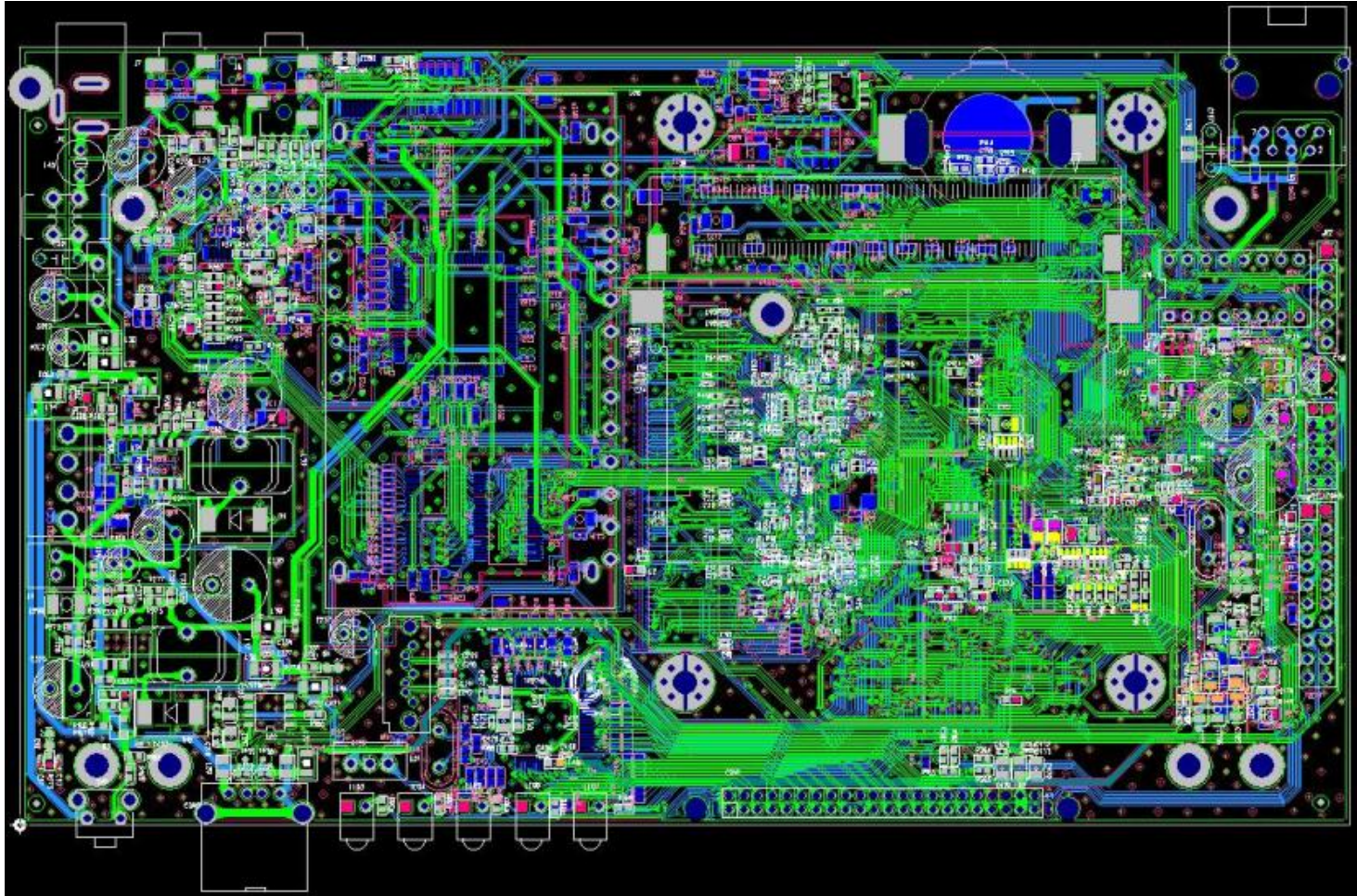


# Multilayer PCB

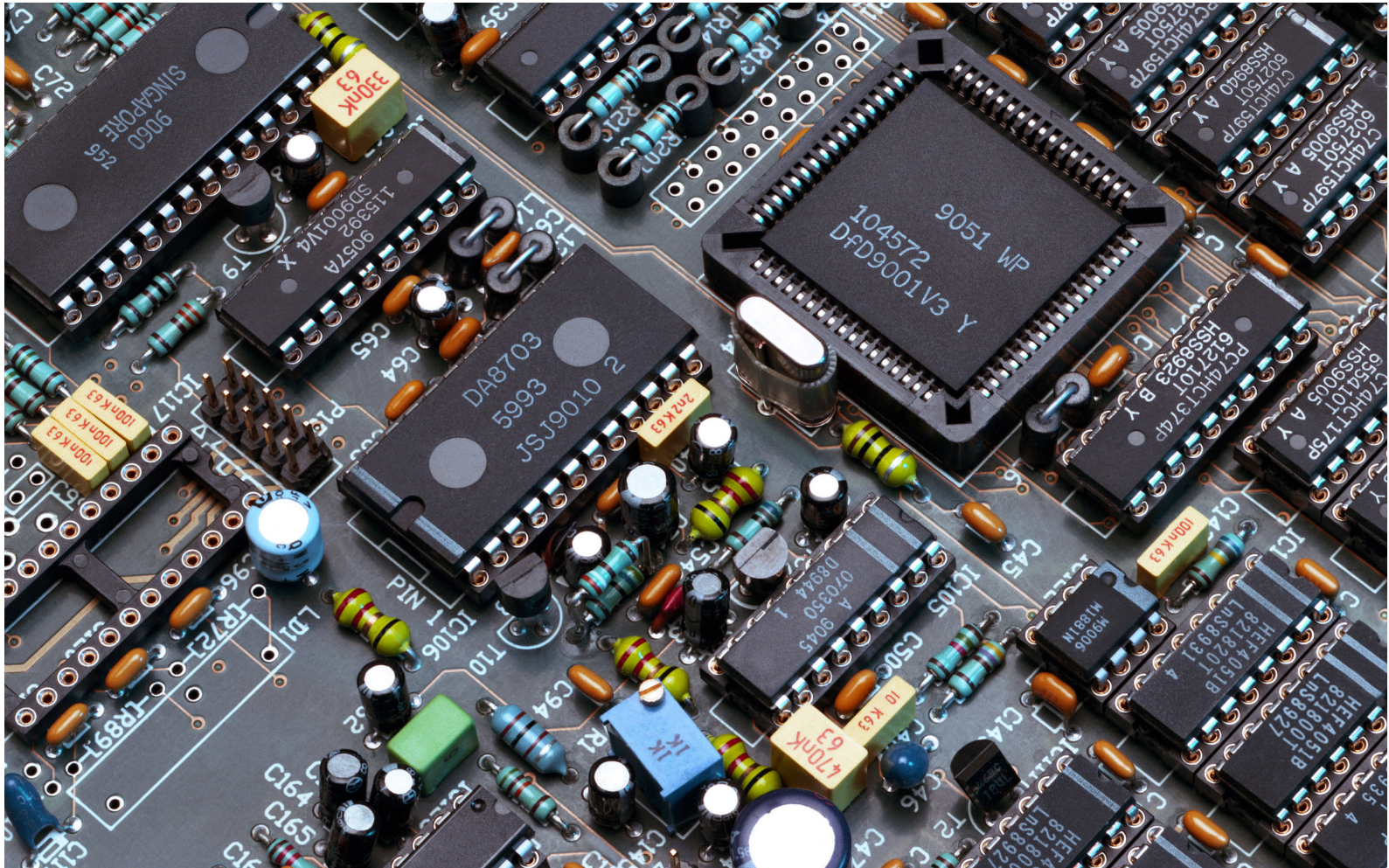




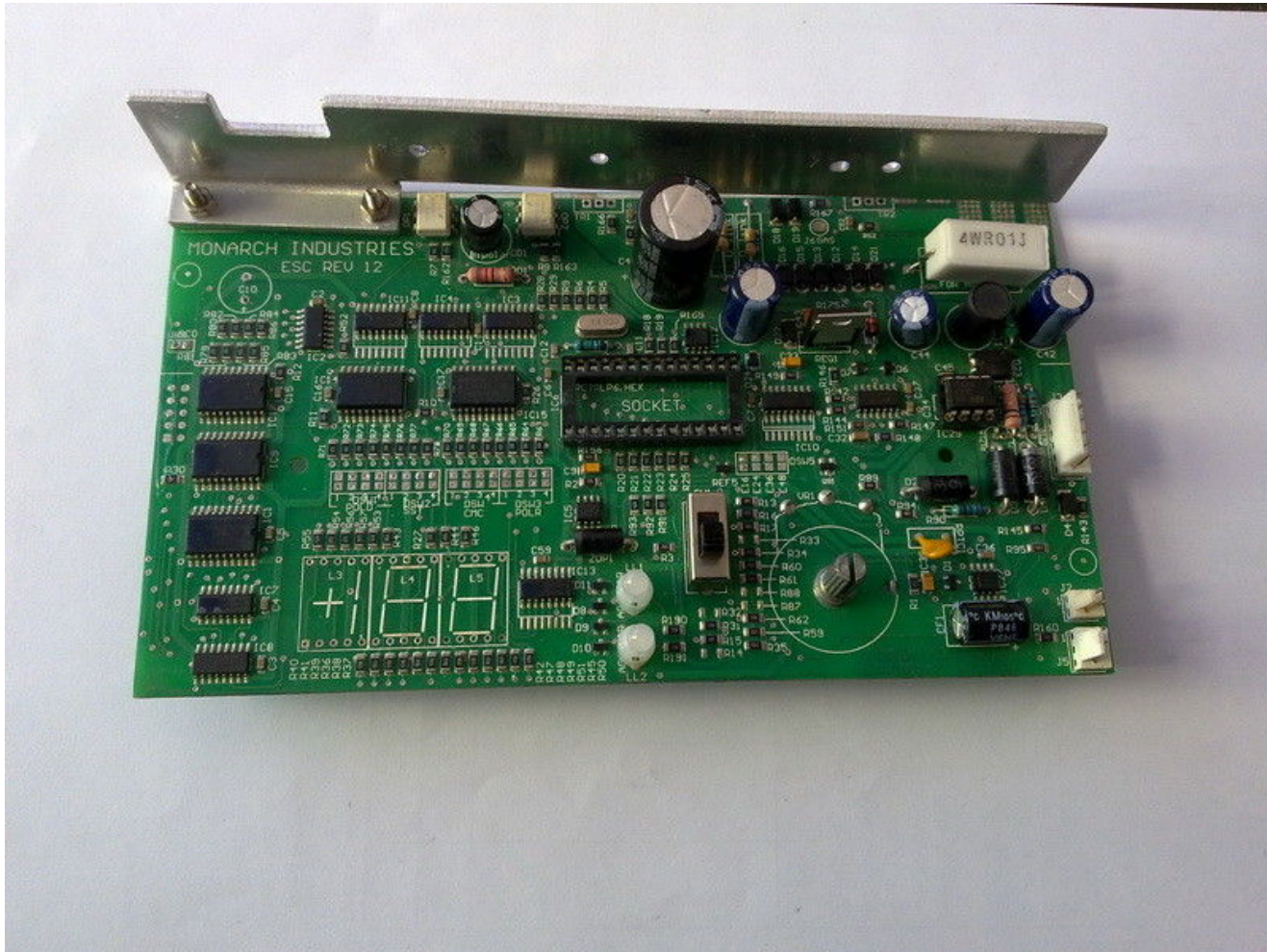
# Complex PCB

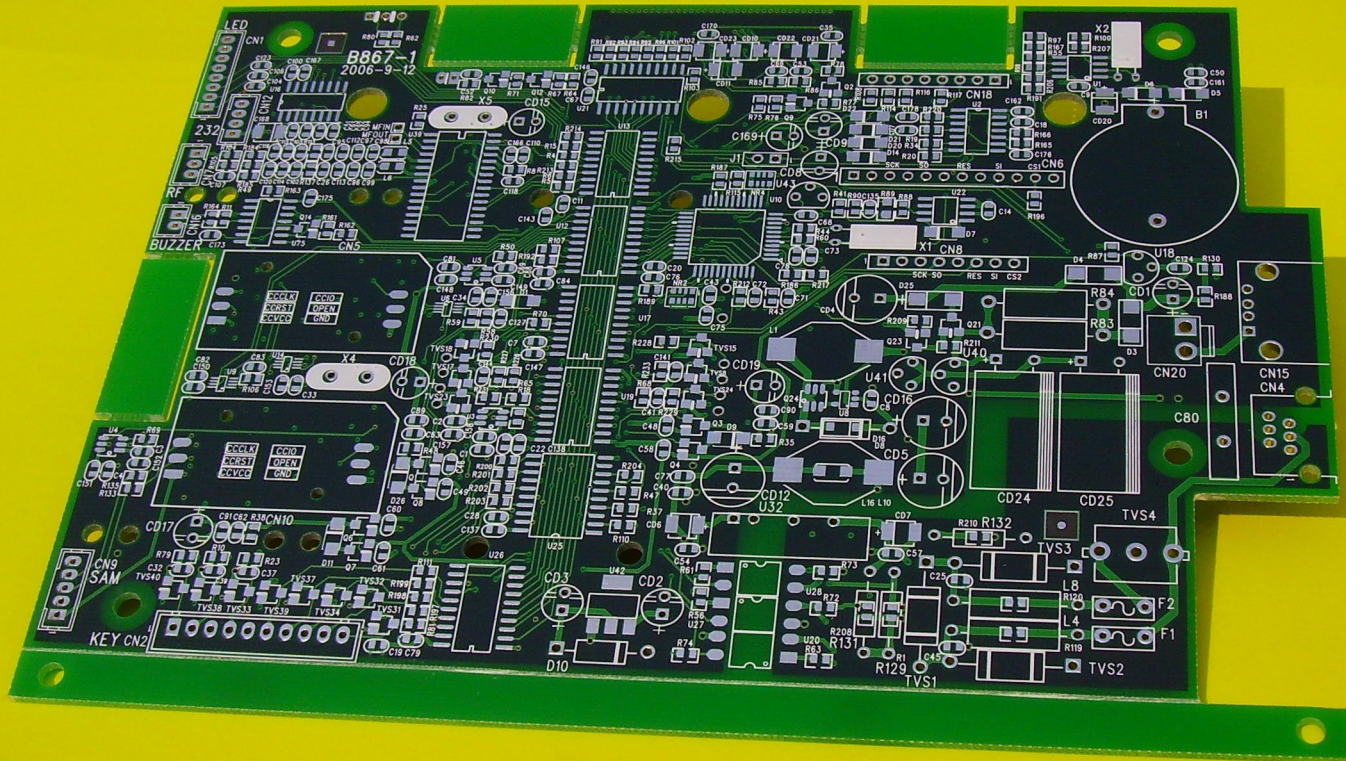


# PCB with sockets



# PCB with sockets





# Populated PCB

