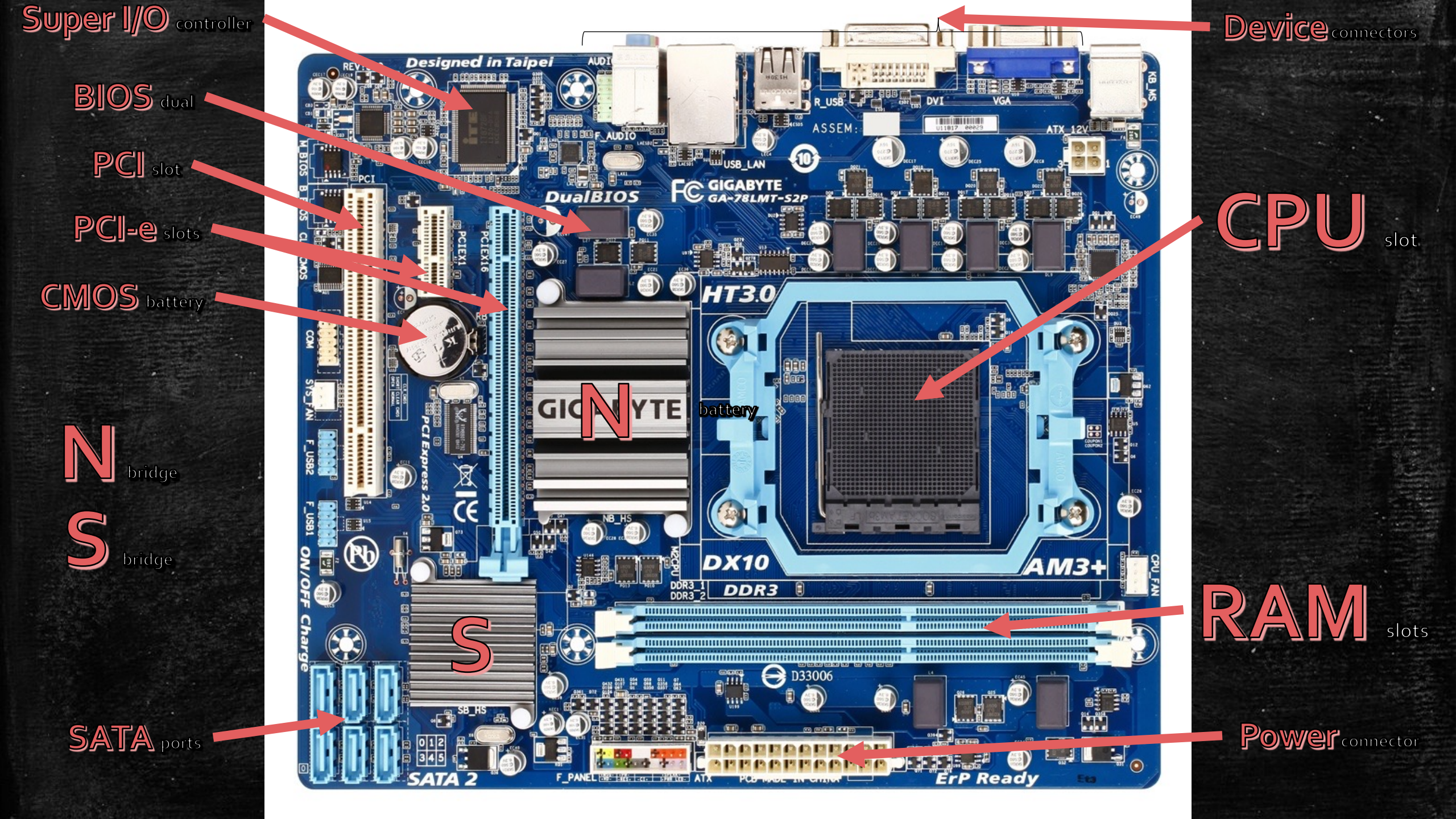
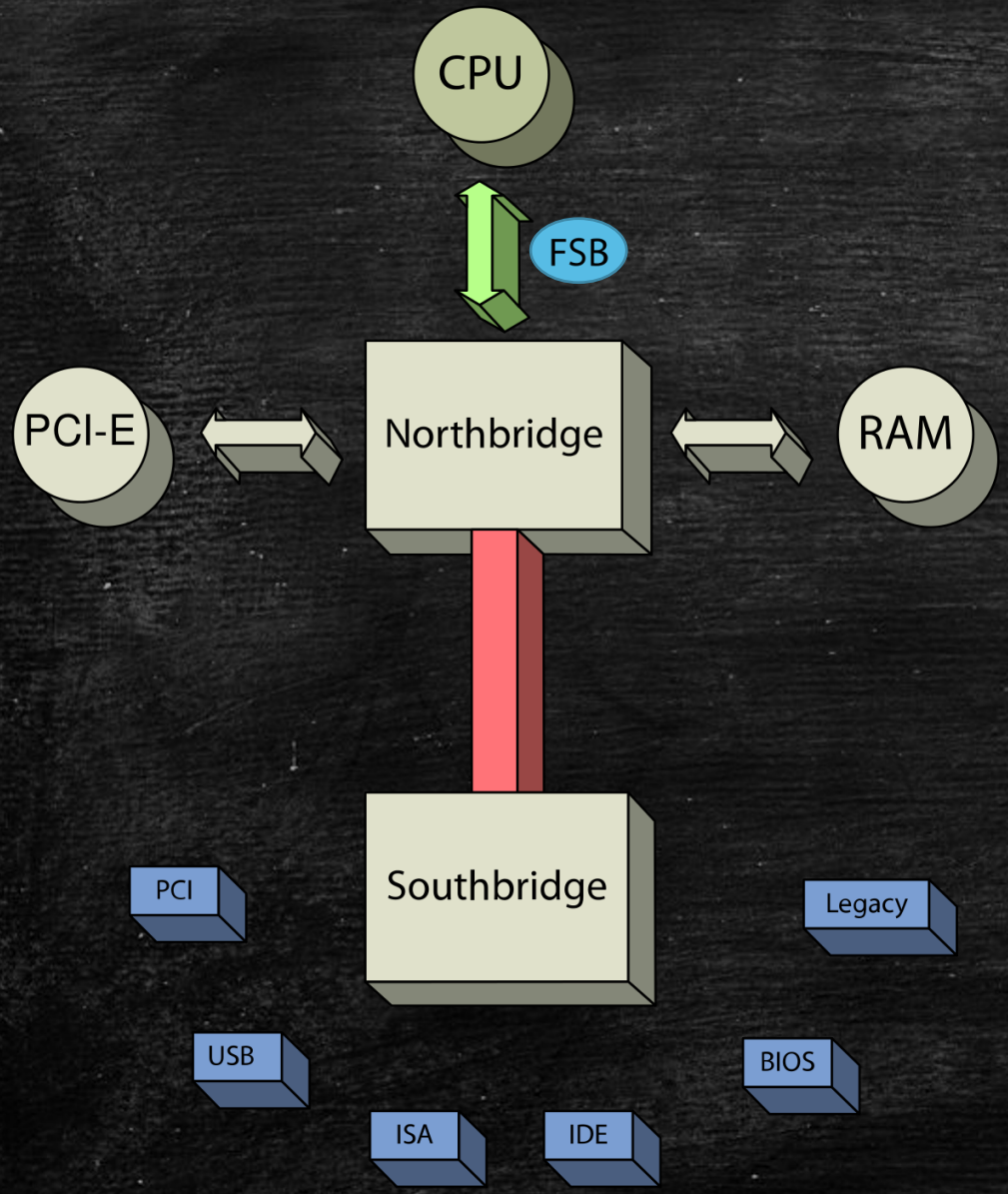
Motherboards

An IDT Tour


Super I/O controller
BIOS dual
PCI slot
PCI-e slots
CMOS battery
N bridge
S bridge
SATA ports
Device connectors
CPU slot
RAM slots
Power connector
Designed in Taipei
DualBIOS
GIGABYTE
GA-78LMT-S2P
HT3.0
DX10
AM3+
DDR3
battery
SATA 2
ErP Ready



North

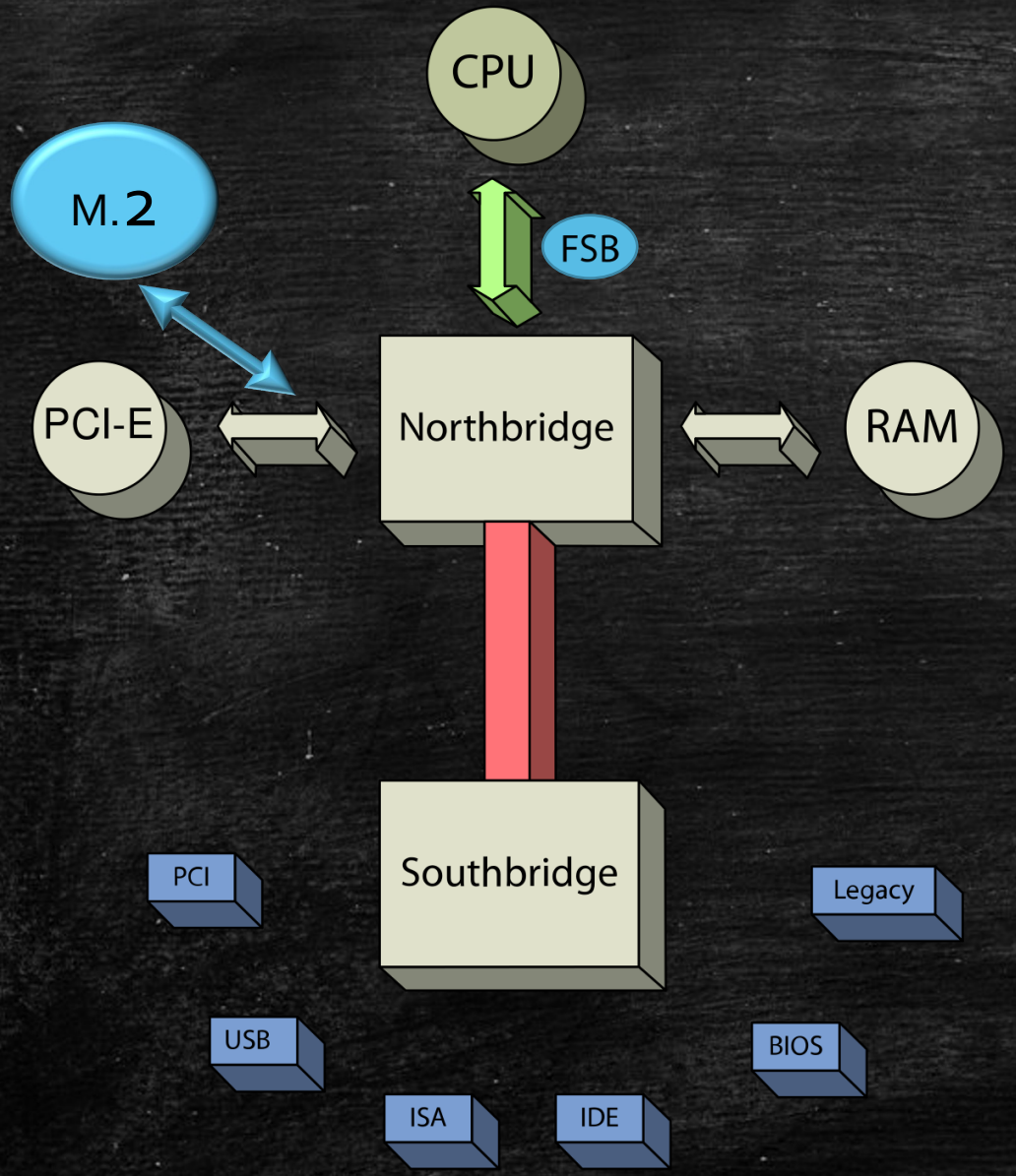
CPU
RAM
PCI-E

South

I/O Controller Hub
Connects North to:

- PCI
- USB
- ISA
- BIOS
- HDD
- Input Devices


INTEL® SSD 760p SERIES
SN: BTHH812202T6512D
SA: J85744-100
PBA: J60311-101
CAN ICES-3(B)/NMB-3(B)
WARRANTY VOID IF REMOVED
DUID: 2FFC41848030ED1F73019DB353EE1CC7
512GB RATED DC 3.3V 1.35A
Model: SSDPEKKW512G8
EUI64: 5CD2E42381012E2C
FW: 001C
www.intel.com
LBA 1,000,215,216
Made in China
E139761
D33025
RoHS
PCI EXPRESS
nvm EXPRESS



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Terminology

Front Side Bus	Connects CPU to Northbridge
PCI	Peripheral Component Interconnect
USB	Universal Serial Bus
ISA	Industry Standard Architecture (16bit)
IDE	Integrated Drive Electronics (Hard Drive Bus)
BIOS	Basic Input Output System
Legacy Ports	Sound, Microphone, etc.
PCI-E	Peripheral Component Interconnect (express) – Connects graphics card to NB

SATA

Serial ATA

Faster, modern, standard connection protocol for internal drives

Powering Up

Pushing the Power Button On

1. Hardware Powers up
2. Basic Input Output System (BIOS) or (modern) Unified Extensible Firmware Interface (UEFI) loads.
    1. Loads from the Complementary Metal Oxide Semiconductor (CMOS) chip which is powered by the CMOS Battery (Holds date/time/settings)
3. UEFI/BIOS tests the hardware Power On Self Test (POST)
4. (Intel CPUs have Intel Management Engine) because UEFI is like a mini operating system
5. System looks for a "Boot Device" – normally a hard drive
    1. On servers, etc. it can be a thumb drive, system DVD or other storage

Pushing the Power Button On

6. Bios looks at the Master Boot Record (Very beginning of the boot device) to run the "bootloader code" which does the job of loading the OS
    1. On Windows the bootloader finds the Windows OS loader. This loads the kernel. The Kernel loads the registry then drivers marked "BOOT_START." Next is the session manager (Smss.exe) which loads more drivers, which bring the user to the login screen.
    2. On Linux, the GRUB boot loader loads the kernel, starting the init system (systemd). This starts up other services and user processes to the login prompt.
7. "Startup programs" actually load after your login.
8. Some background services or daemons (Linux and macOS) are started when your system boots.