

PCMCIA :

- Personal Computer Memory card International Association
- Credit-card sized
- **Parallel PC card :**
 - 16-bit on Card Bus
 - 2 functions max
 - 68-pin
- **CardBus**
 - 32-bit
 - Up to 8 functions
 - 68-pin

Type	Length	Width	Thickness	Use
Type I	85.6mm	54.0mm	3.3mm	Flash Memory
Type II	85.6mm	54.0mm	5.0mm	I/O (modem,NIC,...)
Type III	85.6mm	54.0mm	10.5mm	Hard Drives

ExpressCard :

- High-performance serial version of the PC Card
- 2 widths (34mm / 54mm)
- USB 2.0 bus / PCIe bus

Standard	Maximum Theoretical Throughput
PC Card on 16-bit bus	160 Mbps
CardBus PC Card on PCI bus	1056 Mbps
ExpressCard on USB 2.0	480 Mbps
ExpressCard on PCIe	2.5 Gbps

Port Replicator :

- Offers uncommon and common PC ports

Docking Station :

- Offer legacy and modern single and multi function ports
- Proprietary connection



Lenovo Docking Station

Batteries :

- **Nickel-Cadmium (Ni-Ca) :**
 - “memory effect”
- **Nickel-metal Hydride :**
 - Heat generator
 - Overcharging
- **Lithium :**
 - No “memory” problems
 - Shorter lifespan

Power Management

- **SMM (System Management Mode)**
 - CPU stopping or slowing down, without data loss
 - Special BIOS and OS required
- **APM (Advanced Power Management) / ACPI (Advanced Configuration and Power Interface)**
 - **Requires:**
 - **SMM** capable CPU
 - **APM**-compliant BIOS
 - Energy Star devices → they can shut off when not used
 - **Levels :**
 - **Full On** : Everything running on full power
 - **APM Enabled** : CPU and RAM full power, unused devices might shut down
 - **APM Standby** : CPU is stopped, RAM stores all programs, all peripherals shutdown
 - **APM Suspend** : Everything shut down for lowest power use, hibernation.

- **ACPI global (G) and sleeping (S) system power state:**
 - **G0 (S0)** Working State
 - **G1** Sleeping state mode. Divided in:
 - **S1** CPU stops processing, power maintained to CPU and RAM
 - **S2** CPU powered down
 - **S3** Sleep or Standby mode. Power to RAM on
 - **S4** Hibernation mode. RAM stored to nonvolatile memory or drive and powered off
 - **G2 (S5)** Soft power off mode. Some devices can wake system
 - **G3** Mechanical off mode. Everything but Real Time clock(RTC) powered down

Laptop Disassembling :

- Document and label cable and screw locations
- Organize parts

References :

- Mike Meyers - CompTIA A+ Certification All-In-One Exam Guide 8th edition
- Images :
 - Lenovo Docking Station :
http://www.bhphotovideo.com/images/images2500x2500/lenovo_40a2009ous_ultra_dock_90w_1011945.jpg