



Internal Parts of Keyboard & Their Functionality





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What is Keyboard?

- Input Device
- Used to enter data and commands
- Set of keys arranged and specific layout



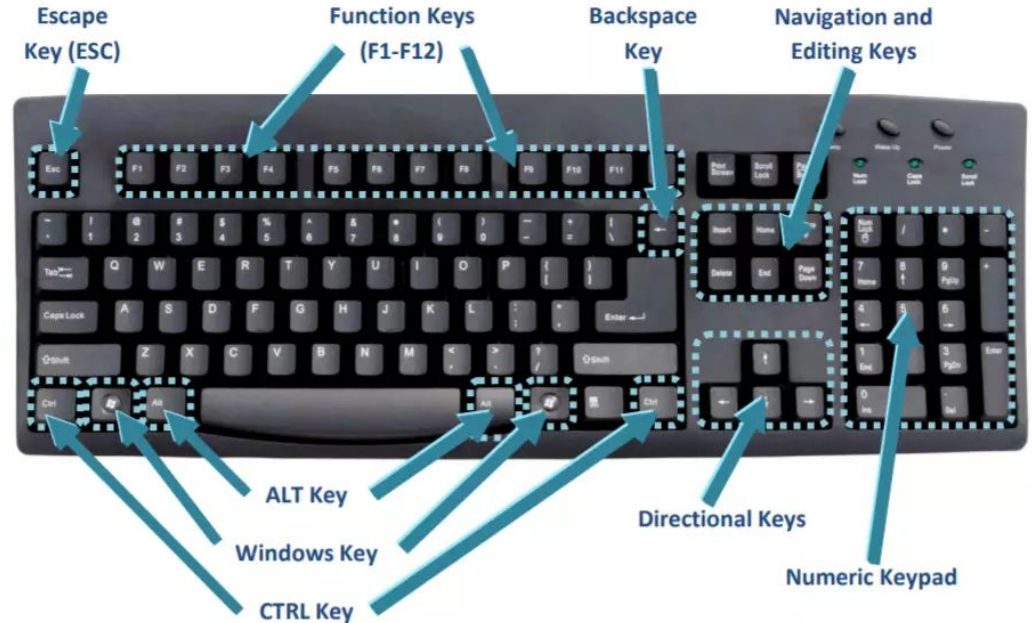
Types of Computer Keyboard

1. QWERTY Keyboard
2. Wireless Keyboard
3. Bluetooth keyboards
4. USB Keyboard
5. Gaming Keyboard
6. Mechanical Keyboard
7. Numeric Keyboard



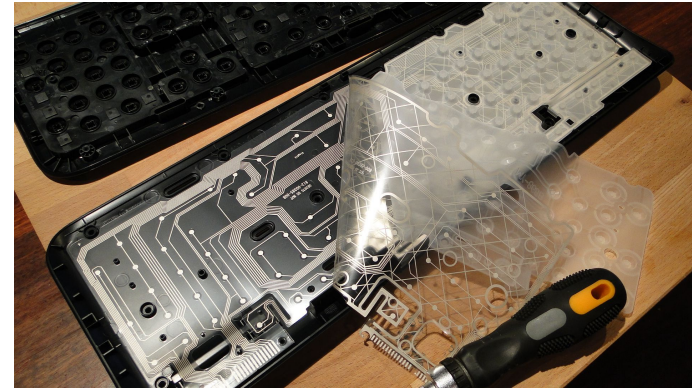
Anatomy of a Keyboard: Keys

- Functional Keys
- Modifier Keys
- Enter Key
- Backspace Key
- Space Bar
- Arrow Keys
- Numeric Keypad
- Alphabetic Key



Anatomy of a Keyboard: Critical Parts

1. Keycaps
2. Dome-Shaped Rubber Buttons
3. Switches
4. Plastic Sheets & Their Embedded Circuitry
5. Microcontroller
6. COB IC of Keypad to Process Signals





Keycaps

- Plastic / Metal
- Removable
- Visual Interface



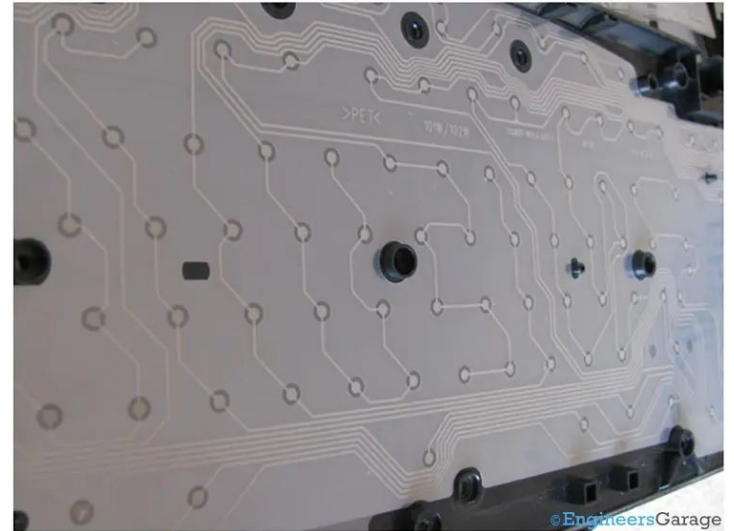
Dome-Shaped Rubber Buttons

- Known as Dome switches
- Use on Membrane Keyboards
- Made of Silicone or Rubber Material
- Provide Tactile Feedback and a Satisfying Typing Experience



Plastic Sheets & Their Embedded Circuitry

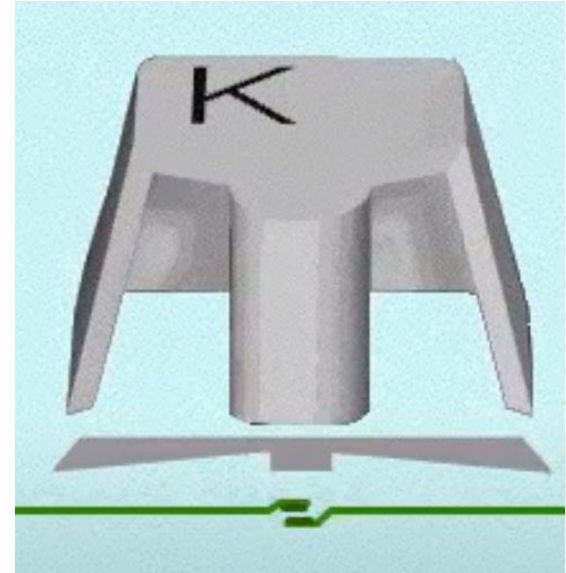
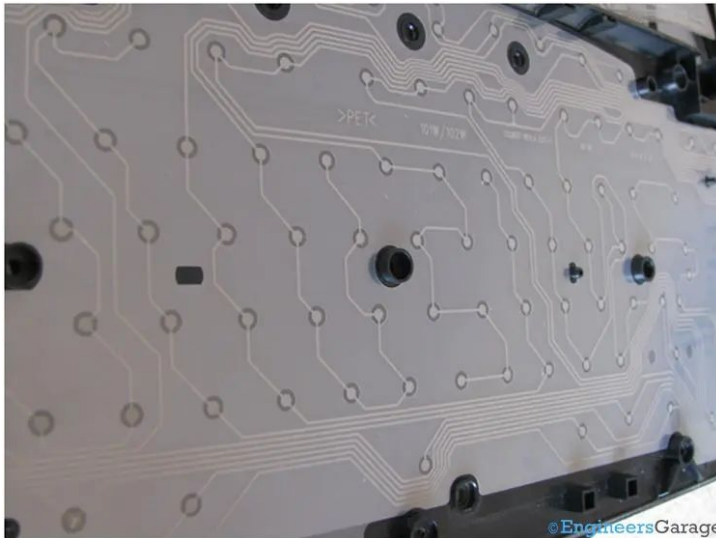
1. Made of flexible plastic materials
2. Controller & Communication
3. Thin metal layers, creating a network of electrical pathways





Switches

1.



Wires

1. Electrical Signal Transmission
2. Interconnection of Components
3. Keyboard Matrix Connectivity
4. Signal Conditioning
5. Power Distribution



Semiconductor Chip

Integrated circuits used in keyboards to process

1. Signal Processing
2. Data Encoding & Decoding
3. Communication Interface
4. LED Control
5. Power Management



Microcontroller / Internal Processor

1. Scanning the matrix
2. LED control

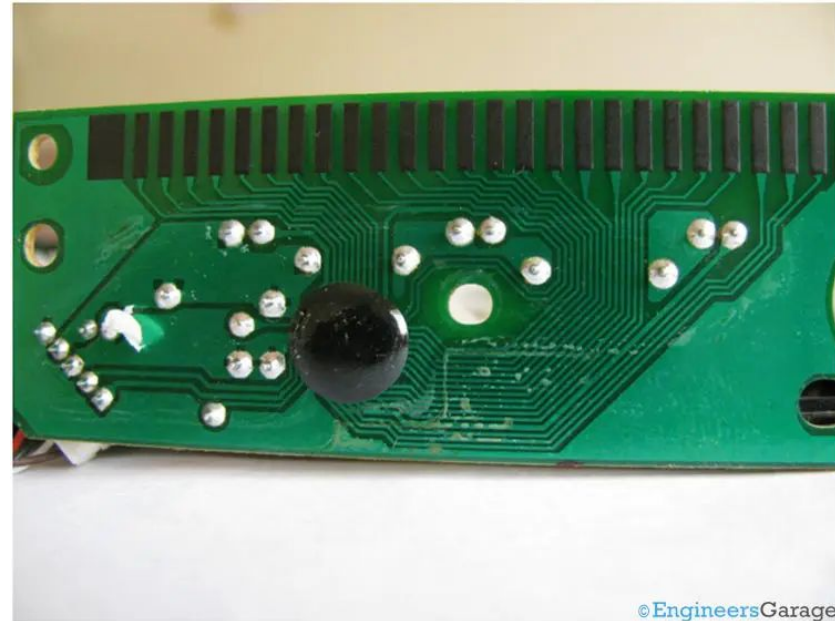
4 Components, light, switch, 2 battery, circuit board, Oscillator, 2.4 GHz Antena .



COB IC of Keypad to Process Signals

COB: Chip on Board

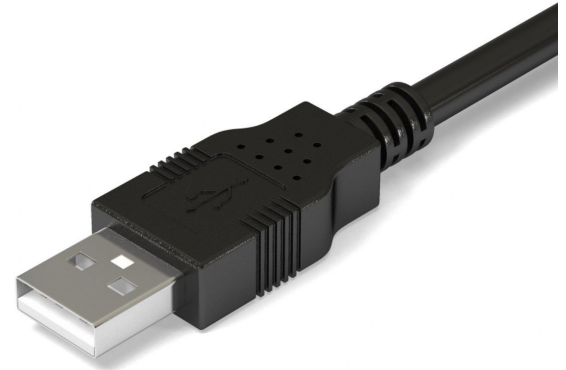
1. Signal Processing
2. Keycode Generation
3. Communication Interface





USB or Bluetooth Connection

1. Power Supply
2. Data Communication





How the Internal Connection Works?

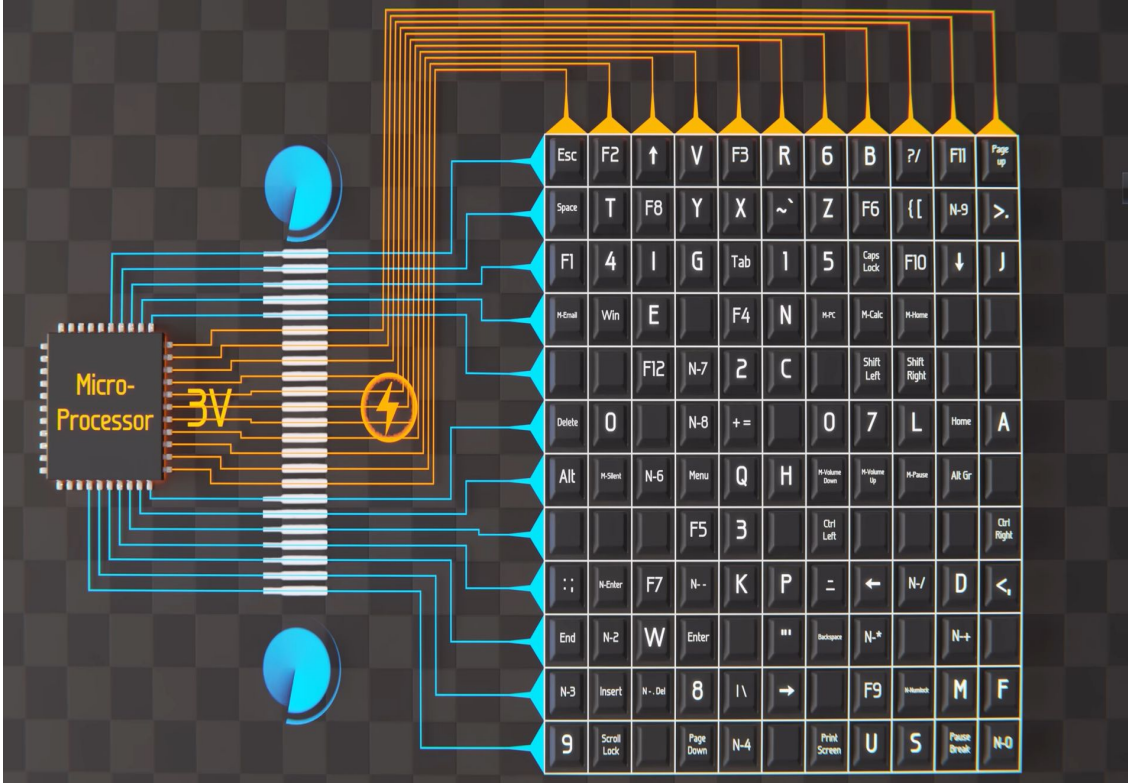
Matrix Key

1. Key press detection
2. Row and Column Scanning
3. Keycode Generation
4. Communication with Microcontroller

Keyboard Matrix

Esc	F2	↑	V	F3	R	6	B	?/	F11	Page up
Space	T	F8	Y	X	~`	Z	F6	{[N-9	>.
F1	4	I	G	Tab	1	5	Caps Lock	F10	↓	J
M-Email	Win	E		F4	N	M-PC	M-Calc	M-Home		
		F12	N-7	2	C		Shift Left	Shift Right		
Delete	0		N-8	+ =		0	7	L	Home	A
Alt	M-Silent	N-6	Menu	Q	H	M-Volume Down	M-Volume Up	M-Pause	Alt Gr	
			F5	3		Ctrl Left				Ctrl Right
::;	N-Enter	F7	N- -	K	P	=	←	N-/	D	<_
End	N-2	W	Enter		'''	backspace	N-*		N-→	
N-3	Insert	N- - Del	8	\	→		F9	M-Back	M	F
9	Scroll Lock		Page Down	N-4		Print Screen	U	S	Pause Break	N-0

How the Internal Functionality Works?





Thank you for your concentrations!
Ask us If have any questions.