(inter-integrated circuit bus)

Purpose: to communicate between ICs on a board with fewer pins and traces.

SCL: clock line provided by leader

SDA: bi-directional serial data.

Pull-up resister

In electronic [logic circuits](https://en.wikipedia.org/wiki/Logic_circuit), a **pull-up resistor** or **pull-down resistor** is a [resistor](https://en.wikipedia.org/wiki/Resistor) used to ensure a known state for a signal.[[1]](https://en.wikipedia.org/wiki/Pull-up_resistor#cite_note-1) It is typically used in combination with components such as [switches](https://en.wikipedia.org/wiki/Switch) and [transistors](https://en.wikipedia.org/wiki/Transistor), which physically interrupt the connection of subsequent components to [ground](https://en.wikipedia.org/wiki/Ground_(electricity)) or to [VCC](https://en.wikipedia.org/wiki/IC_power-supply_pin). Closing the switch creates a direct connection to ground or VCC, but when the switch is open, the rest of the circuit would be left floating (i.e., it would have an indeterminate voltage).

|  |  |  |  |
| --- | --- | --- | --- |
|  | Idle | Start Condition | Stop Condition |
| SDA | HIGH | HIGH->LOW | LOW->HIGH |
| SCL | HIGH | HIGH | HIGH |

Address is provided by the manufacture.

SPI: Serial Peripheral Interface