

Basics

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- 2 wire serial communication meaning data's sent 1 bit at a time.
 - Serial Data Line (SDL)
 - Serial Clock Line (SCL)
- Supports multiple controllers and targets. This is possible because we specify destination addresses.
- Speed Modes:

Standard: 100 Kbps

Fast: 400 Kbps

Fast Plus: 1 Mbps

High Speed: 3.4 Mbps

Ultra-Fast: 5 Mbps

Write only

} Only if bus capacitance and drive capability allow so

2.1 Two-Wire Communication

An I²C system features two shared communication lines for all devices on the bus. These two lines are used for bidirectional, half-duplex communication. I²C allows for multiple controllers and multiple target devices. Pullup resistors are required on both of these lines. [Figure 2-1](#) shows a typical implementation of the I²C physical layer.

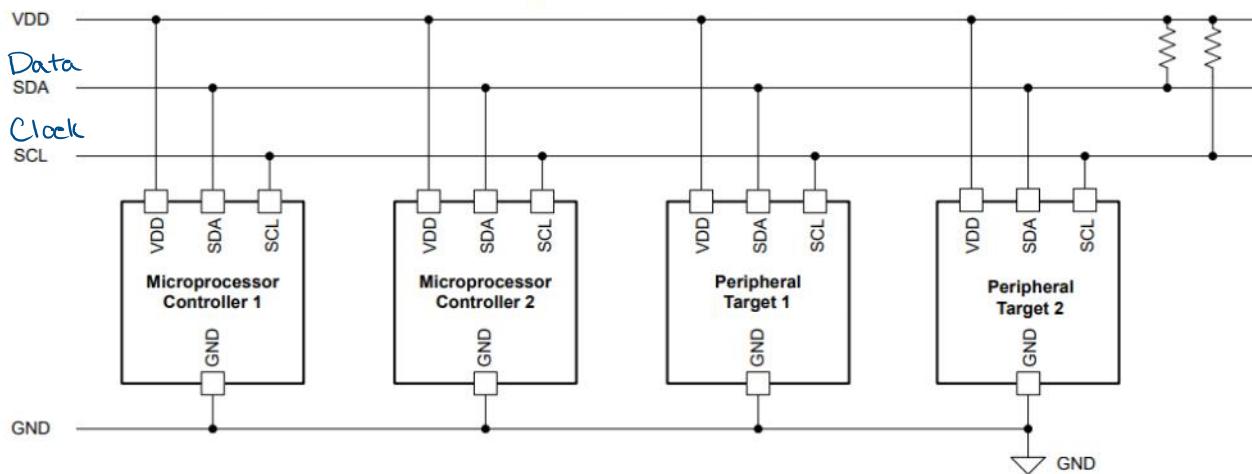


Figure 2-1. Typical I²C Implementation

- Half-duplex, so only a single device can talk at a time. This eliminates any contention, allowing multiple controllers and targets on the same line.