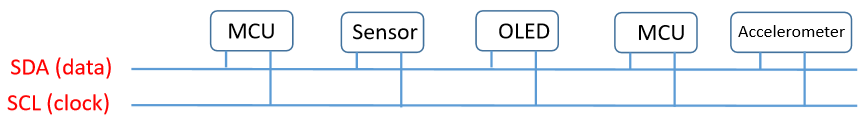
**Serial Communications II**

**I2C Basics**

Inter-integrated circuit = (I2C, I2C or IIC) communications

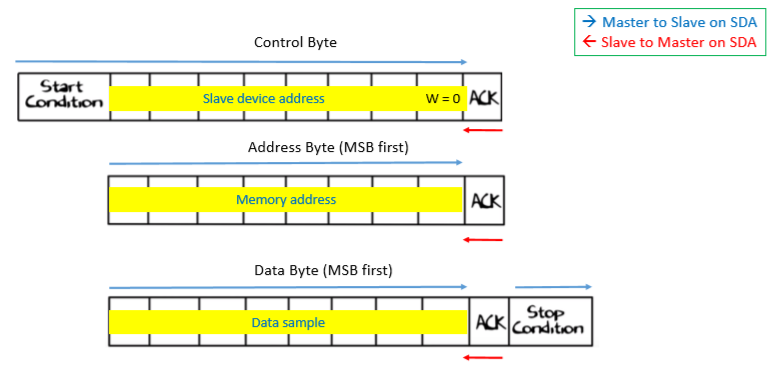
* Simple, robust, inexpensive easy-to-use communications
* Standard: 100 kbps, full-speed: 400 kbps, fast: 1Mbps, high-speed: 3.33 Mbps
* **Two-wire** bus structure with up to 127 devices connected in parallel

If **MCU** talks with the **OLED**, disable all other channels

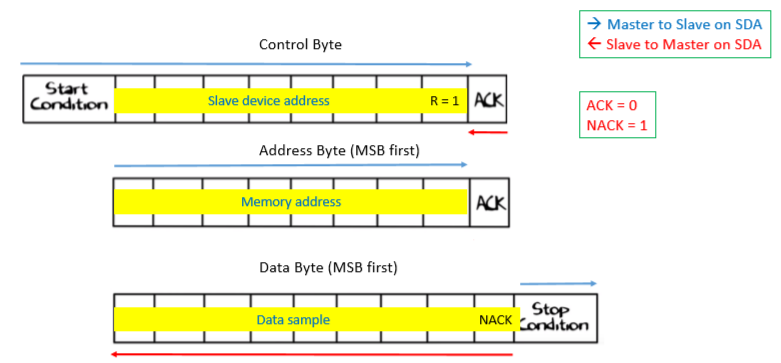
**Robust communications**

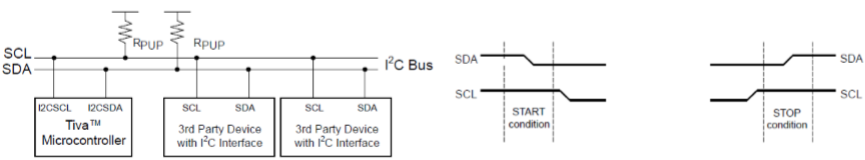
* Verify the correct reception of EVERY byte via ACK=Acknowledged
* Built-in arbitration to eliminate bus conflicts

**Easy-to-use communications**

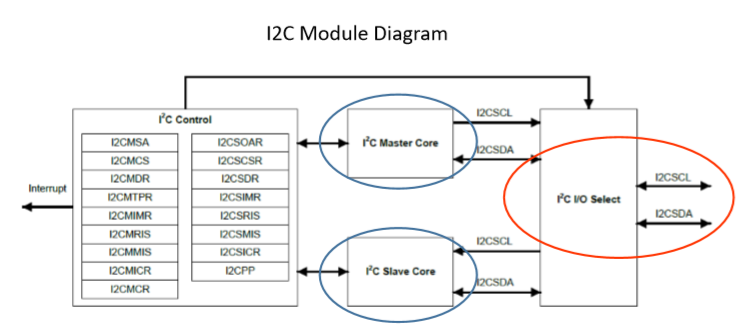
* I2C Protocols consist of 8-bit words
* Master-slave handshaking (•Master generates clock signal and initiates communication • Address byte for selecting the device for data transmission • R/W bit for declaring reading or writing operation)

**Serial Packet Structure: Write**

**Serial Packet Structure: Read**

**I2C on Tiva C-Series Launchpad**

* 4 I2C modules
* Half duplex ( transmission can work both directions but **not simultaneously**)
* Can be configured as Master or Slave

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