

Interface your I2C device on the network

I2C bus is a 2 wires serial data bus invented by Philips™ about 20 years ago. Its application fields concerns small distance connection to sensors, I/O chips, etc. It represents a very simple and cost effective way to make devices communicate together, without using more than 2 I/O lines. The bus speed varies from 100kHz to 1MHz (clock speed), achieving a maximum rate of ~1Mbit/s. A maximum of 127 slave devices can be connected to the FMod-TCP (master of I2C). The I2C bus is formed by two lines: SCL (Serial Clock) and SDA (Serial Data). The clock (SCL) is always provided by the Master but the data (SDA) line is used by the master and the slaves alternatively in order to have bidirectional communication.

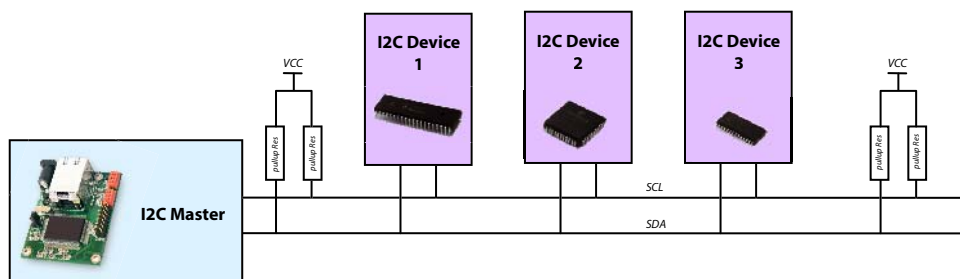


Figure 1 : I2C connection principle.

Note: Due to the fact that the bus is an open collector system, pull-up resistors between 1k and 10k have to be put at each end of the bus lines. For simplicity purposes, two pull-ups of 4.7k are already present on the master side on the FMod-TCP card.

On the market there is a huge choice of different I2C enabled chips, that can do several different tasks. Here you will find some examples of I2C devices that can be used with the FMod-TCP:

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| Temperature sensors : | National Semiconductors LM75 |
| AD and DA converters : | Philips PCF8591 |
| Parallel bus controllers : | Philips PCA9564 |
| LCD drivers : | Philips PCF2116 |
| USB interface: | Philips PDIUSB11 |
| Video and/or Audio Switches : | Philips TDA8540, Sony CXA2040AQ or ST STV6412A, STV6688, TEA6425 |
| I/O expanders: | Philips PCA9554 |
| Memories: | 24LC EEPROM family |
| Multiplexers, Latches ... : | Philips PCA8550 |
| Voltage measurement devices: | Philips NE1619 |



For further information about this bus, please visit Philips Semiconductor web site at this address: www.semiconductors.philips.com/i2c or www.philipslogic.com/i2c