

Low Power Sensor Application

In the accordance with the requirements of the project:

- Required MCU should have 32-Bit Low-Cost and Low-Power consumption,
- Required sensor should have low power consumption and digital interface features.

According to the defined requirements;

It has been decided to use "NXP LCP485" as MCU. This decision has been made due to the following features of this MCU:

- Arm® Cortex®-M0+ core
- 32-bit MCU up to 30MHz
- 4 Low Power Modes
 - Sleep Mode
 - Deep-Sleep Mode
 - Power-Down Mode
 - Deep Power-Down Mode
- Special Low Power Self-Wake-up Timer with internal 10Khz clock source
- Low Cost
- 64Kb of Flash Memory
- 16Kb of SRAM
- Switch matrix
- CRC Engine
- Capacitive Touch Interface
- 5 Uart, 2 SPI and 2 I2C interface

This MCU has suitable and adequate characteristics for the sectors or applications related with IOT, industrial, Smart Device etc. Thanks to the low power features of it, mobile products can be developed. Additionally, as it is a low-cost and due to its accessibility, the cost value of the project decreases.

It has been decided to use "Bosch BME280" as sensor. This decision has been made due to the following properties of this sensor:

- Developed specifically for mobile applications and wearables
- Low Power Consumption
- Small Size
- Temperature, Humidity and Barometric measurement
- High linearity and high accuracy
- Long-term Stability
- High EMC robustness
- Fast Response time
- Digital Interface
- Reliable
- Wide Operation Range
 - Pressure : 300...1100 hPa
 - Temperature : -40...85°C

This sensor has been chosen due to the fact that it has been specifically designed for mobile and wearable products, low power consumption and it contains 3 different sensors within itself.

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