

1. Introduction : Zigbee Module(MC85A00) is data transfer module, using in measuring instrument. Measuring instrument contains Natural conditions such as temperature and humidity

2. Features

This module receives the command of the main module from the measuring equipment and sends the measured data to the monitoring device or transmits the data received from the monitoring device to the main module.

This module is a device that enables measurement equipment to communicate wirelessly (ZIGBEE), and interacts with the main module via UART.

It also has a built-in 2.4-MHz amplifier, which helps to transfer data over longer distances.

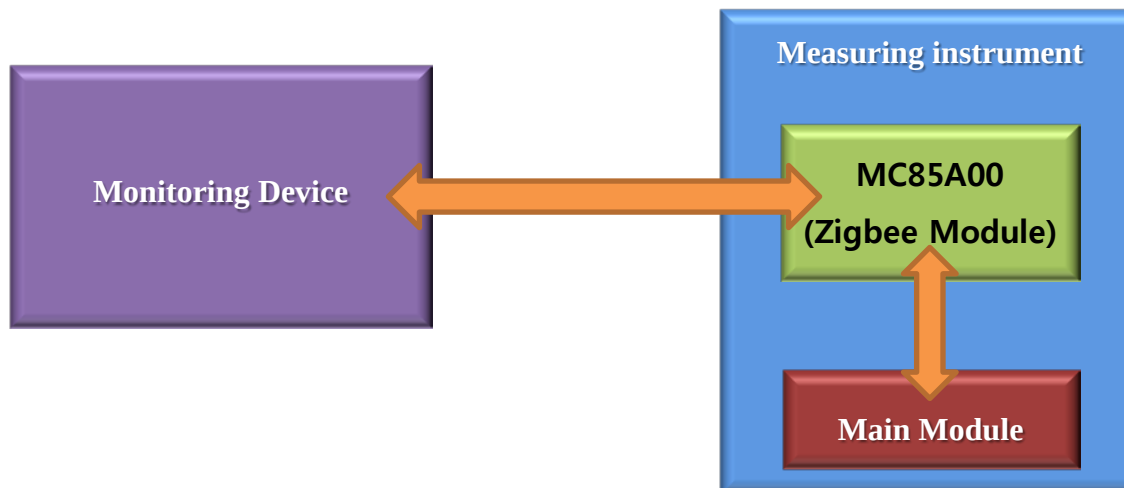
3. Operation sequence

First, monitoring device request measured data to measuring instrument using ZIGBEE.

Second, zigbee module(MC85A00) request measured data to main module using UART.

Third, main module send measured data to zigbee module(MC85A00) using UART.

Forth, zigbee module(MC85A00) send measured data to monitoring device using ZIGBEE.



4. Hardware information : All control of the Zigbee module is done in CC2630 (TI). CC2592 (TI) is used to increase the communication distance. Between the main module and this module are connected through a pin header and a pin header socket(24pin), each of which has its own function. (See the figure below)

Pin Configuration (Top View)

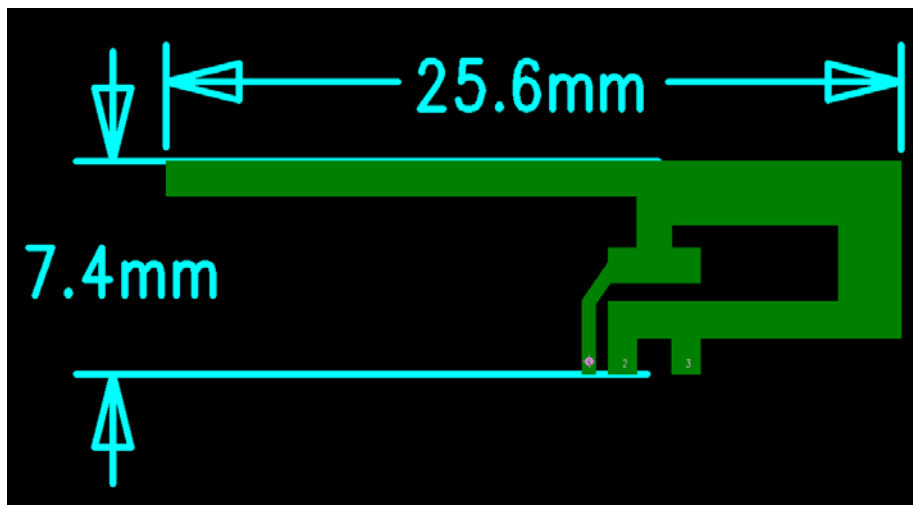
Pin No.	Pin Name		Pin No.	Pin Name
1	MCU Reset		2	DIO[29] UART Tx
3	DIO[23] LID		4	DIO[28] UART Rx
5	DIO[24] Relay		6	DIO[30] UART CLK
7	DIO[02] DPSW1		8	DIO[17] SPI SCLK
9	DIO[03] DPSW2		10	DIO[19] SPI MOSI
11	DIO[04] DPSW3		12	DIO[18] SPI MISO
13	DIO[08] LED1		14	DIO[14] SPI CSN
15	DIO[09] LED2		16	DIO[05] I2C SDA
17	DIO[10] LED3		18	DIO[06] I2C SCL
19	DIO[11] LED4		20	DIO[25] MRESET
21	VDD 3V3		22	GND
23	GND		24	GND

5. Electrical Characteristics

- Absolute Maximum Supply Voltage(DC) : -0.3V ~ 4.1V
- Absolute Maximum Storage Temperature Range : -40°C ~ 150°C
- Recommended Operating Voltage : 3.3V (Operable from 1.8V to 3.8V.)
- Receiver sensitivity : -100 dBm (Typ.)
- Receiver saturation : +4 dBm (Typ.)
- Frequency error tolerance : >200ppm
- RSSI dynamic range : 100 dB
- RSSI accuracy : ± 4 dB
- Output power : -21 ~ 5 dBm
- Error vector magnityde : 2% (Typ.)

6. Antenna Information

- Material : FR-4
- Thickness : 1/2 oz
- Surface Treatment : OSP



FCC Information

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions :

- (1) This device may not cause harmful interference, and
- (2) This device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for CLASS B digital device, pursuant to Part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try correct the interference by one or more of the following measures:

- 1.1. Reorient or relocate the receiving antenna.
- 1.2. Increase the separation between the equipment and receiver.
- 1.3. Connect the equipment into an outlet on a circuit different from that to which receiver is connected.
- 1.4. Consult the dealer or experienced radio/TV technician for help.

WARNING

Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

End product labelling

The label for end product must include "Contains FCC ID: TX4MC85A00".

"CAUTION : Exposure to Radio Frequency Radiation.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment must be installed and operated with minimum distance of 20 cm between the radiator and your body. This transmitter module is authorized only for use in device where the antenna may be installed such that 20 cm may be maintained between the antenna and users."