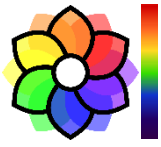
FLOWERMCU

Manual



Version 1.0

bluum.life, LLC

Document Overview

This document provides brief instructions and information for the FLOWERMCU module.

(FCC IDENTIFIER: 2AT2R-FLOWERMCU)

Revision History

Last Updated: November 2019

Additional Information

To inquire about more information, please send an email to technology@bluum.life

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The information and resources provided in this document are intended to be design resources and to inform integrators on the intended use of the product. It is the sole responsibility of you to ensure that your use bluum.life products is used correctly for your application and is in accordance with all applicable regulatory and legal requirements for markets serviced. bluum.life disclaims any responsibility for the any claims, damages, costs, losses, and liabilities that may stem from the use of its resources.

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1. Overview

FLOWERMCU is a dual-core microcontroller unit with Wi-Fi and Bluetooth Low Energy capabilities using the devices integrated trace antenna. The FLOWERMCU is intended to be used for wearable devices but only using Bluetooth Low Energy (Wi-Fi must be disabled for use in wearable devices through a software lock). The FLOWERMCU can operate at different clock rates between 80 MHz to 240 MHz to allow for reduced power consumption. The module is available in varying flash memory sizes to meet the needs of different applications. The FLOWERMCU can support many peripherals and can work with various communication standards.

The FLOWERMCU is a rebranded ESP32-WROOM-32D from Espressif Systems Inc. FLOWERMCU is licensed from Espressif Systems Inc. to allow for regulatory compliance data and filings to be leveraged from the existing ESP32-WROOM-32D for new use cases. All FLOWERMCU devices are manufactured by Espressif Inc. and rebranded by bluum.life, LLC in accordance to our licensing agreement and regulatory requirements. The FLOWERMCU is currently intended for use only in bluum.life devices.

This document will go into detail about the intended use cases and proper installation for the FLOWERMCU with respect to its current regulatory and compliance requirements.

2. Physical and Electrical Design

This section will show the designs for electrical characteristics, electrical schematics, PCB landing and the physical appearance of the FLOWERMCU. The only difference between the FLOWERMCU and the ESP32-WROOM-32D is the physical appearance in the form of a label. More detailed information regarding the design for the FLOWERMCU/ESP32 can be found on Espressif Systems website.

Espressif Systems ESP32 Information

2.1 Electrical Characteristics

There is no difference between the FLOWERMCU and the ESP32-WROOM-32D in respect to the electrical characteristics since it is the same module. The required information can be found on Espressif's website.

Electrical Characteristics

2.2 Schematics and PCB Landings

There is no difference between the FLOWERMCU and the ESP32-WROOM-32D in respect to the schematics and PCB landing patterns since it is the same module. The required information can be found on Espressif's website.

Schematics

PCB Landing Patterns

2.3 Physical Appearance

Since the FLOWERMCU is a rebranded ESP32-WROOM-32D, the external appearance is changed to reflect the rebranding along with the different FCC ID for the FLOWERMCU.

The FLOWERMCU is currently labeled with a white sticker affixed to the metal shielding that has the FCC ID listed on it and may have a QR code that contains a serial number. **Figure 1** shows an example of the FLOWERMCU with the label.

Figure 1: FLOWERMCU with Label

3. Use Cases

The primary use case of the FLOWERMCU is for wearable electronics that require Bluetooth Low Energy connectivity along with a microcontroller unit. The FLOWERMCU should not and cannot be used for portable devices/wearables if Wi-Fi connectivity is needed for its normal functionality.

3.1 Acceptable Use of Bluetooth and Wi-Fi for Portable Use

The FLOWERMCU can operate using Bluetooth Low Energy connectivity when integrated into products designed for portable use. The Wi-Fi connectivity of the FLOWERMCU must have the software lock in place to inhibit the transmitter from operating while the device is being worn. It is the integrators sole responsibility to ensure that the software lock is in place and functioning correctly so that the Wi-Fi transmitter is not operating within proximity of any individual. Failure to comply with the Wi-Fi transmitter's software lock while the device is being worn will result in the device no longer being classified as a portable device and can void the user's/integrator's authority to operate or sell the equipment as such.

4. FCC RF Exposure Requirements

This device complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. The end-user and integrator must follow the specific operating instructions for satisfying RF exposure compliance. The antenna(s) used for this transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.