Focal Board User Manual

This user manual shows the specification and how to get started with Focal Boards

Contents

1 Overview 4
1.1 Module Overview 4
1.2 Antenna Specification 5
2 Get Started on Focal Board 5
2.1 What You Need 5
3 Statement 7
3.1 Operational use condition 7
3.2 Regular statement 7
3.3 RF Exposure warning statements: 7
3.4 OEM Warning statement (Module) **Error! Bookmark not defined.**
3.5 Single Modular Approval **Error! Bookmark not defined.**
3.6 FCC Part 15.247 **Error! Bookmark not defined.**
Revision History 8

1 Overview

1.1 Overview

Focal Board is a power-integrated, small-sized Wi-Fi+Bluetooth®+Bluetooth® LE system board. This board is for a wide variety of Focal Camera applications, ranging from shelf edge, hanger mount, face mount and riser mount used in supermarket.

Table 1-1. Specifications

On Board Memory

Flash Memory	4 MB (CODE ONLY)
External PSRAM memory	8 MB

Interface Usage

Install	Bluetooth
Typical operation	WiFi HTTP/1.1

Security

Network encryption	TLS 1.2

Wireless Capabilities

WiFi	802.11b/g/n (2412-2484MHz)
WiFi speed	150 Mbps (max)
Bluetooth compatibility	4.2 BLE

General

Operating conditions	40F-100F
Operating voltage supply	2.7 - 4.2 V
Typical current draw	0.85mah per wakeup
Sleep current	0.25 uA
Dimensions	1.7 inch x 0.75 inch x 0.2 inch
Weight	10g

1.2 Antenna Specification

DESCRIPTION	VALUE
Working Frequency	2.4~2.5 GHz
VSWR	2.0 : 1 max
Peak Gain	4.4dBi (Typ.)
Polarization	Linear
Radiation Pattern	Omni-directional
Impedance	50 Ω Nominal
Operating Temperature	–40 °C to 85 °C
Maximum Power	1 W
PCB Dimension	18.4mm x 7.5mm x 0.55mm
Radio Connector	I-PEX (20278-112R-13)
Cable Diameter / Length / Color	1.13mm / 100mm / Black
Mounting	Adhesive Tape (HF-DS)

2 Get Started on Focal Board

2.1 What You Need

To operate the module, you need:

i. 1 x WiFi module

ii. 1 x USB-C cable

iii. 1 x M5 USB to UART board

iv. 1 x PCB antenna

1. Connect the Focal Board to the M5 board and PCB antenna as shown in Figure 3-1.

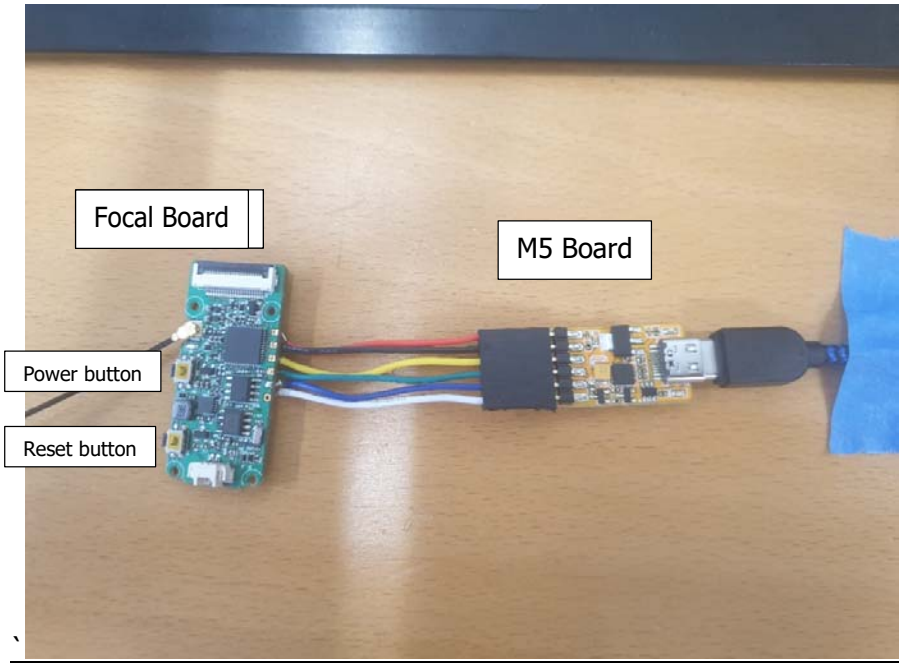
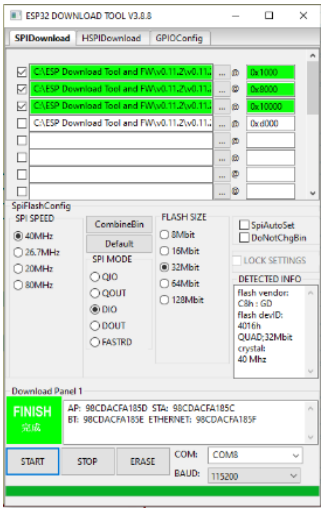
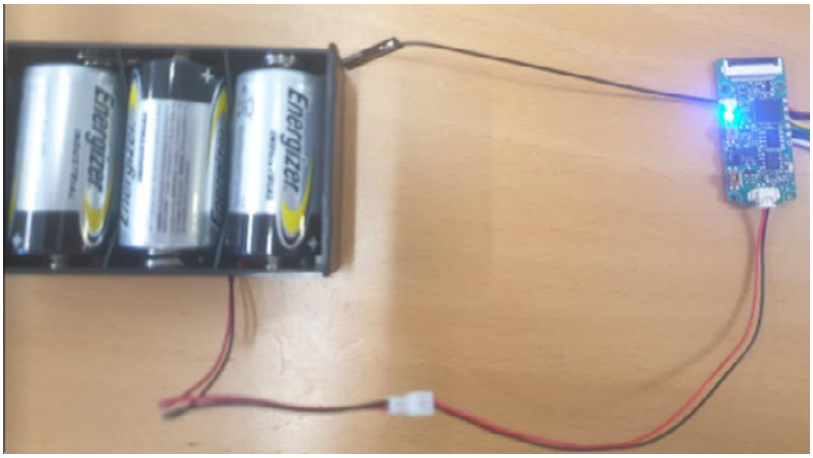


Figure 3-1. Hardware Connection

2. Run the ESP download tool



3. Remove the M5 board then conduct the battery pack the press the button, the blue LED will light up.



3 Statement

3.1 Operational use condition

The Focal Board is for Focal Camera use only which requires professional installation, It is important to operate this board within Focal Systems' recommended specifications and environmental considerations per the user guidelines. Exceeding the specified module ratings (including but not limited to input and output voltage, current, power, and environmental ranges) may cause property damage. If there are questions concerning these ratings please contact a Focal Systems' representative.

3.2 Regular statement

FCC: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. 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, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

ISED: This device complies with Innovation, Science and Economic Development Canada's licence-exempt RSSs. Operation is subject to the following two conditions:

(1) This device may not cause interference; and

(2) This device must accept any interference, including interference that may cause undesired operation of the device.

Cet appareil est conforme aux flux RSS exemptés de licence d'Innovation, Science et Développement économique Canada. L'opération est soumise aux deux conditions suivantes:

(1) Cet appareil ne doit pas provoquer d'interférence; et

(2) Cet appareil doit accepter toute interférence, y compris les interférences susceptibles de provoquer un fonctionnement indésirable de l'appareil.

3.3 RF Exposure warning statements:

FCC: This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. End users must follow the specific operating instructions for satisfying RF exposure compliance. This transmitter must be at least 20 cm from the user and must not be co-located or operating in conjunction with any other antenna or transmitter.

The information in this guide may change without notice. The manufacturer assumes no responsibility for any errors that may appear in this guide.

ISED: [English] Radiation Exposure Statement: This equipment complies with the IC RSS-102 radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 cm between the radiator and your body.

ISED: [French] Énoncé d'exposition aux rayonnements: Cet équipement est conforme aux limites d'exposition aux rayonnements ioniques RSS-102 Pour un environnement incontrôlé. Cet équipement doit être installé et utilisé avec un Distance minimale de 20 cm entre le radiateur et votre corps.

Revision History

Date	Version	Release notes
2021-0928	V0.1	Preliminary release