

FUJITSU Component Wireless Modules

Mesh Unit / Mesh Sensor Unit

FWM8BLZ07P / FWM8BLZ07Y

Features

- Ability to build a large scale mesh network.
- Power saving, high-density network under autonomous network rerouting, even if the network environment changes or device failure occurs.
- Security key provides secure operating environment.
- Mesh unit FWM8BLZ07P has wake-up/sleep function for further energy savings.
- Mesh sensor unit FWM8BLZ07Y embeds temperature, humidity, barometric pressure, illuminance, 3-axis acceleration and sound level sensors (customization option available).

Applications

- Asset management
- Sensor network inside factories
- Smart lighting

Overview

Fujitsu's 2.4 GHz Mesh Unit, Mesh Sensor Unit and Mesh Module along with the supporting gateway and software are the foundation of the Wirepas Mesh technology based IoT solution.

The solution supports a wide variety of IoT applications with superior scalability for networks, positioning service integration and solid application deployment in the field.

The Mesh Unit can be utilised as an Asset Tag, Anchor Node or a Beacon unit as part of the Mesh network's end node.

Fujitsu Mesh Sensor Unit includes temperature, humidity, barometric pressure, illuminance, 3-axis acceleration, and sound level sensors. The sensor unit utilises the Wirepas Mesh network as a sensor network foundation.

At the same time, the Mesh Sensor Unit is capable of supporting the regular end-node of the Mesh Network, thus capable of supporting the Asset Tag, Anchor Node or remotely manageable Beacon unit.

In addition, Fujitsu offers a Mesh Module which is similar to a Bluetooth BLE radio module. Customers can easily adopt Mesh Networking capability into their hardware by integrating the module. The mesh module accepts Wirepas API based communications from the host systems CPU and API software is provided as part of the system.

As well as working with Wirepas ecosystem partners to support multiple configurations of the system and different types of hardware requirements, we also support the gateway. This provides the software to manage the entire Wirepas Mesh network as a whole.

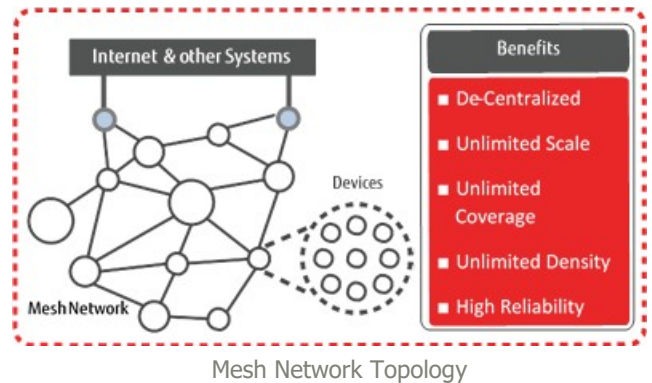


RoHS compliant



FWM8BLZ07PA/T
Anchor / Tag Unit

FWM8BLZ07Y
Mesh Sensor Unit



■ Specifications Mesh Units

Item	Specifications		
Part number	FWM8BLZ07P-A	FWM8BLZ07P-T	FWM8BLZ07Y
Type	Anchor mesh node	Asset Tag end node	Sensor node
Mesh technology	Wirepas Massive (Mesh) v5		
Antenna	Embedded (pattern antenna)		
Transmit power	-Max. +4 dBm (adjusted automatically)		
IC	Nordic Semiconductor nRF52832		
Power supply	Coin cell lithium battery CR2450 (not included)		
Operating temperature / humidity	-300C to +600C, 20 to 80% RH		
Sensor	3-axis acceleration *1	3-axis acceleration *1	Temperature, humidity, barometric pressure, luminance, sound level, 3-axis acceleration
Dimensions / Weight	40 x 31 x 12mm / Approx. 10g (without battery)		
Certifications	Radio Act (Japan), FCC, ISED, CE, RCM		
Other	Battery voltage notification function		

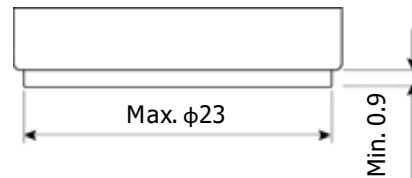
Notes: *1: Used for awake function. Data collection capability is not available.

■ Specifications Module (inside Mesh Unit)

Item	Specifications	
RAM	64Kbytes (user usable area is subject to Wirepas firmware and functions)	
ROM	512Kbytes (user usable area is subject to Wirepas firmware and functions)	
Transmit power	+4 dBm max.	
Receiver sensitivity	-94 dBm typical	
Host interface	UART 115,200 or 125,000 bps	
Available interface	NFC (via external antenna), UART, GPIO, SWDCLK, SWDIO, nRESET, SPI, TWI, ADC	
Crystal oscillator	Embedded	
Operating voltage	1.7V to 3.6VDC	
Power consumption	Tx mode	LDOmode: 11.6mA typical (at 0dBm), DC/DC mode: 5.3mA typical (at 0dBm)
	Rx mode	LDO mode: 11.7mA typical (at data rate 1Mbps), 12.9mA typical (at data rate 2Mbps) DC/DC mode: 5.4mA typical (at data rate 1Mbps), 5.8mA typical (at data rate 2Mbps)
Operating temp	-400C to +850C	
Dimensions	15.7 x 9.8 x 1.7 mm	
Mounting method	Surface mount (SMT)	
Certifications	Radio Act (Japan), FCC, IC, CE, RCM	

■ Battery specifications

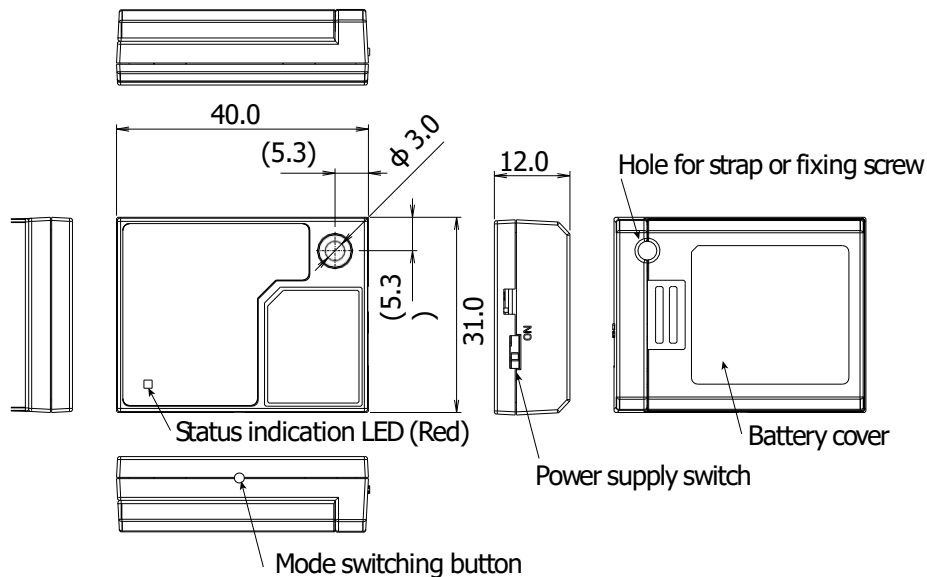
Note: Use of coin type **lithium battery CR2450**
 Please use the battery meets (minus electrode height min. 0.9mm, diameter max. 23 mm) to keep enough clearance between beacon holder and battery.



Unit: mm

■ Dimensions

FWM8BLZ07_



Unit: mm

■ Available Software (License agreement is required)

WNT: Wirepas Network Tool

- A highly scalable tool for monitoring and analyzing Mesh operation. It provides visibility of individual node behavior and visualization of the logical topology of Mesh.

WPE: Wirepas Positioning Engine

- It provides calculated end-node location coordination from the fixed Anchor nodes locations. It is capable to provide a geographically tagged view on the map or area layout image (e.g. office or warehouse).

Wirepas API

- Provides host CPU API for controlling the Wirepas Mesh Module.

Contact

Japan
 FUJITSU COMPONENT LIMITED
 Shinagawa Seaside Park Tower
 12-4, Higashi-shinagawa 4-chome,
 Tokyo 140 0002, Japan
 Tel: (81-3) 3450-1682
 Fax: (81-3) 3474-2385
 Email: fcl-contact@cs.jp.fujitsu.com
 Web: www.fcl.fujitsu.com/products/wireless-modules/

Australia & New Zealand
 Symbiotech
 696 Bourke st, Melbourne NSW 3000
 20 Poplar St, Sydney NSW 2010
 Email: gday@symbiotech.com.au
 Web: www.symbiotech.com/fujitsu



Copyright

All trademarks or registered trademarks are the property of their respective owners. Fujitsu Components or its affiliates do not warrant that the content of datasheet is error free. In a continuing effort to improve our products Fujitsu Components or its affiliates reserve the right to change specifications/datasheets without prior notice. Copyright ©2021 Fujitsu Components All rights reserved. Revised Sept 3, 2021.