

FCL Components Wireless Modules

Bluetooth® Version 5.3 without Firmware

FWM7BLZ23-109172

Overview

Compact Bluetooth Version 5.3 (low energy single mode) module with antenna, without FCL Components firmware. It is possible to communicate in 2.4 GHz Industrial Scientific Medical (ISM) band.



RoHS compliant

Features

- **Replaceable with FWM7BLZ20/20B**
Same size and footprint as FWM7BLZ20/20B. It is possible to use an appropriate module according to required performance
- **Increased memory**
256KB RAM and 1MB Flash memory
QSPI for the high-speed external memory interface
- **Long Range communication**
Coded PHY (Long Range) enables approx. 4 times (theoretical value) long-distance communication compared to conventional products.
- **High output**
High power output (+8 dBm) also contributes long range communication.
- **30 GPIO pins of nRF52840-QFAA are assigned**
Possible to use pins as NFC*, SPI, TWI, URAT, ADC, QSPI
Note*: external antenna is required to use NFC



FWM7BLZ23-109172

Applications

IoT equipment, remote control and maintenance of equipment, etc.

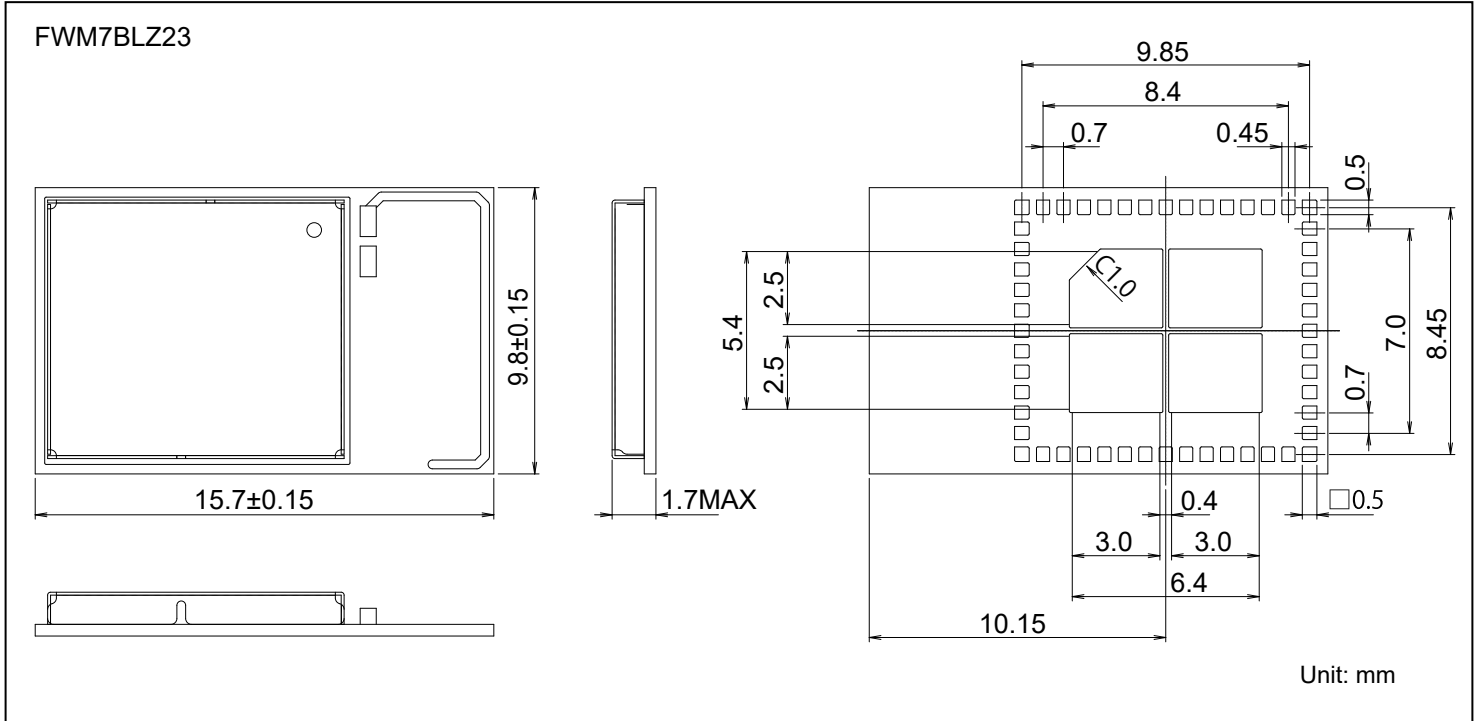
■ Specifications

Item	Specifications
Part number	FWM7BLZ23 -109172
Antenna	Embedded (Pattern antenna)
Bluetooth technology	Conforms to Bluetooth Core Specification Version 5.3 technology (Low energy single mode)
Carrier frequency	2,402 MHz to 2,480 MHz
Modulation	GFSK
RAM	256 KB
FLASH	1,024 KB
Output power	+8 dBm max.
Receiver sensitivity	-94 dBm typical (1 Mbps BLE ideal transmitter packet length, ≥128 bytes BER=0.01%)
Interface	NFC*1, SPI, TWI, UART, ADC, QSPI
Crystal oscillator	Embedded
Operating voltage	1.7 to 3.6 VDC
Data rate	1 Mbps / 2 Mbps (ON-AIR)
Number of channels	40 RF channels
Advertising size	255 bytes (payload), max. 254 bytes (advertising data)
SoC	nRF52840 (Nordic Semiconductor)
Power consumption	Tx only LDO mode: 10.6 mA typical (at 0 dBm), DC/DC mode: 4.8 mA typical (at 0 dBm)
	Rx only LDO mode: 9.9 mA typical (data rate 1 Mbps), 11.1 mA typical (data rate 2 Mbps) DC/DC mode: 4.6 mA typical (data rate 1 Mbps), 5.2 mA typical (data rate 2 Mbps)
Operating temperature	-40°C to +85°C
Dimensions	15.7 x 9.8 x 1.7 mm
Mounting method	Surface mount (SMT)
Certifications (plan)	Bluetooth qualification (QDID)*2, Radio Act (Japan), FCC, ISED, CE, UKCA

Note: *1: External antenna is required to use NFC

*2: Bluetooth SIG registration is required to use modules QDID

■ Dimensions



■ Evaluation board

Part number	Details
MBH-FUJ12-E1	Evaluation board (USB cable is attached)
FWM7BLZ23-DAU-EB1	Daughter board (FWM7BLZ23 x 1 is mounted)

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Contact

Japan
 FCL COMPONENTS LIMITED
 Shinagawa Seaside Park Tower
 12-4, Higashi-shinagawa 4-chome,
 Tokyo 140 0002, Japan
 Tel: +81 3 3450 1682
 Email: fcl-contact@cs.fcl-components.com

Europe
 FCL COMPONENTS EUROPE B.V.
 Diamantlaan 25
 2132 WV Hoofddorp
 Netherlands
 Tel: +31 23 5560910
 Email: info@fcl-components.eu

China
 FCL COMPONENTS (SHANGHAI) CO., LTD.
 Unit 1105, Central Park –Jing An, No.329 Heng
 Feng Road, Shanghai 200070, China
 Tel: +86 021 3253 0998
 Email: fclsh@fcl-components.com

North and South America
 FCL COMPONENTS AMERICA, INC.
 2055 Gateway Place, Suite 480
 San Jose, CA 95110 U.S.A.
 Tel: +1 408 745 4900
 Email: fcai.components@fcl-components.com

Asia Pacific
 FCL COMPONENTS ASIA, LTD.
 No. 20 Harbour Drive, #07-01B
 Singapore 117612
 Tel: +65 6375 8560
 Email: fcal@fcl-components.com

Web: www.fcl-components.com/en/

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