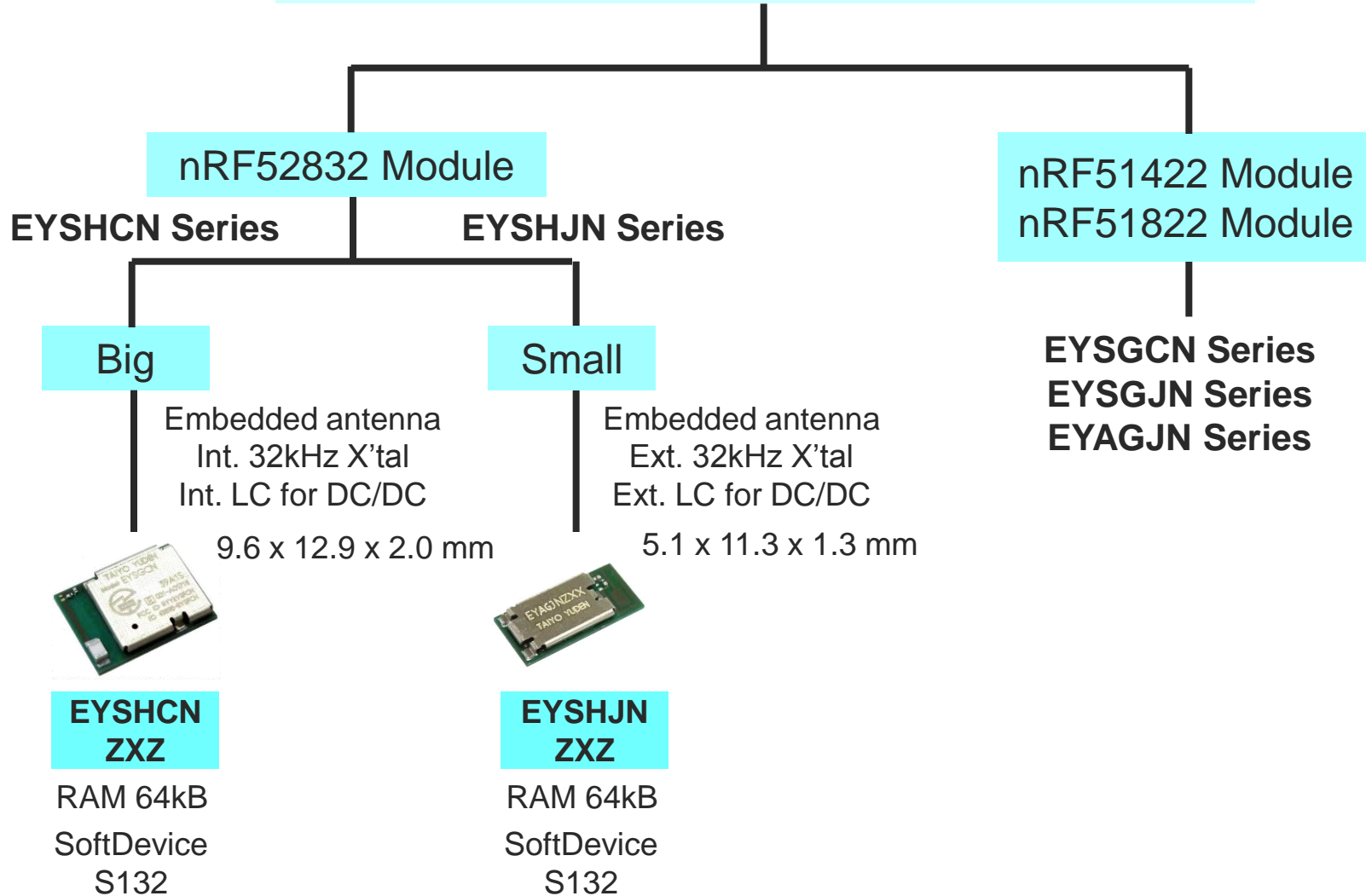


Wireless Module *Bluetooth[®] Smart Module* Overview

Mar. 10, 2016 Version 1.2

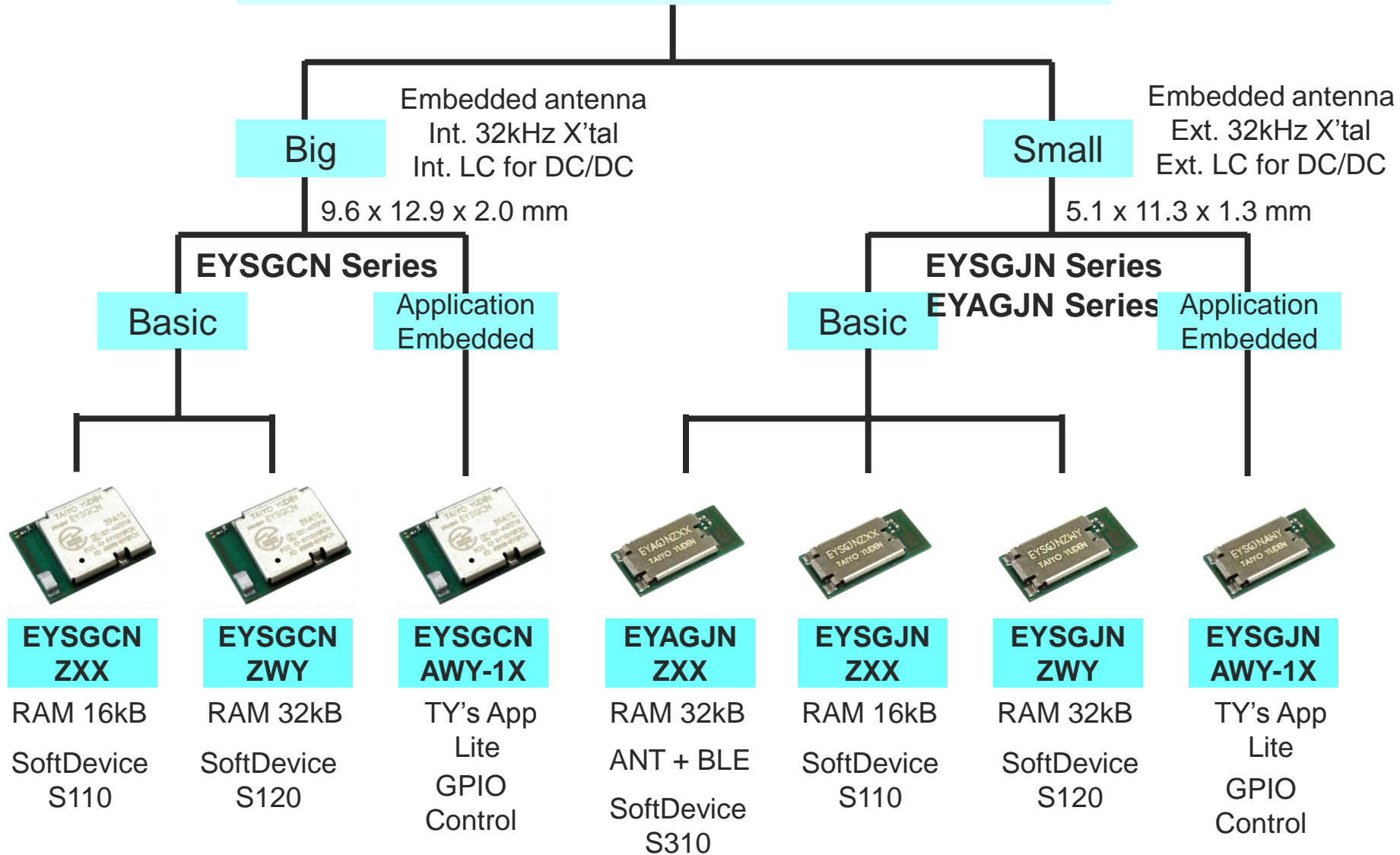
Taiyo Yuden Bluetooth® Smart Module Line-Up

Taiyo Yuden Bluetooth® Smart Module



Taiyo Yuden Bluetooth® Smart Module Line-Up

nRF51x22 Bluetooth® Smart Module



Bluetooth® Smart Module: EYSHCNZXZ

Features

- Frequency: 2402 to 2480 MHz with +4dBm Output power
- Single power supply: 1.7 – 3.6V
- Single Mode Bluetooth Smart Slave/Master (**ANT™ Available**)
- Chip: **nRF52832** (Nordic)
- Integrated System/**Sleep Clock, LC for DC/DC**
- Integrated high performance ceramic chip antenna
- ARM Cortex M4F** 32bit processor
- 512kB Flash** and **64kB RAM**
- Interface: SPI, UART, I2C, I2S, PDM and 12bit ADC
- Support **NFC-A Type-2** for Touch-to-Pair
- Outline: **9.6 x 12.9 x 2.0** mm with **1mm** pad pitch
- Operating Temperature range: -25 to 75 deg-C
- Bluetooth and Japan, FCC, IC qualified
- CE Conducted Test Report Available
- RoHS compliant / Complete Lead Free

Applications

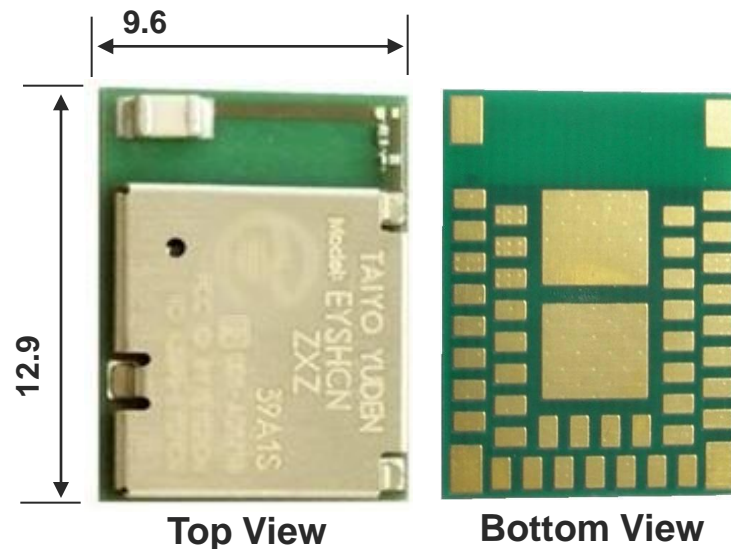
- Cycle computer
- Heart rate monitor
- Blood pressure monitor
- Blood glucose meter
- Weighing machine
- Thermometer
- Mobile accessories
- Sports and fitness sensors
- Remote controllers / Toys

All specifications are subject to change without notice.

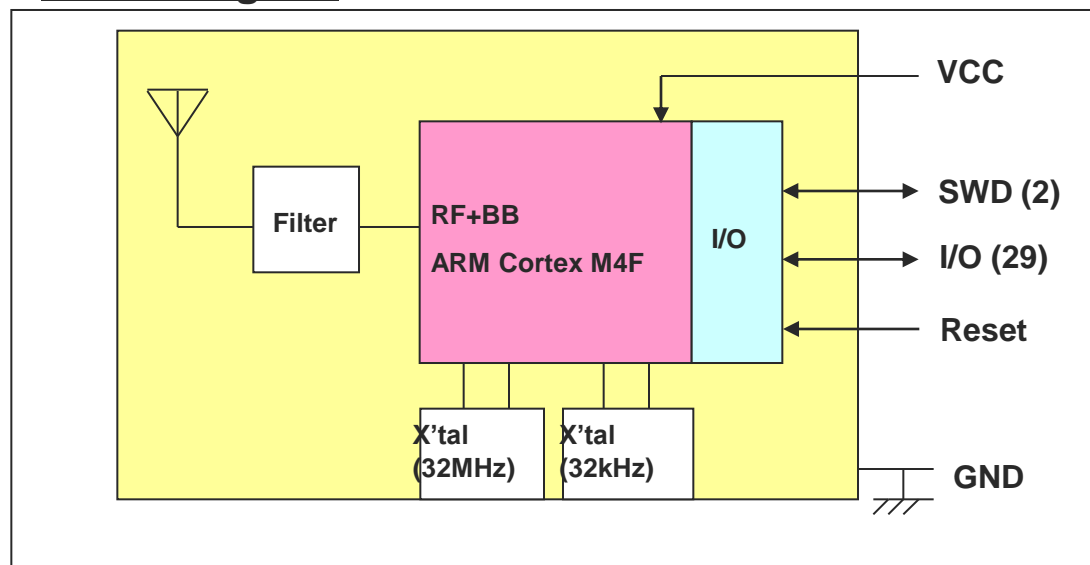
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Outline

Unit: mm



Block Diagram

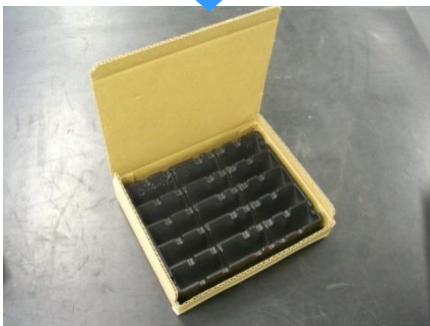
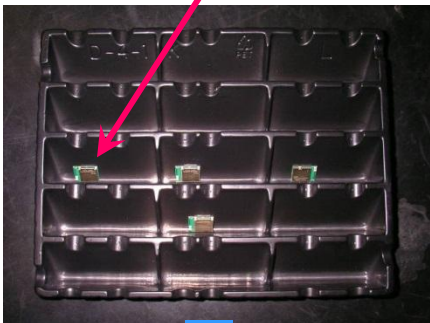
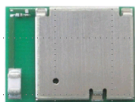


TAIYO YUDEN

Bluetooth® Smart Module Sample, Evaluation Board / Kit

EYSHCNZZX (Module)

Module samples



EBSHCNZZX (EV-B)

Evaluation board



EKSHCNZZX (EV-K)

Evaluation kit



**SEGGER
J-Link LITE
Attached**



Bluetooth® Smart Module: EYSHJNZXZ

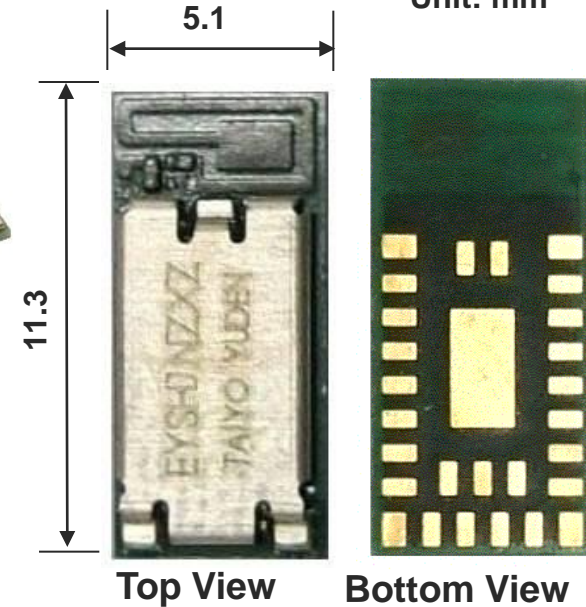
Features

- Frequency: 2402 to 2480 MHz with +4dBm Output power
- Single power supply: 1.7– 3.6V
- Single Mode Bluetooth Smart Slave (**ANT™ Available**)
- Chip: **nRF52832** (Nordic)
- Integrated System Clock
- ARM Cortex M4F** 32bit processor
- 512kB Flash and 64kB RAM**
- Interface: SPI, UART, I2C, I2S, PDM and 12bit ADC
- Support **NFC-A Type-2** for Touch-to-Pair
- Integrated high performance pattern antenna
- Outline: **5.1 x 11.3 x 1.3mm** MAX
- Operating Temperature range: -25 to 75 deg-C
- Bluetooth and Japan, FCC, IC qualified
- CE Conducted Test Report Available
- RoHS compliant / Complete Lead Free

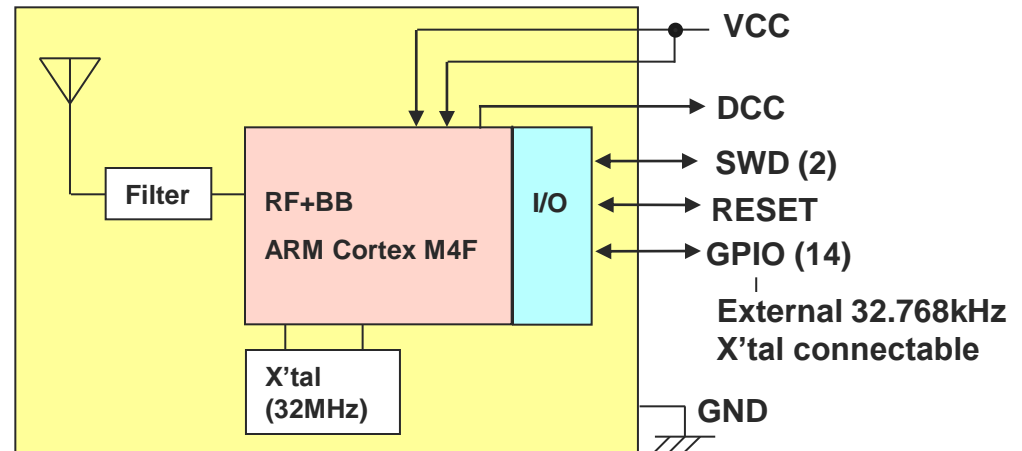
Applications

- Cycle computer
- Heart rate monitor
- Blood pressure monitor
- Blood glucose meter
- Weighing machine
- Thermometer
- Mobile accessories
- Sports and fitness sensors
- Remote controllers / Toys

Outline



Block Diagram



All specifications are subject to change without notice.

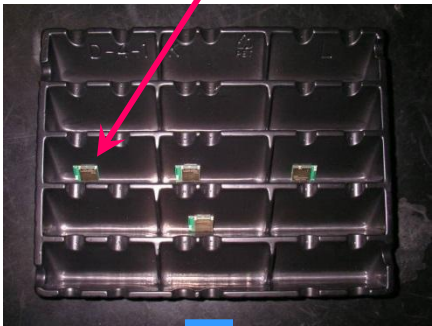
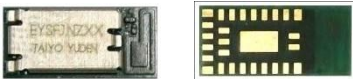
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TAIYO YUDEN

Bluetooth® Smart Module Sample, Evaluation Board / Kit

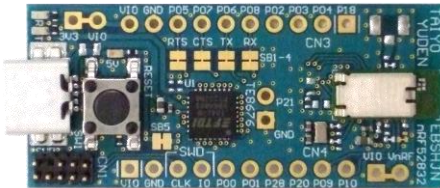
EYSHJNZXZ (Module)

Module samples



EBSHJNZXZ (EV-B)

Evaluation board



EKSHJNZXZ (EV-K)

Evaluation kit



Bluetooth® Smart Module: EYSGCNZXX

Features

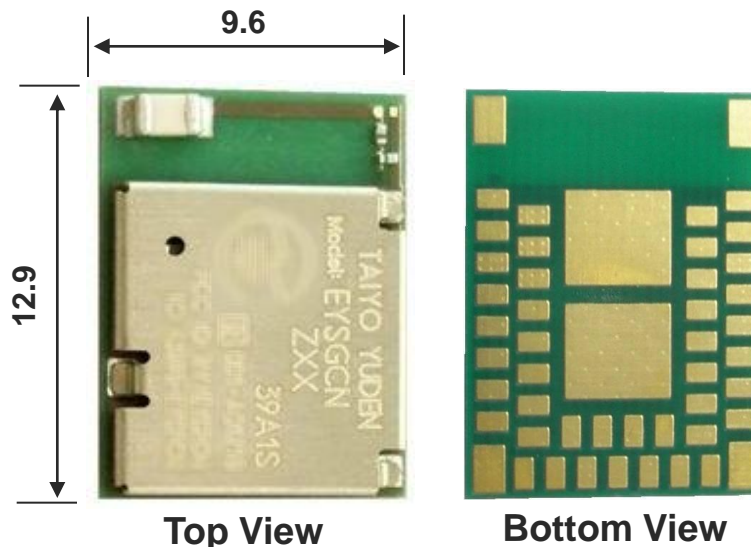
- Frequency: 2402 to 2480 MHz
- Output power: +4dBm typ.
- Single power supply: 1.8 – 3.6V
- Single Mode Bluetooth Smart Slave
- Chip: nRF51822 Rev.3 (Nordic)
- Integrated System/Sleep Clock
- Integrated high performance ceramic chip antenna
- ARM Cortex M0 32bit processor
- 256kB Flash and 16kB RAM
- Interface: SPI, UART, I2C and 8/9/10bit ADC
- Outline: 9.6 x 12.9 x 2.0 mm with 1mm pad pitch
- Operating Temperature range: -25 to 75 deg-C
- Bluetooth and Japan, FCC, IC qualified
- CE Conducted Test Report Available
- RoHS compliant / Complete Lead Free

Applications

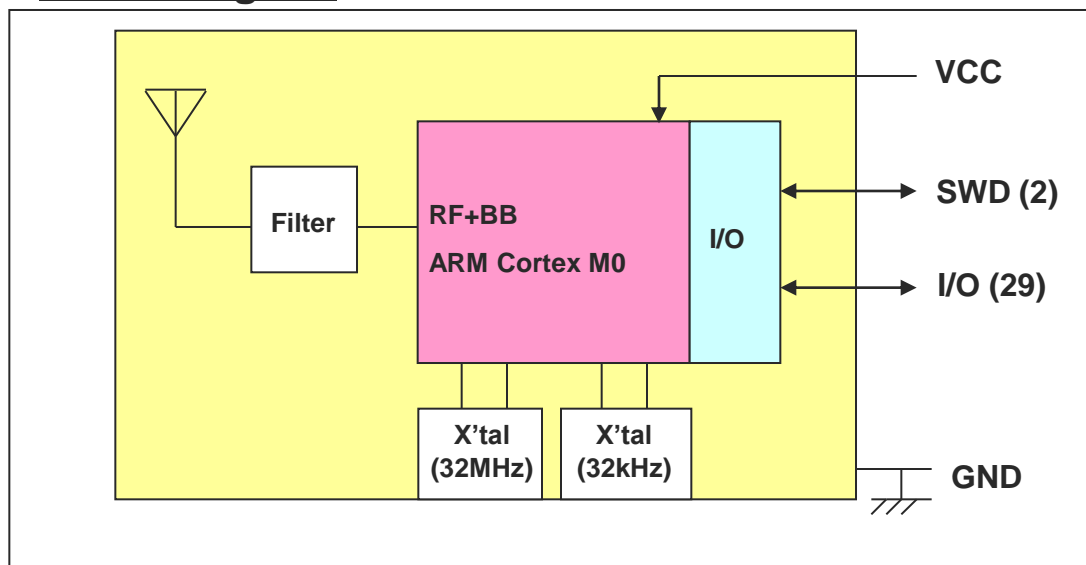
- Cycle computer
- Heart rate monitor
- Blood pressure monitor
- Blood glucose meter
- Weighing machine
- Thermometer
- Mobile accessories
- Sports and fitness sensors
- Remote controllers / Toys

Outline

Unit: mm



Block Diagram



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TAIYO YUDEN

Bluetooth® Smart Module: EYSGCNZWY

Features

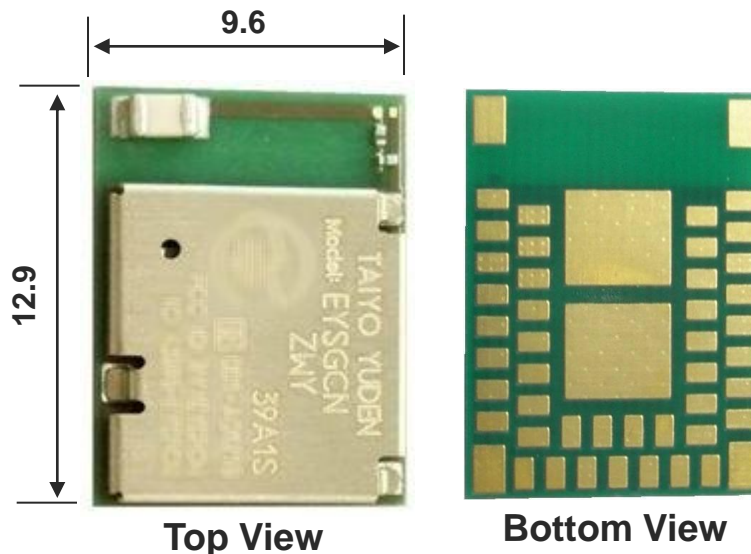
- Frequency: 2402 to 2480 MHz
- Output power: +4dBm typ.
- Single power supply: 1.8 – 3.6V
- Single Mode Bluetooth Smart **Slave / Master**
- Chip: nRF51822 **Rev.3** (Nordic)
- Integrated System/**Sleep Clock**
- Integrated high performance ceramic chip antenna
- ARM Cortex M0** 32bit processor
- 256kB Flash** and **32kB RAM**
- Interface: SPI, UART, I2C and 8/9/10bit ADC
- Outline: **9.6 x 12.9 x 2.0** mm with **1mm** pad pitch
- Operating Temperature range: -25 to 75 deg-C
- Bluetooth and Japan, FCC, IC qualified
- CE Conducted Test Report Available
- RoHS compliant / Complete Lead Free

Applications

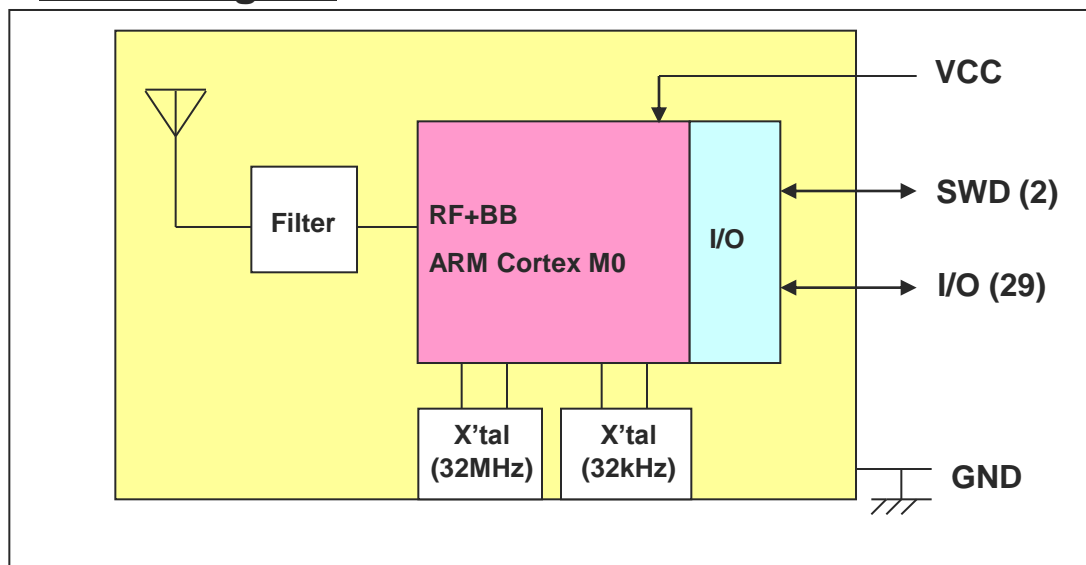
- Cycle computer
- Heart rate monitor
- Blood pressure monitor
- Blood glucose meter
- Weighing machine
- Thermometer
- Mobile accessories
- Sports and fitness sensors
- Remote controllers / Toys

Outline

Unit: mm



Block Diagram



All specifications are subject to change without notice.

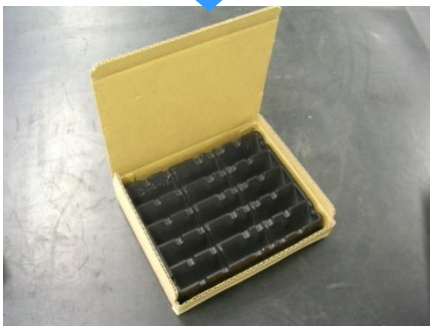
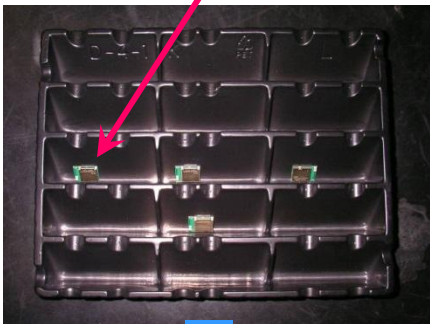
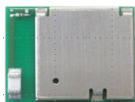
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Bluetooth® Smart Module Sample, Evaluation Board / Kit

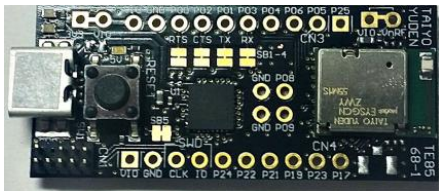
EYSGCNZXX, EYSGCNZWY (Module)

Module samples



EBSGCMZWY (EV-B)

Evaluation board



EKSGCMZWY (EV-K)

Evaluation kit



SEGGER
J-Link LITE
Attached



Bluetooth® Smart Module **EYSGJNZXX**

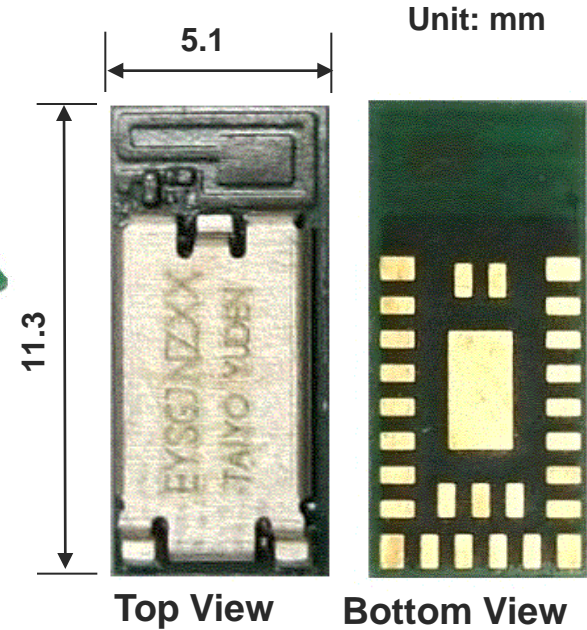
Features

- Frequency: 2402 to 2480 MHz
- Output power: +4dBm typ.
- Single power supply: 1.8 – 3.6V
- Single Mode Bluetooth Smart Slave
- Chip: nRF51822 **Rev.3** (Nordic)
- Integrated System Clock
- ARM Cortex M0** 32bit processor
- 256kB Flash** and **16kB RAM**
- Interface: SPI, UART, I2C and 8/9/10bit ADC
- Integrated high performance pattern antenna
- Outline: **5.1 x 11.3 x 1.3**mm MAX
- Operating Temperature range: -25 to 75 deg-C
- Bluetooth and Japan, FCC, IC qualified
- CE Conducted Test Report Available
- RoHS compliant / Complete Lead Free

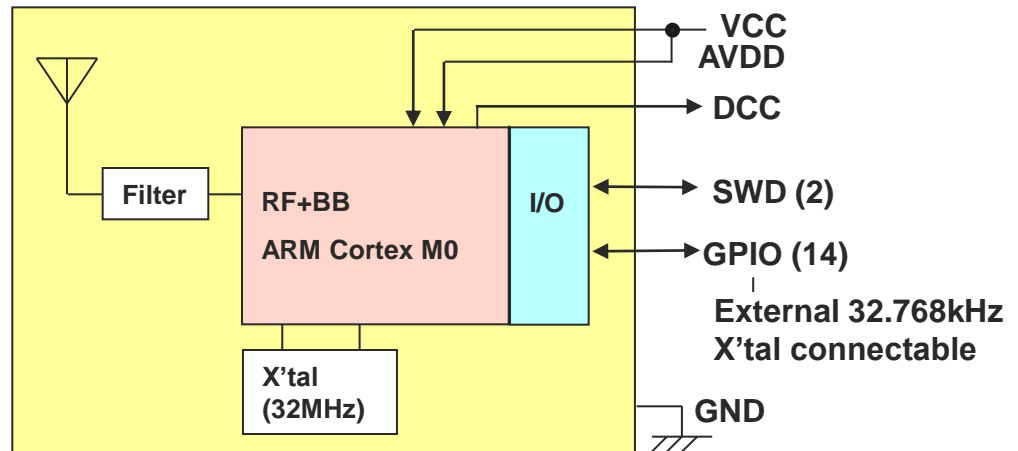
Applications

- Cycle computer
- Heart rate monitor
- Blood pressure monitor
- Blood glucose meter
- Weighing machine
- Thermometer
- Mobile accessories
- Sports and fitness sensors
- Remote controllers / Toys

Outline



Block Diagram



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Bluetooth® Smart Module **EYSGJNZWY**

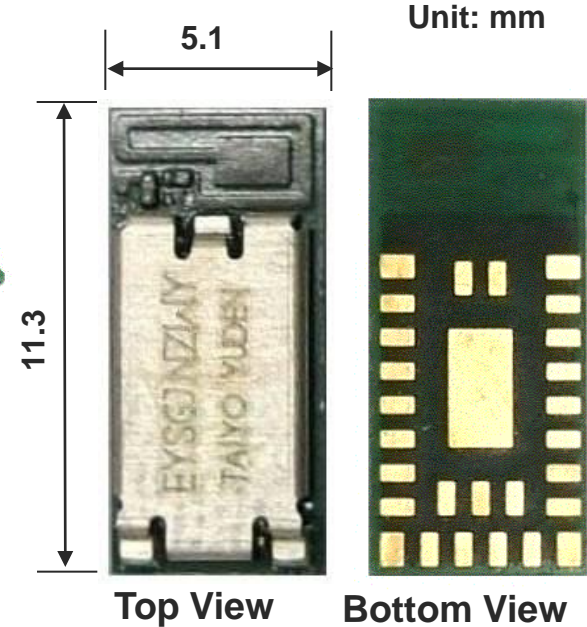
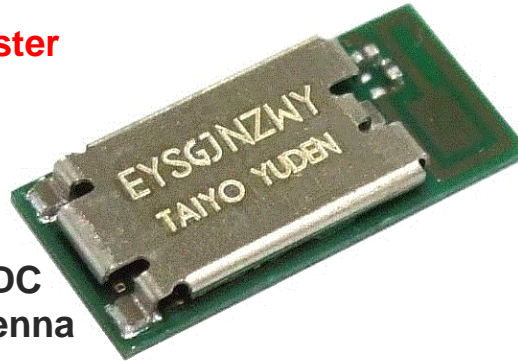
Features

- Frequency: 2402 to 2480 MHz
- Output power: +4dBm typ.
- Single power supply: 1.8 – 3.6V
- Single Mode Bluetooth Smart **Slave / Master**
- Chip: nRF51822 **Rev.3** (Nordic)
- Integrated System Clock
- ARM Cortex M0** 32bit processor
- 256kB Flash** and **32kB RAM**
- Interface: SPI, UART, I2C and 8/9/10bit ADC
- Integrated high performance pattern antenna
- Outline: **5.1 x 11.3 x 1.3**mm MAX
- Operating Temperature range: -25 to 75 deg-C
- Bluetooth and Japan, FCC, IC qualified
- CE Conducted Test Report Available
- RoHS compliant / Complete Lead Free

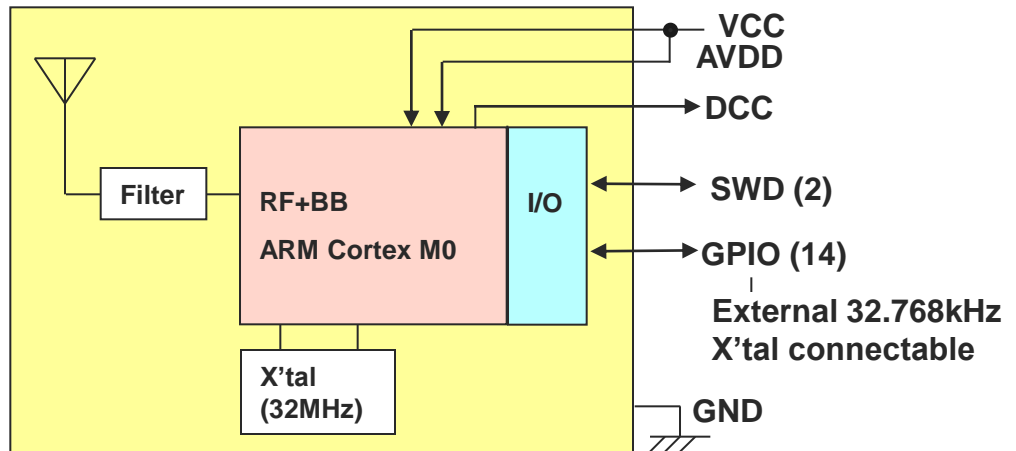
Applications

- Cycle computer
- Heart rate monitor
- Blood pressure monitor
- Blood glucose meter
- Weighing machine
- Thermometer
- Mobile accessories
- Sports and fitness sensors
- Remote controllers / Toys

Outline



Block Diagram



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ANT + Bluetooth® Smart Module **EYAGJNZXX**

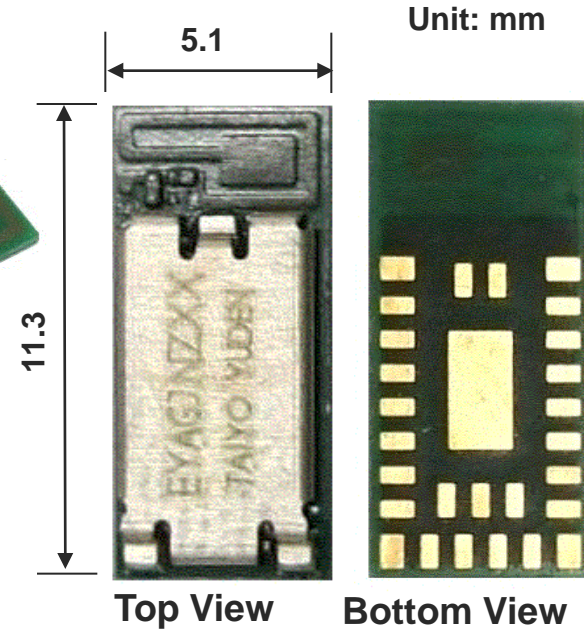
Features

- Frequency: 2402 to 2480 MHz
- Output power: +4dBm typ.
- Single power supply: 1.8 – 3.6V
- ANT** + Single Mode Bluetooth Smart Slave
- Chip: **nRF51422 Rev 3** (Nordic)
- Integrated System Clock
- ARM Cortex M0** 32bit processor
- 256kB Flash and 32kB RAM**
- Interface: SPI, UART, I2C and 8/9/10bit ADC
- Integrated high performance pattern antenna
- Outline: **5.1 x 11.3 x 1.3**mm MAX
- Operating Temperature range: -25 to 75 deg-C
- Bluetooth and Japan, FCC, IC qualified
- CE Conducted Test Report Available
- RoHS compliant / Complete Lead Free

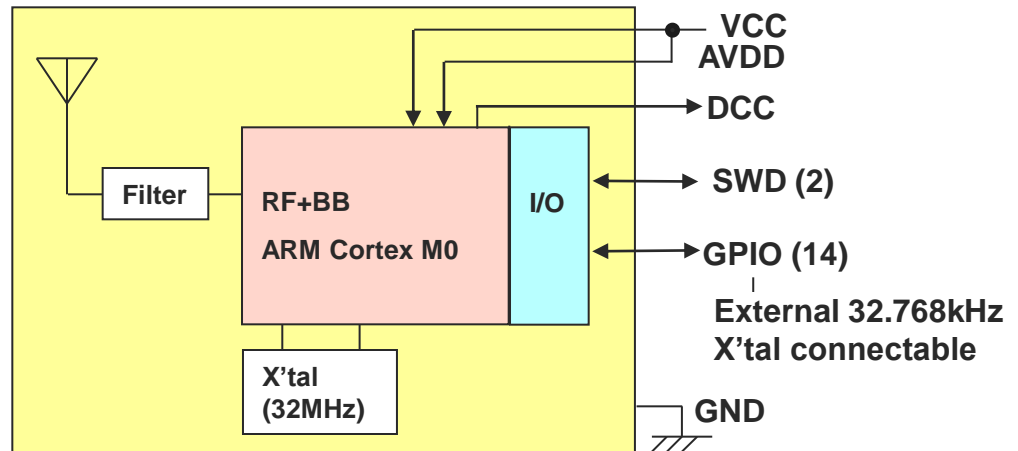
Applications

- Cycle computer
- Heart rate monitor
- Blood pressure monitor
- Blood glucose meter
- Weighing machine
- Thermometer
- Mobile accessories
- Sports and fitness sensors
- Remote controllers / Toys

Outline



Block Diagram



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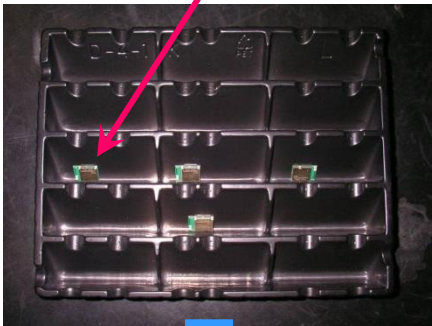
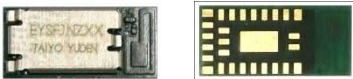
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Bluetooth® Smart Module Sample, Evaluation Board / Kit

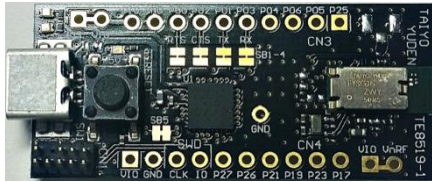
EYSGJNZXX, EYSGJNZWY, EYAGJNZXX (Module)

■ Module samples



EBSGJNZWY, EBAGJNZXX (EV-B)

■ Evaluation board

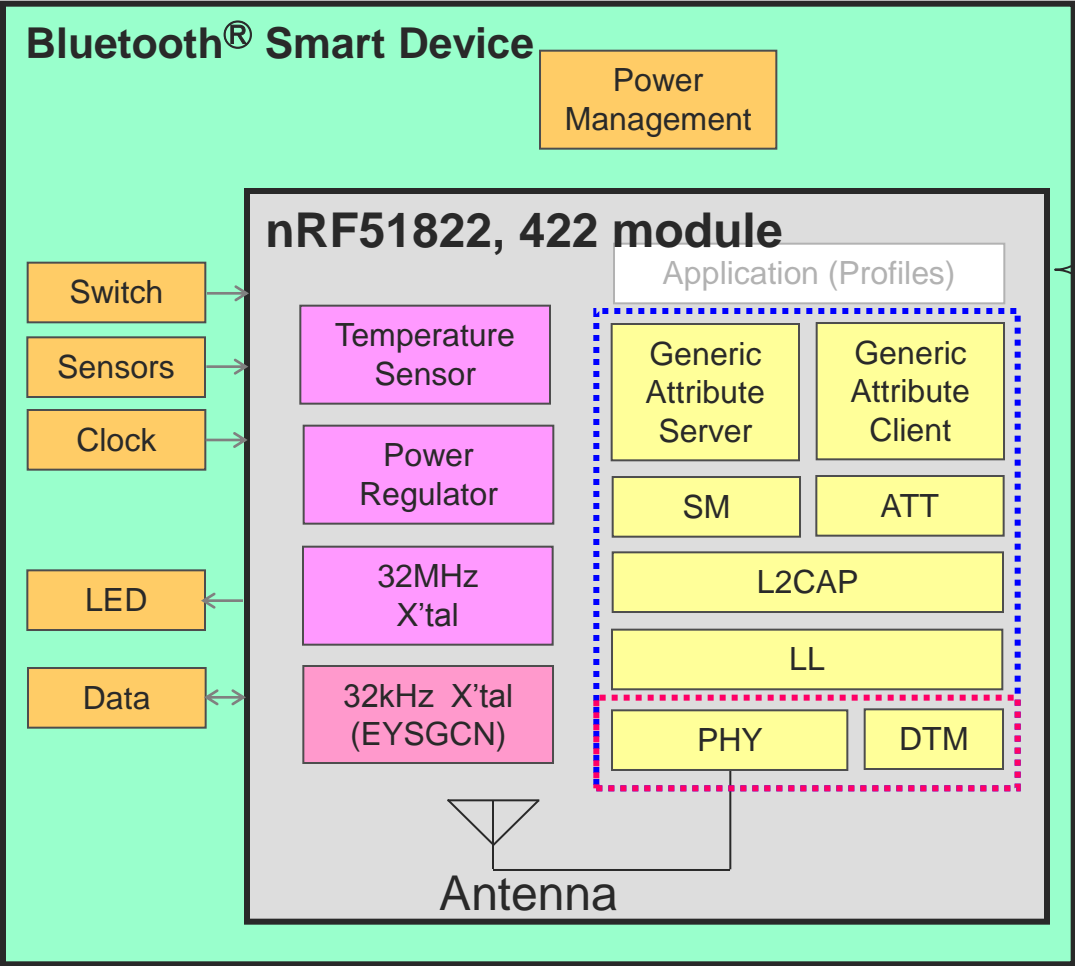


EKSGJNZWY, EKAGJNZXX (EV-K)

■ Evaluation kit



Application Layer image for Basic Module



- Alert Notification **Nordic SDK**
- Blood Pressure
- Cycling Speed and Cadence
- Glucose
- HID Mouse
- Heart Rate
- Phone Alert Status
- Proximity
- Running Speed and Cadence
- Time

Basic module will be written under GATT.

Software Device

- GAP:** Generic Access Profile
- SM:** Security Manager
- ATT:** Attribute Protocol
- L2CAP:** Logical Link Control and Adaptation Protocol
- LL:** Link Layer
- PHY:** Physical Layer
- DTM:** Direct Test Mode

EYSGCN, EYSGJN, EYAGJN Basic Module

Bluetooth® Smart Module: EYSGCNAWY-1X

Features

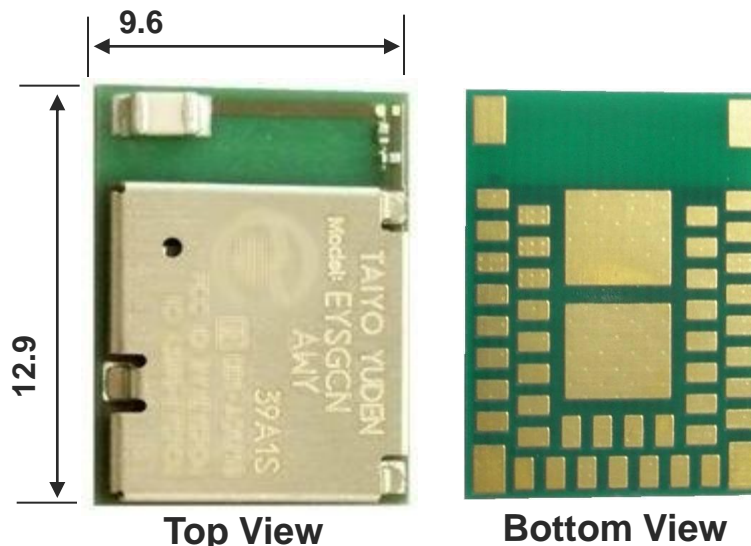
- Frequency: 2402 to 2480 MHz
- Output power: +4dBm typ.
- Single power supply: 1.8 – 3.6V
- Single Mode Bluetooth Smart **Slave / Master**
- Chip: nRF51822 (Nordic)
- Integrated System/Sleep Clock
- Integrated high performance ceramic chip antenna
- ARM Cortex M0** 32bit processor
- Application Embedded by Taiyo Yuden**
- (TY's App Lite Generic Data transfer, Battery Service)**
- Interface: UART
- Outline: **9.6 x 12.9 x 2.0** mm with **1mm** pad pitch
- Operating Temperature range: -25 to 75 deg-C
- Bluetooth and Japan, FCC, IC qualified
- CE Conducted Test Report Available
- RoHS compliant / Complete Lead Free

Applications

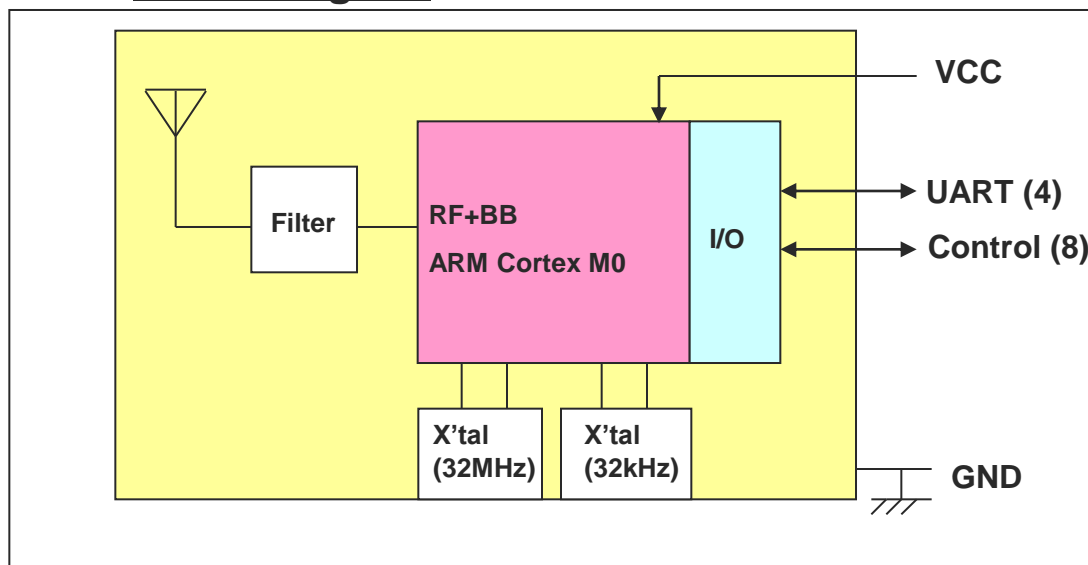
- Cycle computer
- Heart rate monitor
- Blood pressure monitor
- Blood glucose meter
- Weighing machine
- Thermometer
- Mobile accessories
- Sports and fitness sensors
- Remote controllers / Toys

Outline

Unit: mm



Block Diagram



All specifications are subject to change without notice.

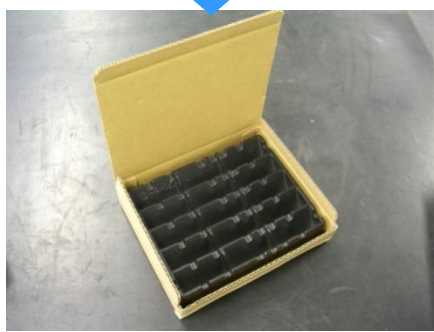
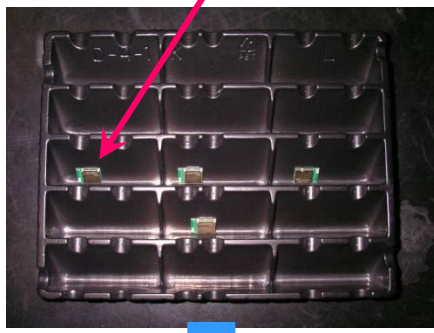
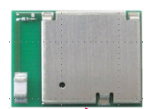
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Bluetooth® Smart Module Sample, Evaluation Board

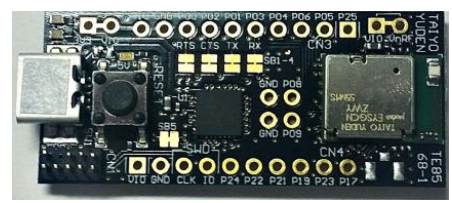
EYSGCNAWY-1X (Module)

■ Module samples



EBSGCNAWY-1X (EV-B)

■ Evaluation board



Bluetooth® Smart Module **EYSGJNAWY-1X**

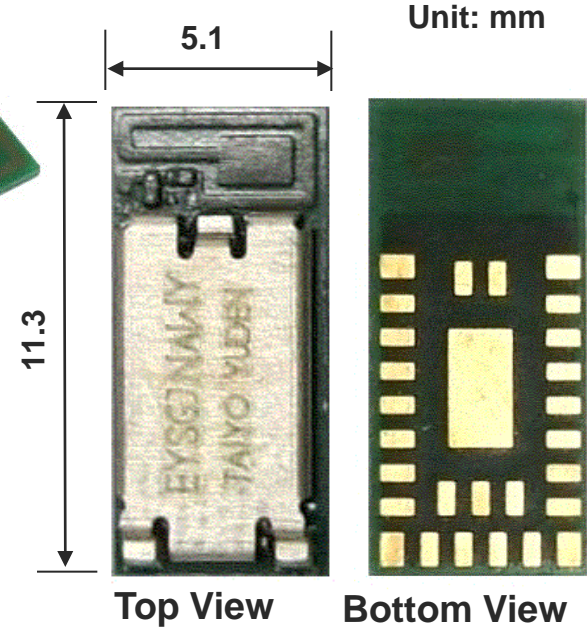
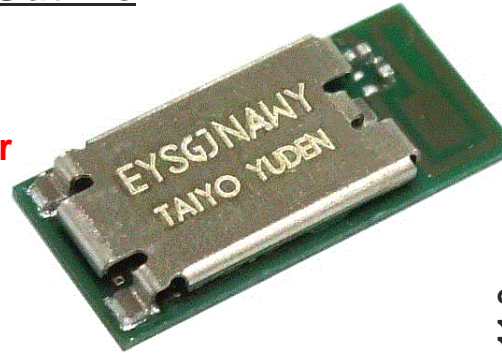
Features

- Frequency: 2402 to 2480 MHz
- Output power: +4dBm typ.
- Single power supply: 1.8 – 3.6V
- Single Mode Bluetooth Smart **Slave / Master**
- Chip: nRF51822 Rev3 (Nordic)
- Integrated System Clock
- ARM Cortex M0** 32bit processor
- Application Embedded by Taiyo Yuden**
- (TY's App : Generic Data transfer, Battery Service)**
- Interface: UART
- Integrated high performance pattern antenna
- Outline: **5.1 x 11.3 x 1.3mm** MAX
- Operating Temperature range: -25 to 75 deg-C
- Bluetooth and Japan, FCC, IC qualified
- CE Conducted Test Report Available
- RoHS compliant / Complete Lead Free

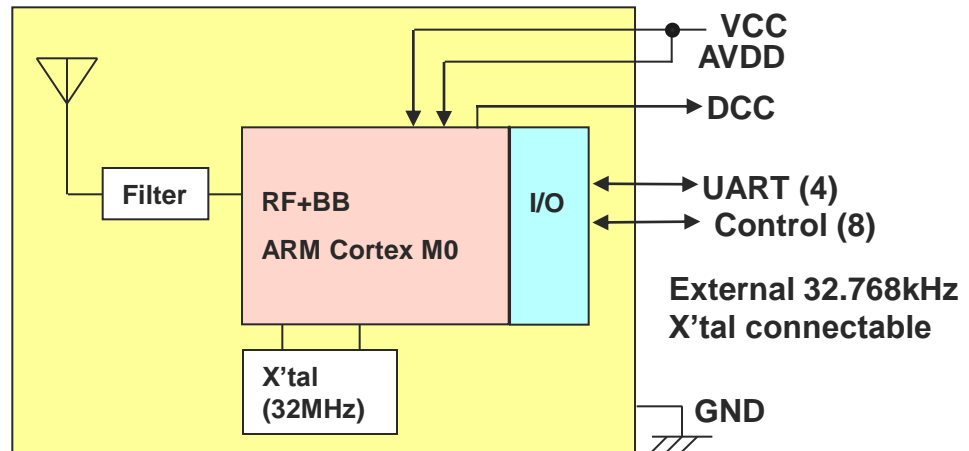
Applications

- Cycle computer
- Heart rate monitor
- Blood pressure monitor
- Blood glucose meter
- Weighing machine
- Thermometer
- Mobile accessories
- Sports and fitness sensors
- Remote controllers / Toys

Outline



Block Diagram



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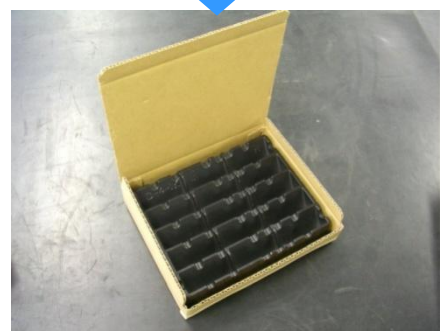
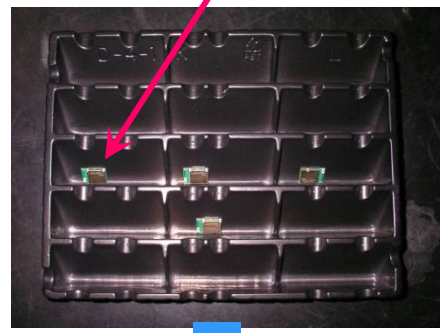
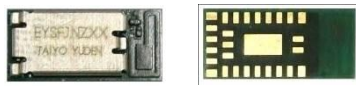
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Bluetooth® Smart Module Sample, Evaluation Board

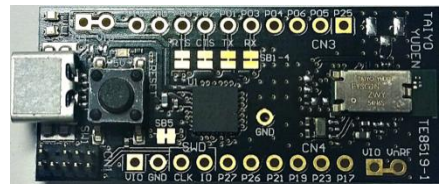
EYSGJNAWY-1X (Module)

■ Module samples

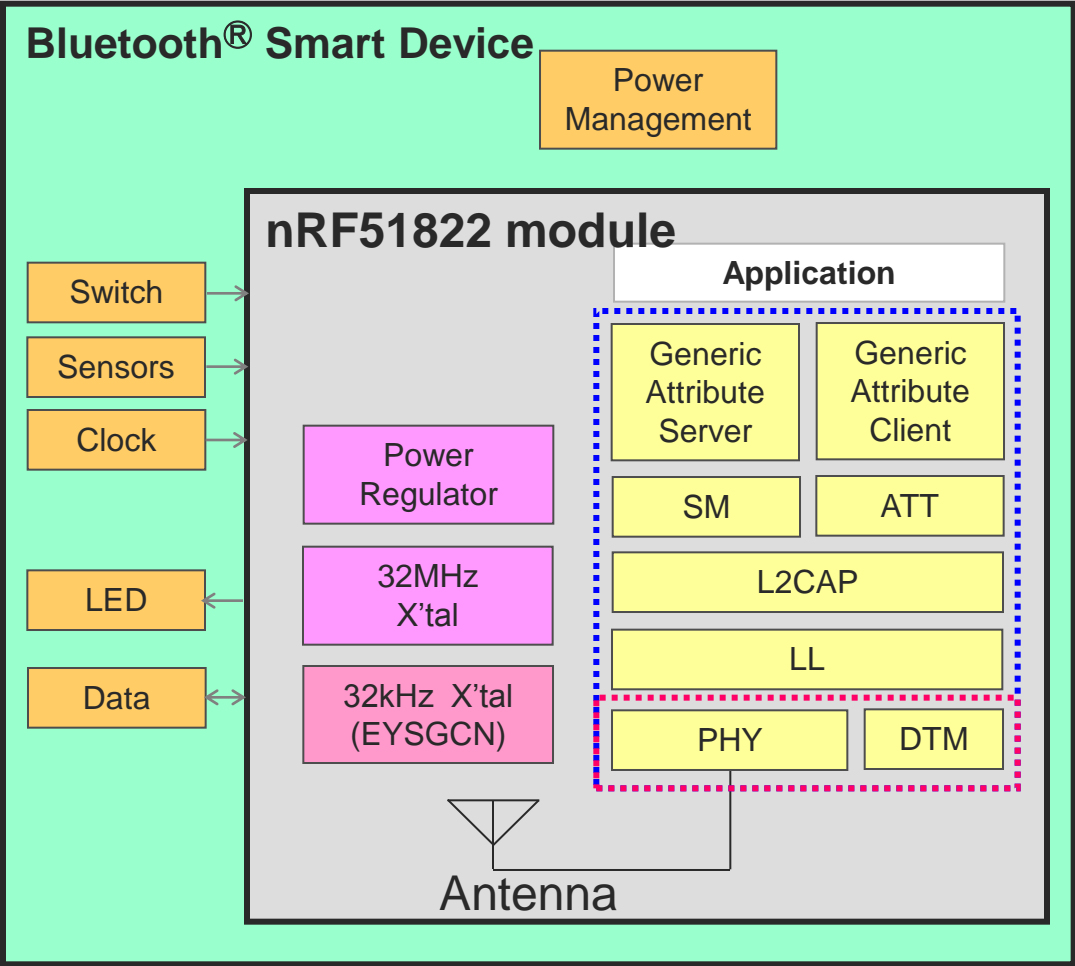


EBSGJNAWY-1X (EV-B)

■ Evaluation board



Application Layer image for Application Embedded Module



Software Device 

- GAP:** Generic Access Profile
- SM:** Security Manager
- ATT:** Attribute Protocol
- L2CAP:** Logical Link Control and Adaptation Protocol
- LL:** Link Layer
- PHY:** Physical Layer
- DTM:** Direct Test Mode

EYSGCN, EYSGJN
Application Embedded Module

Bluetooth® Smart standard module

Type	Part No.	Size (LxWxH)	Specification	ANT™ Support	I/F	RAM	Certification	Temperature	
High Performance Basic	EYSHCNZXZ	9.6x12.9 X2.0mm	Bluetooth V4.2 BLE Single Slave/ Master	✓	UART SPI I2C	64kB	Japan FCC IC (CE)※	-25~+75 deg-C	
	EYSHJNZXZ	5.1x11.3 X1.3mm		✓		64kB			
Basic (Software Support : Nordic)	EYSGCNZXX	9.6x12.9 x2.0mm		✓		32kB			
	EYSGCNZWY								16kB
	EYSGJNZXX	5.1x11.3 x1.3mm							16kB
	EYSGJNZWY								32kB
	EYAGJNZXX								32kB
Application Embedded (Software Support : Taiyo Yuden)	EYSGCNAWY-1X	9.6x12.9 x2.0mm		✓		N/A			
	EYSGJNAWY-1X	5.1x11.3 x1.3mm							

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