

# Wireless Module *Bluetooth<sup>®</sup> low energy* Module Overview

May 28, 2019 Version 2.0

# TAIYO YUDEN Bluetooth® low energy Module Line-Up

## nRF52 Bluetooth® low energy Module

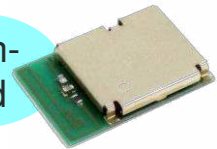
### nRF52840 Module

#### EYSKBN UWB-WX

TY's  
Application  
Embedded

High-  
end

High-  
end



Embedded antenna  
Int. 32kHz X'tal  
Int. LC for DC/DC  
10.0 x 15.4 x 2.0mm

#### EYSKBN ZWB

RAM 256kB  
SoftDevice  
S140

High-  
end

### nRF52832 Module

#### EYSHCN ZWZ

RAM 64kB  
SoftDevice  
S132

Big

Ultra-  
small



Embedded antenna  
Ext. 32kHz X'tal  
Ext. LC for DC/DC  
\*1: 3.25 x 8.55 x 0.85mm  
\*2: 3.25 x 8.55 x 1.00mm

#### EYSHJN ZWZ

RAM 64kB  
SoftDevice  
S132

Small

Small

#### EYSHSN ZWZ

RAM 64kB  
SoftDevice  
S132

Ultra-  
small\*1



Embedded antenna  
Ext. 32kHz X'tal  
Ext. LC for DC/DC  
5.1 x 11.3 x 1.3mm

### nRF52810 Module

#### EYSLCN ZWW

RAM 24kB  
SoftDevice  
S112

Big

Big



Embedded antenna  
Int. 32kHz X'tal  
Int. LC for DC/DC  
9.6 x 12.9 x 2.0mm

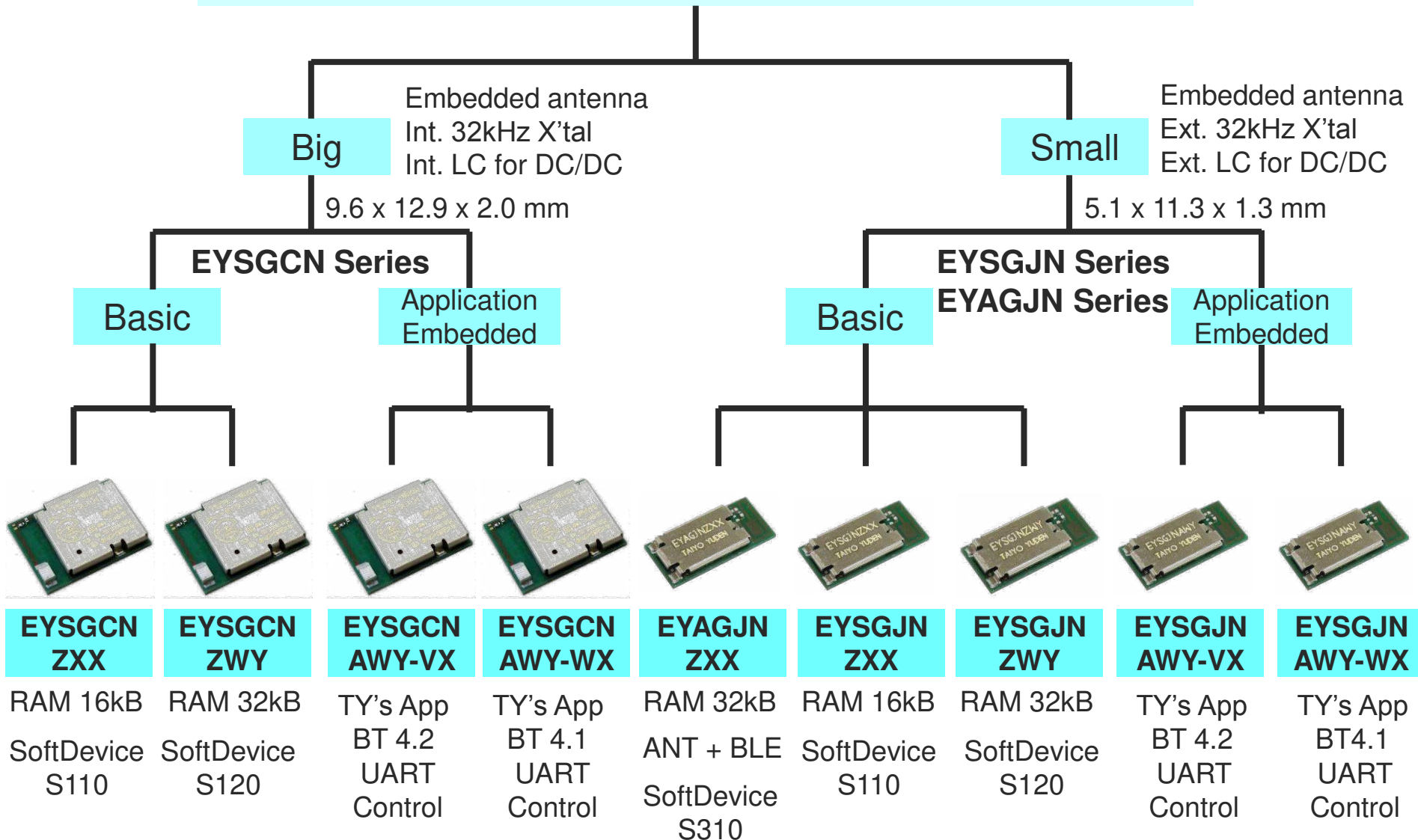
#### EYSLSN ZWW

RAM 24kB  
SoftDevice  
S112

Ultra-  
small\*2

# TAIYO YUDEN Bluetooth® low energy Module Line-Up

## nRF51x22 Bluetooth® low energy Module



# Latest Documents for Bluetooth® low energy Module

EYSKBNZWB	<a href="http://www.yuden.co.jp/or/product/category/module/EYSKBNZWB.html">http://www.yuden.co.jp/or/product/category/module/EYSKBNZWB.html</a>
EYSHSNZWZ	<a href="http://www.yuden.co.jp/or/product/category/module/EYSHSNZWZ.html">http://www.yuden.co.jp/or/product/category/module/EYSHSNZWZ.html</a>
EYSHCNZWZ	<a href="http://www.yuden.co.jp/or/product/category/module/EYSHCNZWZ.html">http://www.yuden.co.jp/or/product/category/module/EYSHCNZWZ.html</a>
EYSHJNZWZ	<a href="http://www.yuden.co.jp/or/product/category/module/EYSHJNZWZ.html">http://www.yuden.co.jp/or/product/category/module/EYSHJNZWZ.html</a>
EYSLSNZWW	<a href="http://www.yuden.co.jp/or/product/category/module/EYSLSNZWW.html">http://www.yuden.co.jp/or/product/category/module/EYSLSNZWW.html</a>
EYSLCNZWW	<a href="http://www.yuden.co.jp/or/product/category/module/EYSLCNZWW.html">http://www.yuden.co.jp/or/product/category/module/EYSLCNZWW.html</a>
EYSGCNZXX	<a href="http://www.yuden.co.jp/or/product/category/module/EYSGCNZXX.html">http://www.yuden.co.jp/or/product/category/module/EYSGCNZXX.html</a>
EYSGCNZWY	<a href="http://www.yuden.co.jp/or/product/category/module/EYSGCNZWY.html">http://www.yuden.co.jp/or/product/category/module/EYSGCNZWY.html</a>
EYSGJNZXX	<a href="http://www.yuden.co.jp/or/product/category/module/EYSGJNZXX.html">http://www.yuden.co.jp/or/product/category/module/EYSGJNZXX.html</a>
EYSGJNZWY	<a href="http://www.yuden.co.jp/or/product/category/module/EYSGJNZWY.html">http://www.yuden.co.jp/or/product/category/module/EYSGJNZWY.html</a>
EYAGJNZXX	<a href="http://www.yuden.co.jp/or/product/category/module/EYAGJNZXX.html">http://www.yuden.co.jp/or/product/category/module/EYAGJNZXX.html</a>
EYSKBNUWB-WX	<a href="http://www.yuden.co.jp/or/product/category/module/EYSKBNUWB-WX.html">http://www.yuden.co.jp/or/product/category/module/EYSKBNUWB-WX.html</a>
EYSGCNAWY-VX	<a href="http://www.yuden.co.jp/or/product/category/module/EYSGCNAWY-VX.html">http://www.yuden.co.jp/or/product/category/module/EYSGCNAWY-VX.html</a>
EYSGJNAWY-VX	<a href="http://www.yuden.co.jp/or/product/category/module/EYSGJNAWY-VX.html">http://www.yuden.co.jp/or/product/category/module/EYSGJNAWY-VX.html</a>
EYSGCNAWY-WX	<a href="http://www.yuden.co.jp/or/product/category/module/EYSGCNAWY-WX.html">http://www.yuden.co.jp/or/product/category/module/EYSGCNAWY-WX.html</a>
EYSGJNAWY-WX	<a href="http://www.yuden.co.jp/or/product/category/module/EYSGJNAWY-WX.html">http://www.yuden.co.jp/or/product/category/module/EYSGJNAWY-WX.html</a>

-The documents for the evaluation board and evaluation kit are also available on the above page.

- The Japanese documents are available on the following page.

<http://www.yuden.co.jp/jp/product/category/module/lineup.html#Bluetooth>

# Bluetooth® 5.0 low energy Module: EYSKBNZWB

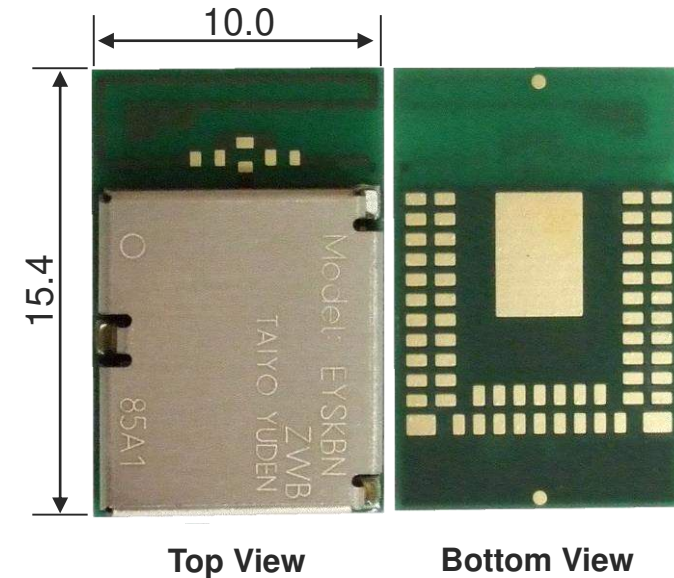
## Features

- Frequency: 2402 to 2480 MHz with **+8dBm** Output power
- Single power supply: 1.7 – 5.5V
- Single Mode **Bluetooth 5.0 / 802.15.4** (e.g. Thread, Zigbee)
- **Bluetooth 5 data rate support: 2M / 1M / 500k / 125kbps**
- Chip: **nRF52840** (Nordic)
- Integrated System/**Sleep Clock, 2 x LC for DC/DC**
- Integrated high performance PCB antenna
- **ARM® Cortex M4F** 32bit processor and **1MB Flash & 256kB RAM**
- **ARM® TrustZone® Cryptocell 310 cryptographic accelerator**
- Interface: **USB, NFC-A, SPI, UART, I2C, I2S, PDM** and 12bit ADC
- Outline: **10.0 x 15.4 x 2.0** mm
- Operating Temperature range: -40 to 85 deg-C
- Bluetooth and Japan, FCC, IC qualified
- ETSI EN 300 328 v2.1.1 Conducted Test Report Available
- RoHS compliant / Complete Lead Free

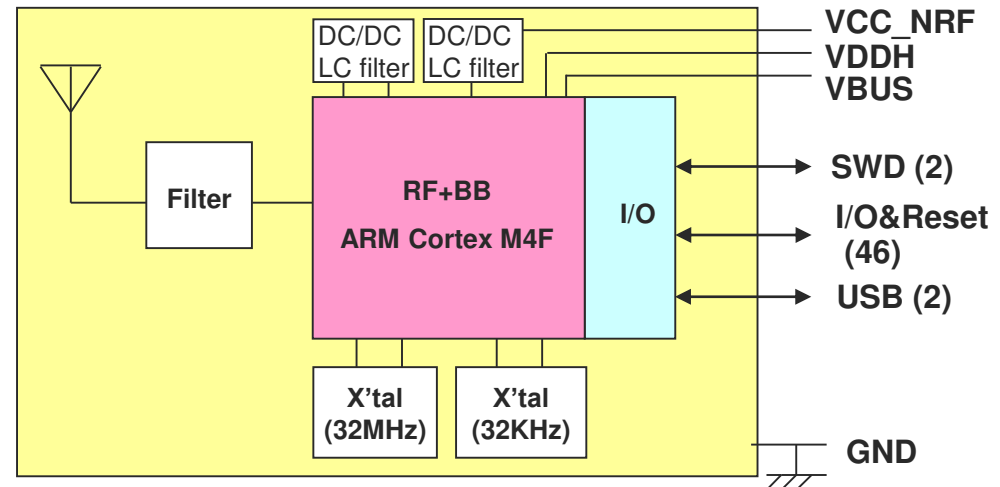
## Applications

- Advanced wearables
  - Connected watches
  - Advanced personal fitness devices
  - Wearables with wireless payment
  - Connected health
  - Virtual/Augmented reality applications
- Internet of Things
  - Smart home sensors and controllers
  - Industrial IoT sensors and controllers
- Interactive entertainment devices

## Outline



## Block Diagram



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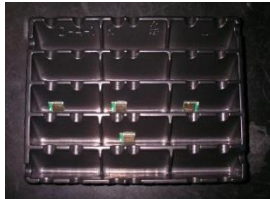
# Bluetooth® low energy Module Sample, Evaluation Board / Kit

## EYSKBNZWB (Module)

### Module samples



or



Tray

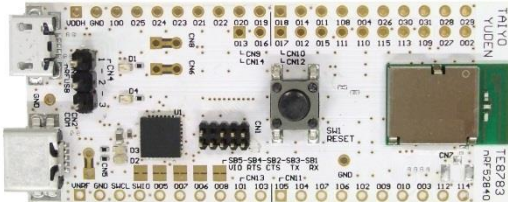


Tape



## EBSKBNZWB (EV-B)

### Evaluation board



## EKSKBNZWB (EV-K)

### Evaluation kit



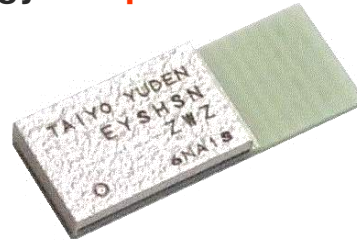
SEGGER  
J-Link LITE  
Attached



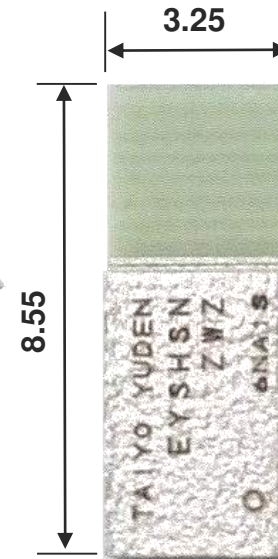
# 2Mbps Bluetooth® 5.0 low energy Module: EYSHSNZWZ

## Features

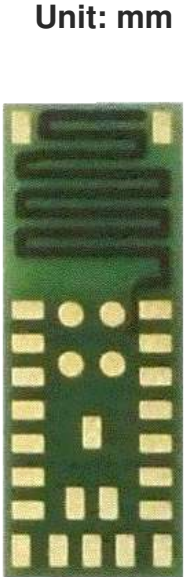
- Frequency: 2402 to 2480 MHz with +4dBm Output power
- Single power supply: 1.7– 3.6V
- Single Mode Bluetooth low energy (ANT™ Available)
- Chip: **nRF52832** (Nordic) with Bluetooth low energy **2Mbps** mode
- Integrated System Clock
- ARM Cortex M4F** 32bit processor
- 512kB Flash and 64kB RAM**
- Interface: SPI, UART, I2C, I2S, PDM and 12bit ADC
- Support **NFC-A Type-2** for Touch-to-Pair
- Integrated high performance PCB antenna
- Outline: **3.25 x 8.55 x 0.85**mm MAX
- Operating Temperature range: -40 to 85 deg-C
- Bluetooth and Japan, FCC, IC qualified
- ETSI EN 300 328 v2.1.1 Conducted Test Report Available
- RoHS compliant / Complete Lead Free



## Outline



Top View



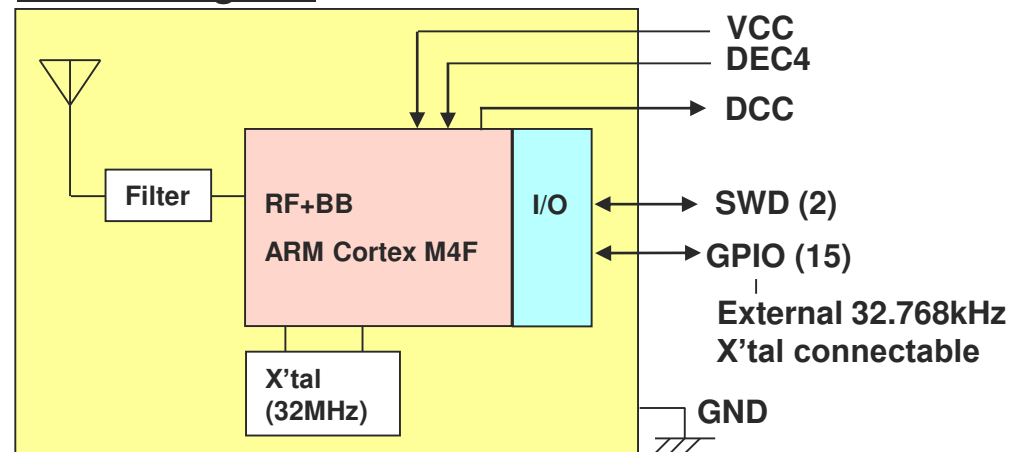
Bottom View

Unit: mm

## Applications

- Smart wristband
- Smart glasses
- Remote control ring
- Smart pen
- Heart rate monitor
- pressure monitor
- Blood glucose meter
- Thermometer
- Mobile accessories

## Block Diagram



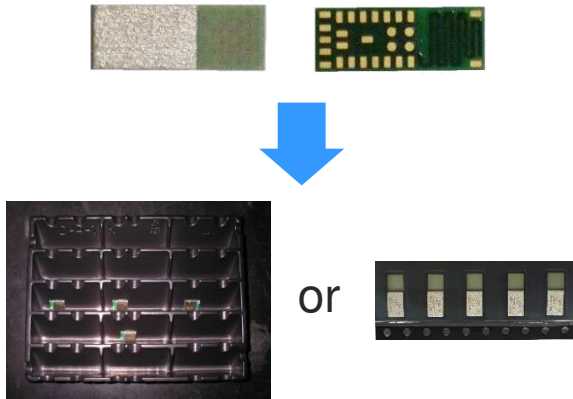
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# Bluetooth® low energy Module Sample, Evaluation Board / Kit

## EYSHSNZWZ (Module)

### Module samples



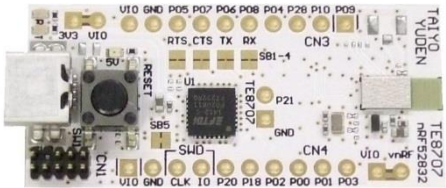
Tray

Tape



## EBSHSNZWZ (EV-B)

### Evaluation board



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## EKSHSNZWZ (EV-K)

### Evaluation kit





# 2Mbps Bluetooth® 5.0 low energy Module: EYSHCNZWZ

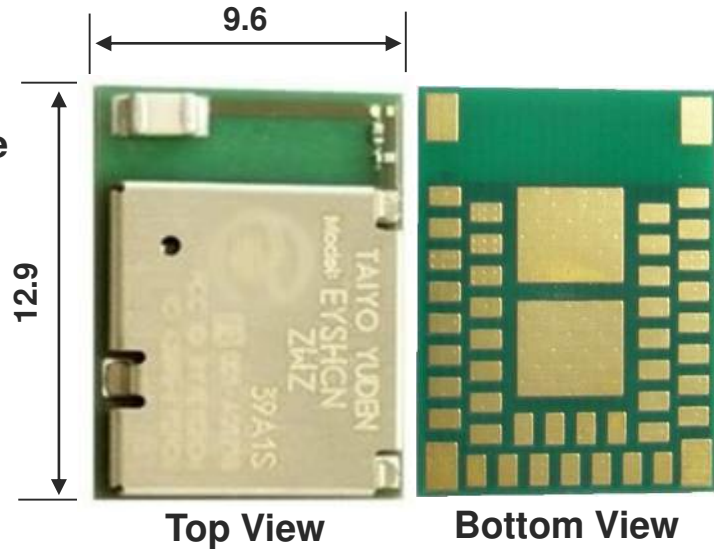
## Features

- Frequency: 2402 to 2480 MHz with +4dBm Output power
- Single power supply: 1.7 – 3.6V
- Single Mode Bluetooth low energy (ANT™ Available)
- Chip: **nRF52832** (Nordic) with Bluetooth low energy **2Mbps** mode
- 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: -40 to 85 deg-C
- Bluetooth and Japan, FCC, IC qualified
- ETSI EN 300 328 v2.1.1 Conducted Test Report Available
- RoHS compliant / Complete Lead Free

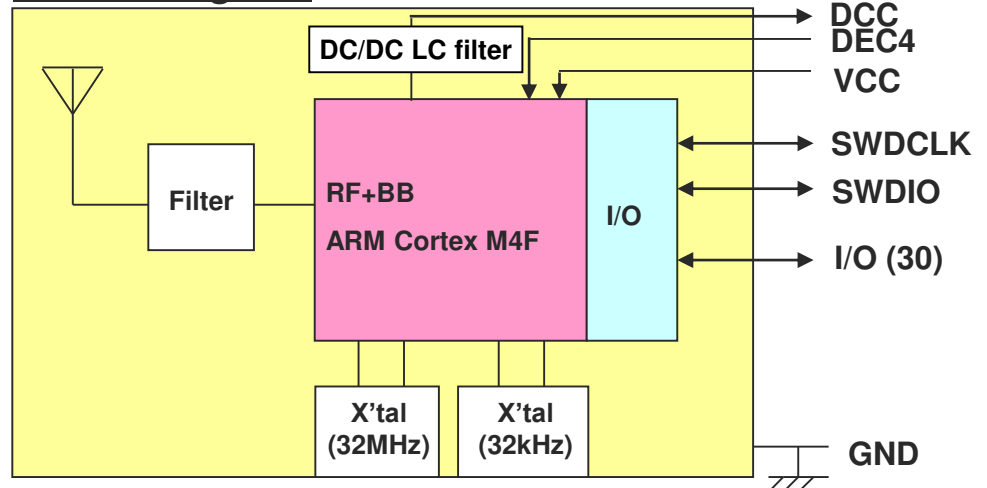
## Applications

- 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.

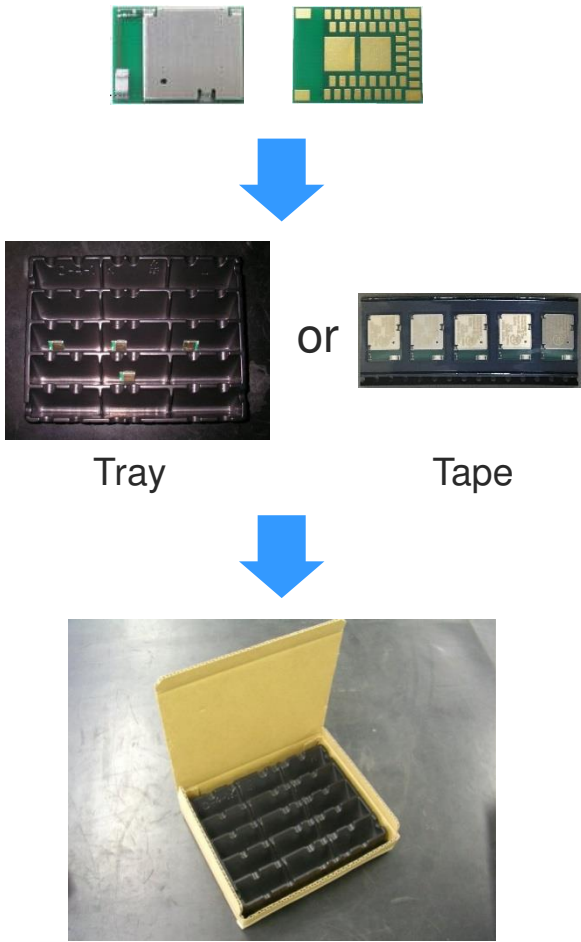
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# Bluetooth® low energy Module Sample, Evaluation Board / Kit

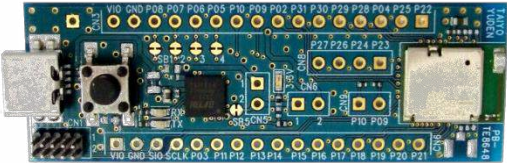
## EYSHCNZWZ (Module)

### Module samples



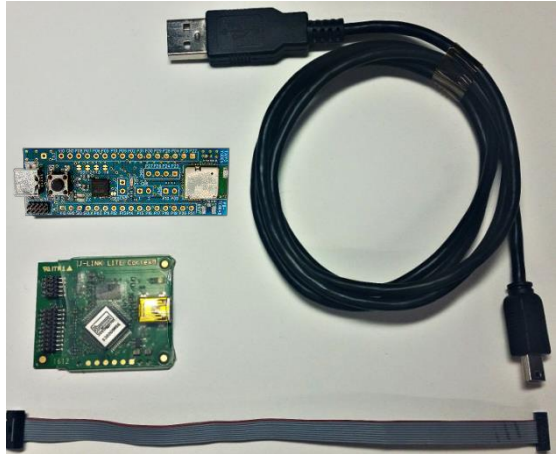
## EBSHCNZWZ (EV-B)

### Evaluation board



## EKSHCNZWZ (EV-K)

### Evaluation kit



# 2Mbps Bluetooth® 5.0 low energy Module: EYSHJNZWZ

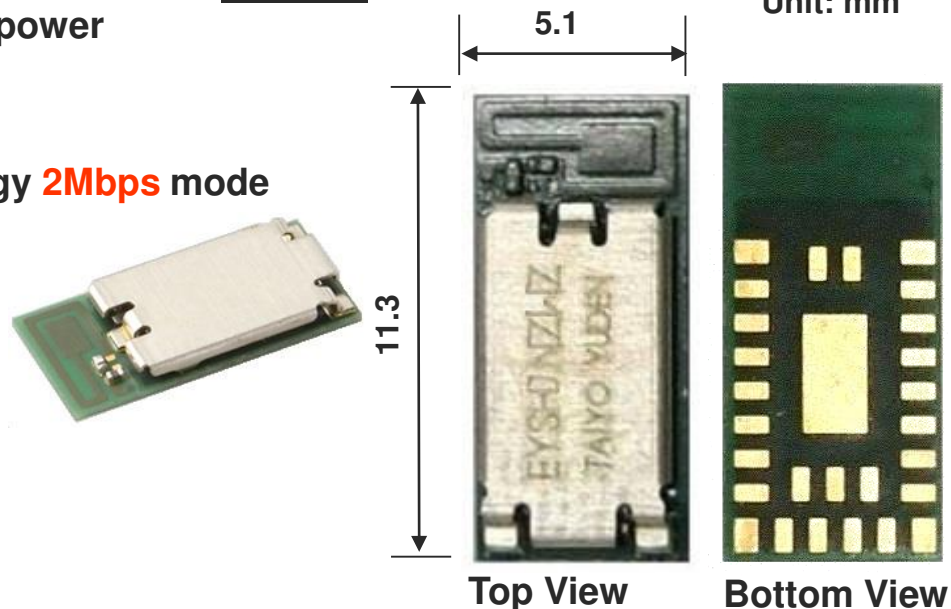
## Features

- Frequency: 2402 to 2480 MHz with +4dBm Output power
- Single power supply: 1.7– 3.6V
- Single Mode Bluetooth low energy (ANT™ Available)
- Chip: **nRF52832** (Nordic) with Bluetooth low energy **2Mbps** mode
- 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 1.3**mm MAX
- Operating Temperature range: -40 to 85 deg-C
- Bluetooth and Japan, FCC, IC qualified
- ETSI EN 300 328 v2.1.1 Conducted Test Report Available
- RoHS compliant / Complete Lead Free

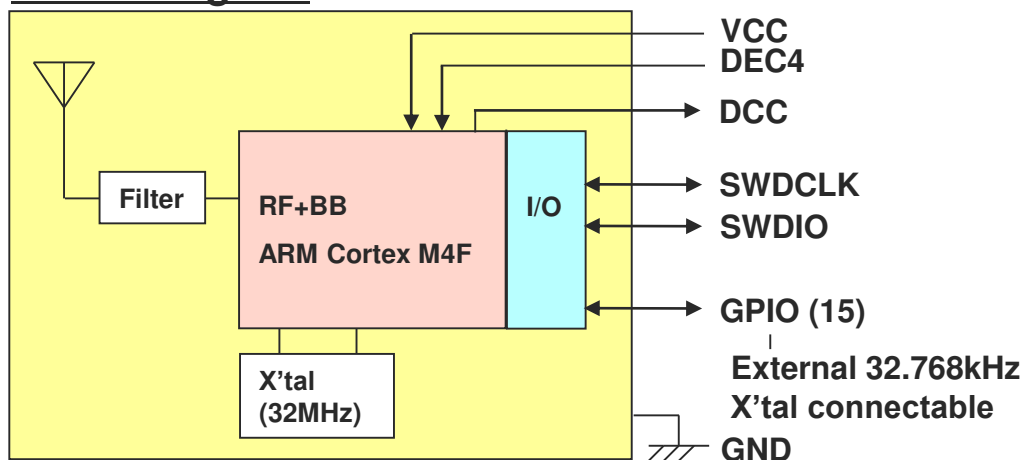
## Applications

- 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



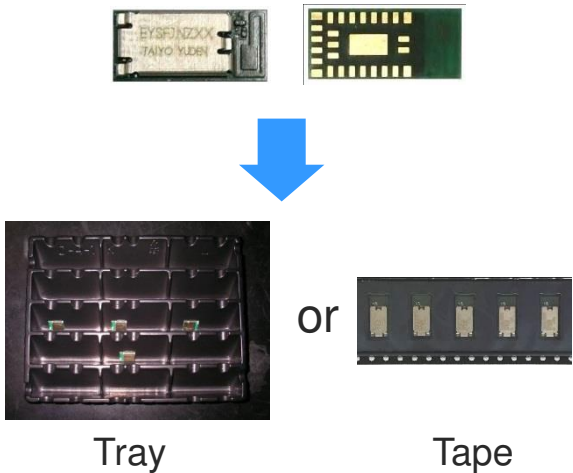
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# Bluetooth® low energy Module Sample, Evaluation Board / Kit

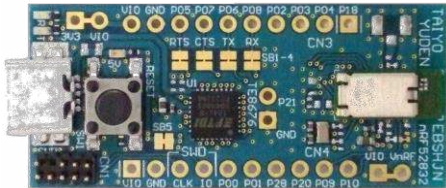
## EYSHJNZWZ (Module)

### Module samples



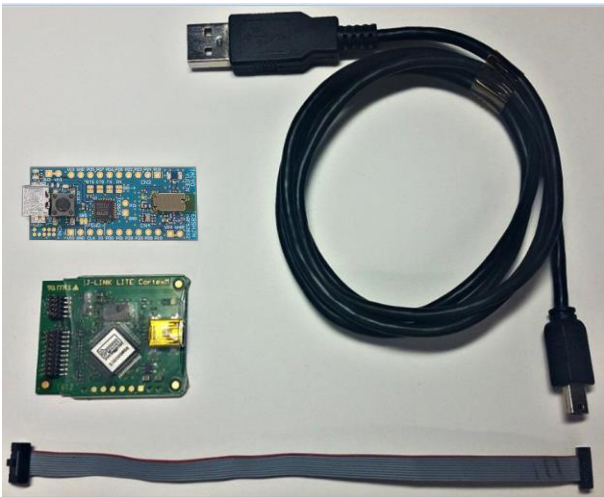
## EBSHJNZWZ (EV-B)

### Evaluation board



## EKSHJNZWZ (EV-K)

### Evaluation kit



# 2Mbps Bluetooth® 5.0 low energy Module: EYLSNZWW

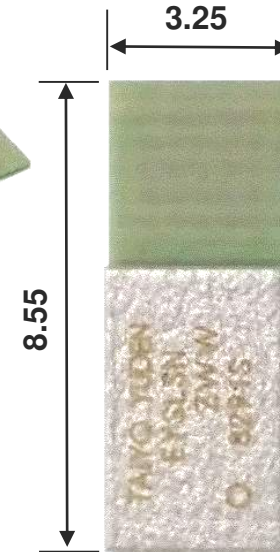
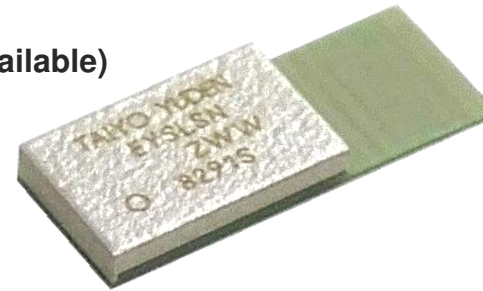
## Features

- Frequency: 2402 to 2480 MHz with +4dBm Output power
- Single power supply: 1.7– 3.6V
- Single Mode Bluetooth low energy (ANT™ Available)
- Bluetooth 5.0 low energy 2Mbps mode
- Chip: nRF52810 (Nordic)
- Integrated System Clock
- ARM Cortex M4 32bit processor
- 192kB Flash and 24kB RAM
- Interface: SPI, UART, I2C, PDM and 12bit ADC
- Integrated high performance PCB antenna
- Outline: 3.25 x 8.55 x 1.00mm MAX
- Operating Temperature range: -40 to 85 deg-C
- Bluetooth and Japan, FCC, IC qualified
- ETSI EN 300 328 v2.1.1 Conducted Test Report Available
- RoHS compliant / Complete Lead Free

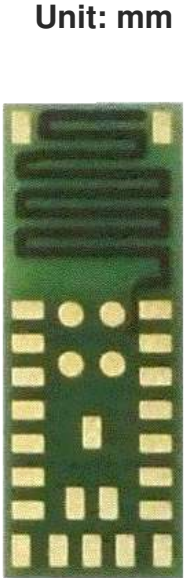
## Applications

- Smart wristband
- Smart glasses
- Remote control ring
- Smart pen
- Heart rate monitor
- pressure monitor
- Blood glucose meter
- Thermometer
- Mobile accessories

## Outline



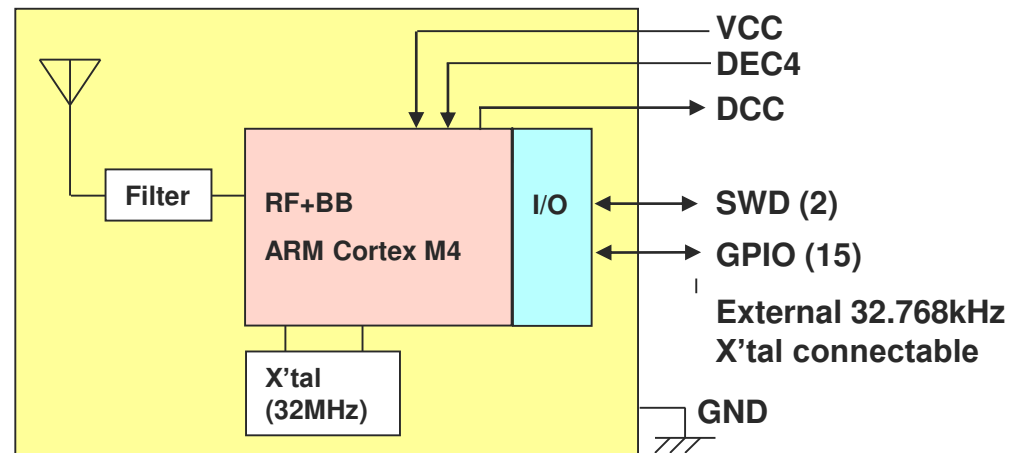
Top View



Bottom View

Unit: mm

## Block Diagram



All specifications are subject to change without notice.

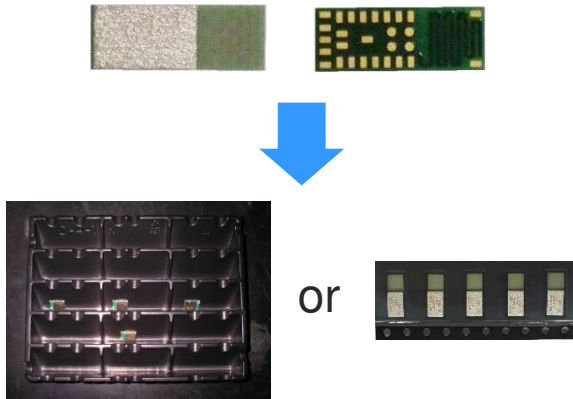
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# Bluetooth® low energy Module Sample, Evaluation Board / Kit

## EYSLSNZWW (Module)

### Module samples



Tray

Tape



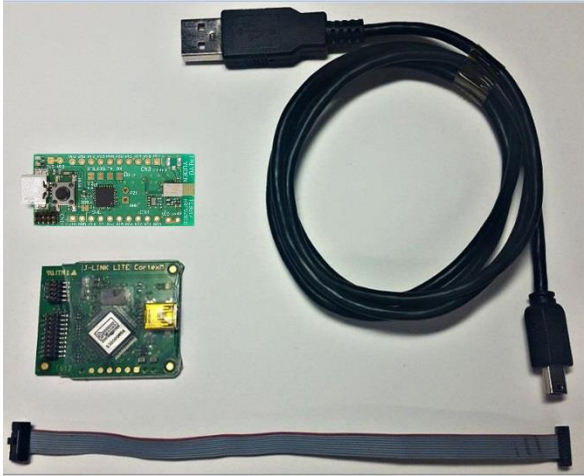
## EBSLSNZWW (EV-B)

### Evaluation board



## EKSLSNZWW (EV-K)

### Evaluation kit



SEGGER  
J-Link LITE  
Attached

# 2Mbps Bluetooth® 5.0 low energy Module: EYSLCNZWW

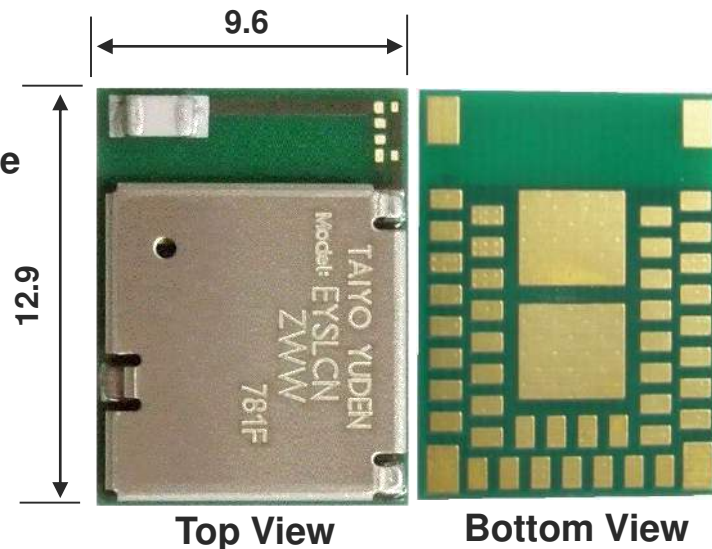
## Features

- Frequency: 2402 to 2480 MHz with +4dBm Output power
- Single power supply: 1.7 – 3.6V
- Single Mode Bluetooth low energy (ANT™ Available)
- Chip: **nRF52810** (Nordic) with Bluetooth low energy **2Mbps** mode
- Integrated System/**Sleep Clock, LC for DC/DC**
- Integrated high performance ceramic chip antenna
- ARM Cortex M4** 32bit processor
- 192kB Flash** and **24kB RAM**
- Interface: SPI, UART, I2C, PDM and 12bit ADC
- Outline: **9.6 x 12.9 x 2.0** mm with **1mm** pad pitch
- Operating Temperature range: -40 to 85 deg-C
- Bluetooth and Japan, FCC, IC qualified
- ETSI EN 300 328 v2.1.1 Conducted Test Report Available
- RoHS compliant / Complete Lead Free

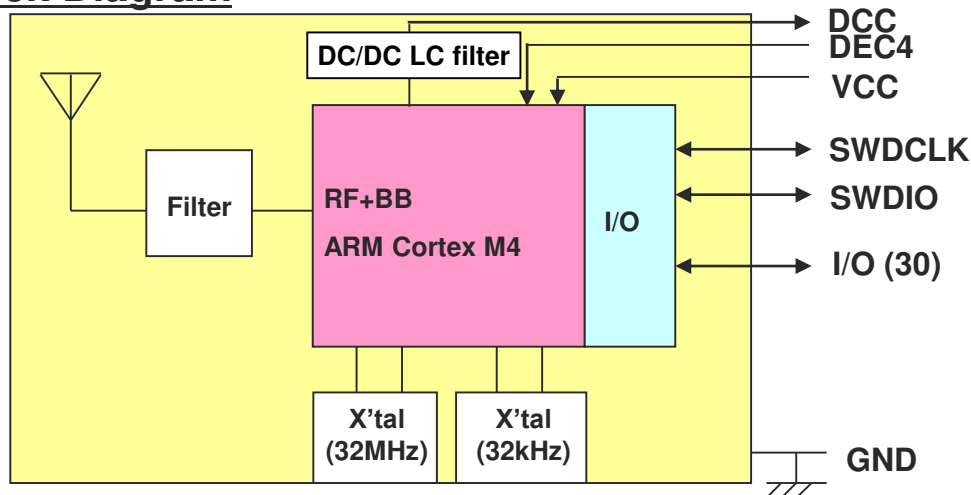
## Applications

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

## Outline



## Block Diagram



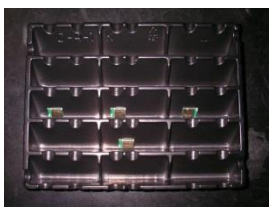
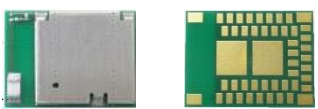
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# Bluetooth® low energy Module Sample, Evaluation Board / Kit

## EYSLCNZWW (Module)

### Module samples



or



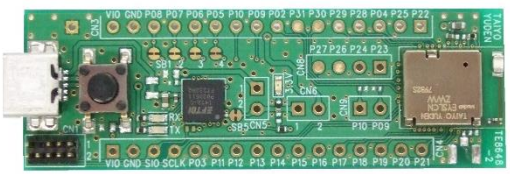
Tray

Tape



## EBSLCNZWW (EV-B)

### Evaluation board



## EKSLCNZWW (EV-K)

### Evaluation kit



SEGGER  
J-Link LITE  
Attached





# Bluetooth® low energy Module: **EYSGCNZXX**

## Features

- Frequency: 2402 to 2480 MHz
- Output power: +4dBm typ.
- Single power supply: 1.8 – 3.6V
- Single Mode Bluetooth low energy 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: -40 to 85 deg-C**
- Bluetooth and Japan, FCC, IC qualified
- ETSI EN 300 328 v2.1.1 Conducted Test Report Available
- RoHS compliant / Complete Lead Free

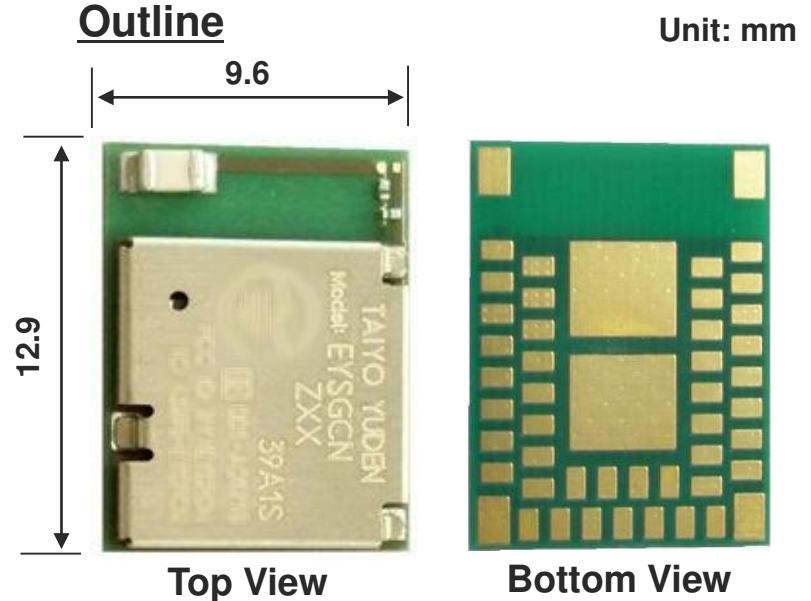
## Applications

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

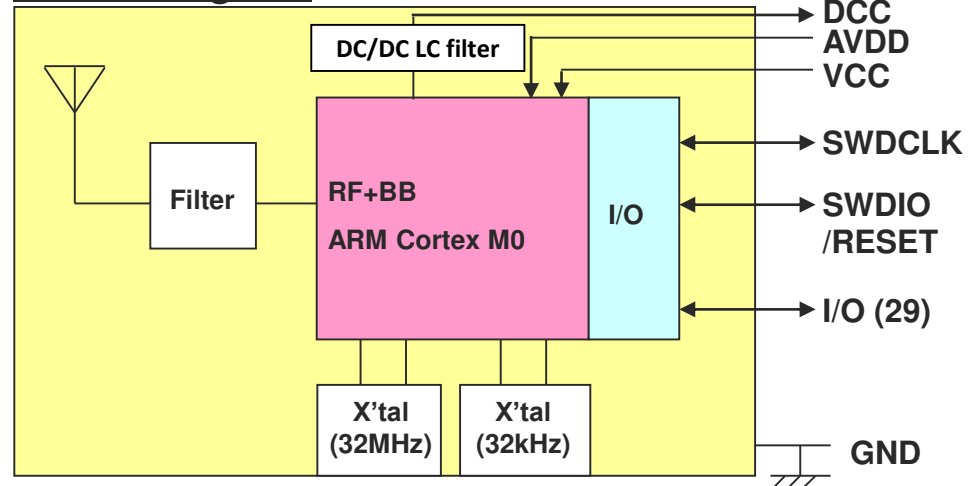
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**TAIYO YUDEN**



## Block Diagram



# Bluetooth® low energy Module: **EYSGCNZWY**

## Features

- Frequency: 2402 to 2480 MHz
- Output power: +4dBm typ.
- Single power supply: 1.8 – 3.6V
- Single Mode Bluetooth low energy **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 85 deg-C**
- Bluetooth and Japan, FCC, IC qualified
- ETSI EN 300 328 v2.1.1 Conducted Test Report Available
- RoHS compliant / Complete Lead Free

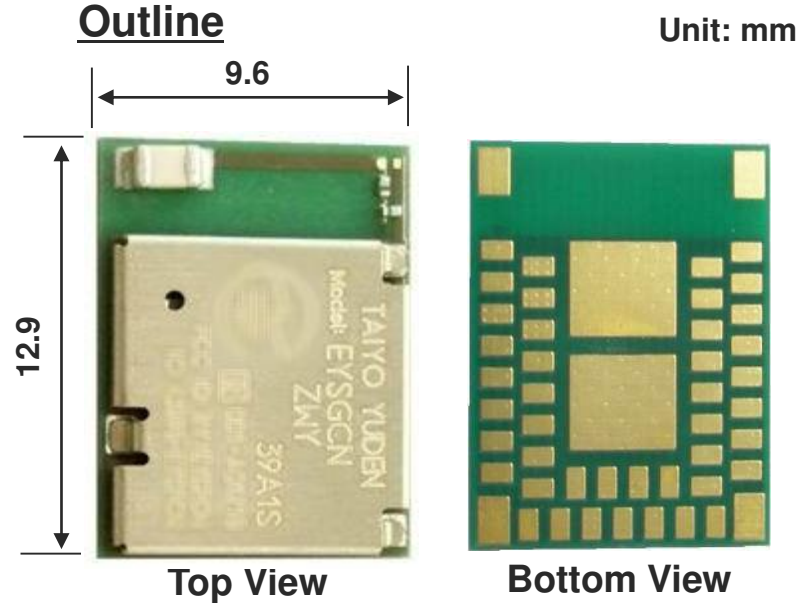
## Applications

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

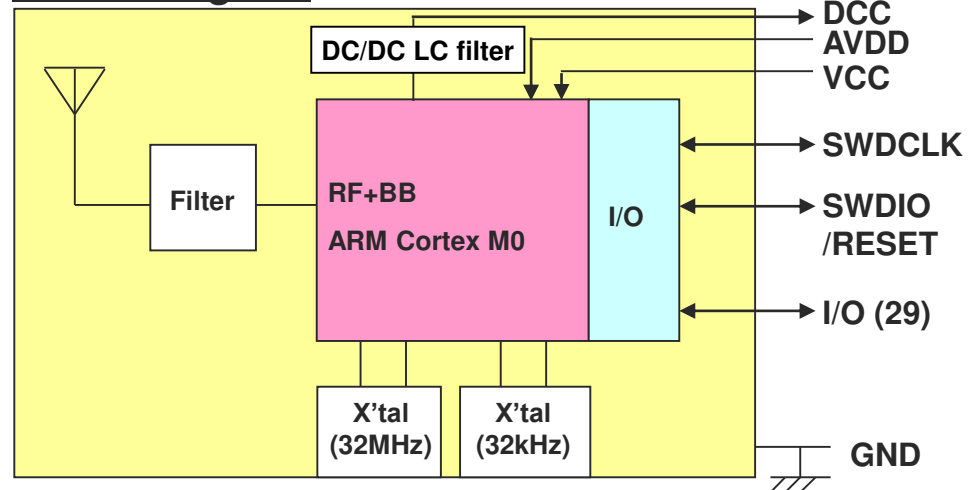
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**TAIYO YUDEN**



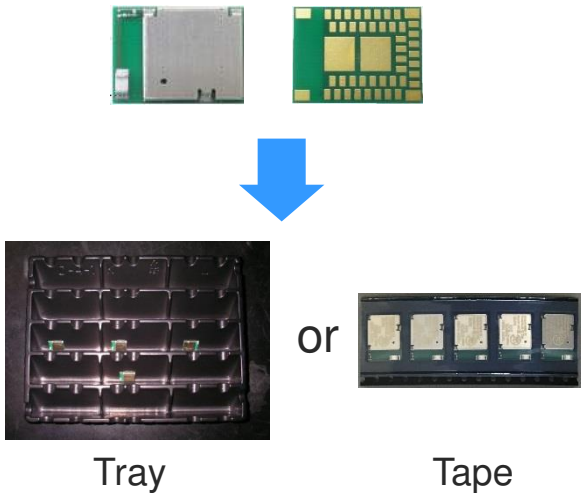
## Block Diagram



# Bluetooth® low energy Module Sample, Evaluation Board / Kit

## EYSGCNZXX, EYSGCNZWY (Module)

### Module samples



## EBSGCMZWY (EV-B)

### Evaluation board



## EKSGCMZWY (EV-K)

### Evaluation kit

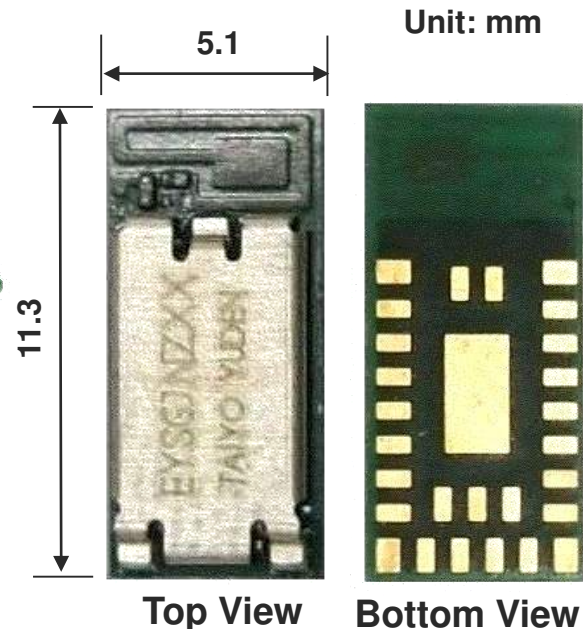


# Bluetooth® low energy Module **EYSGJNZXX**

## Features

- Frequency: 2402 to 2480 MHz
- Output power: +4dBm typ.
- Single power supply: 1.8 – 3.6V
- Single Mode Bluetooth low energy 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 1.3mm MAX**
- Operating Temperature range: -40 to 85 deg-C**
- Bluetooth and Japan, FCC, IC qualified
- ETSI EN 300 328 v2.1.1 Conducted Test Report Available
- RoHS compliant / Complete Lead Free

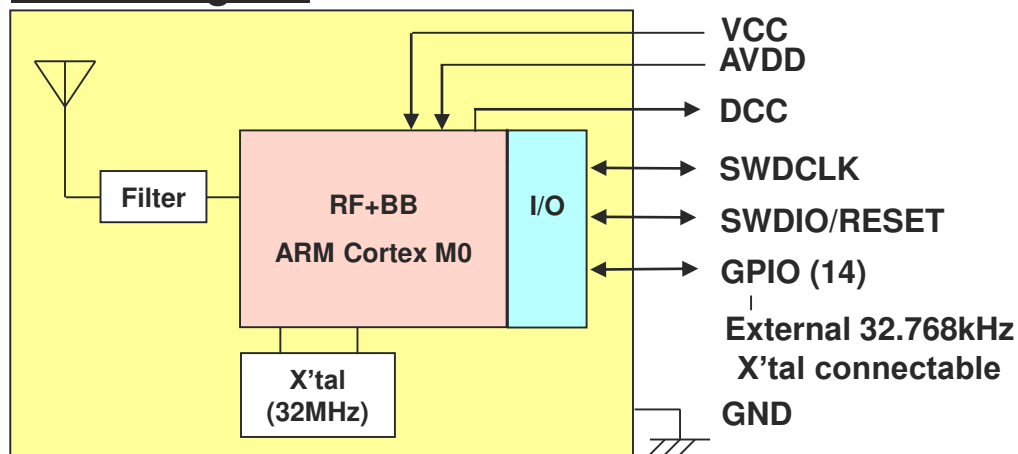
## Outline



## Applications

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

## Block Diagram



All specifications are subject to change without notice.

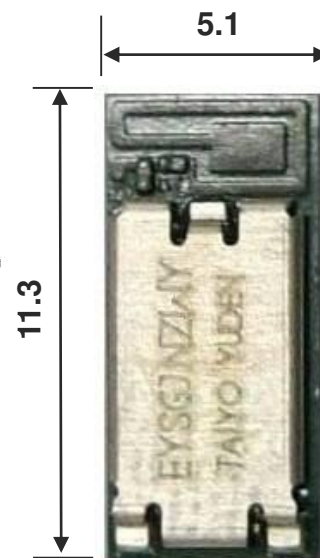
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# Bluetooth® low energy Module **EYSGJNZWY**

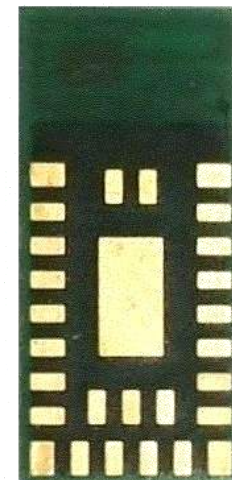
## Features

- Frequency: 2402 to 2480 MHz
- Output power: +4dBm typ.
- Single power supply: 1.8 – 3.6V
- Single Mode Bluetooth low energy **Slave / Master**
- Chip: nRF51822 **Rev3** (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 1.3mm MAX**
- Operating Temperature range: -25 to 85 deg-C**
- Bluetooth and Japan, FCC, IC qualified
- ETSI EN 300 328 v2.1.1 Conducted Test Report Available
- RoHS compliant / Complete Lead Free

## Outline



Top View



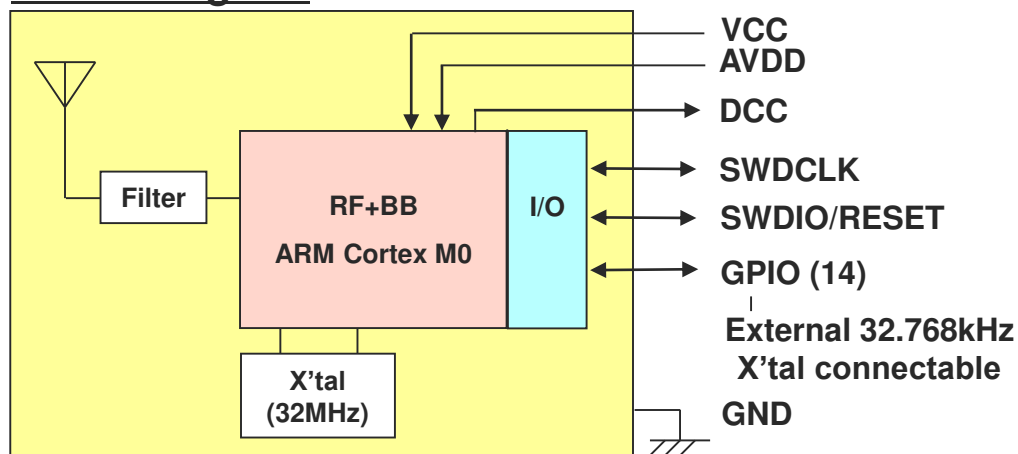
Bottom View

Unit: mm

## Applications

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

## Block Diagram



All specifications are subject to change without notice.

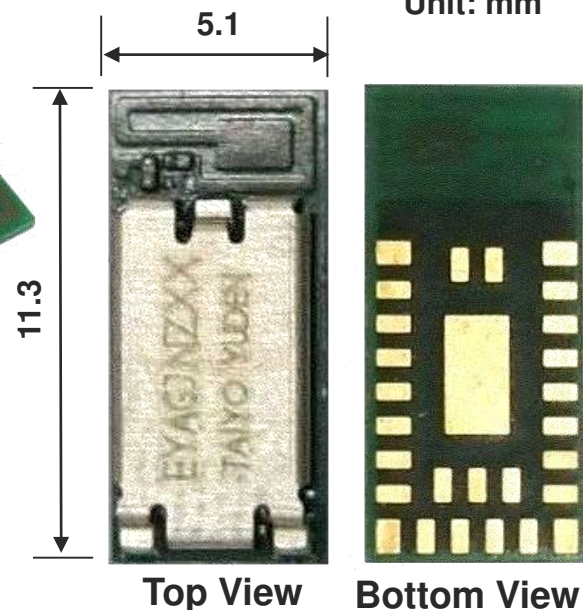
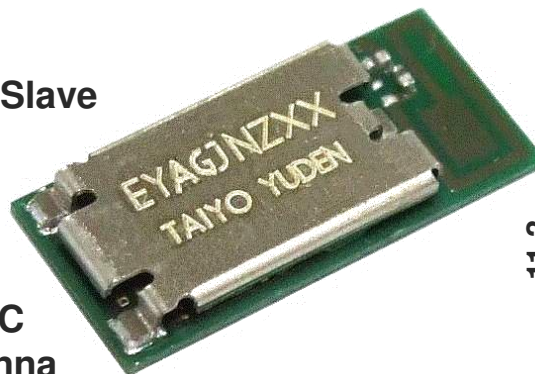
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# ANT + Bluetooth® low energy Module **EYAGJNZXX**

## Features

- Frequency: 2402 to 2480 MHz
- Output power: +4dBm typ.
- Single power supply: 1.8 – 3.6V
- ANT** + Single Mode Bluetooth low energy 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 1.3mm MAX**
- Operating Temperature range: -25 to 85 deg-C**
- Bluetooth and Japan, FCC, IC qualified
- ETSI EN 300 328 v2.1.1 Conducted Test Report Available
- RoHS compliant / Complete Lead Free

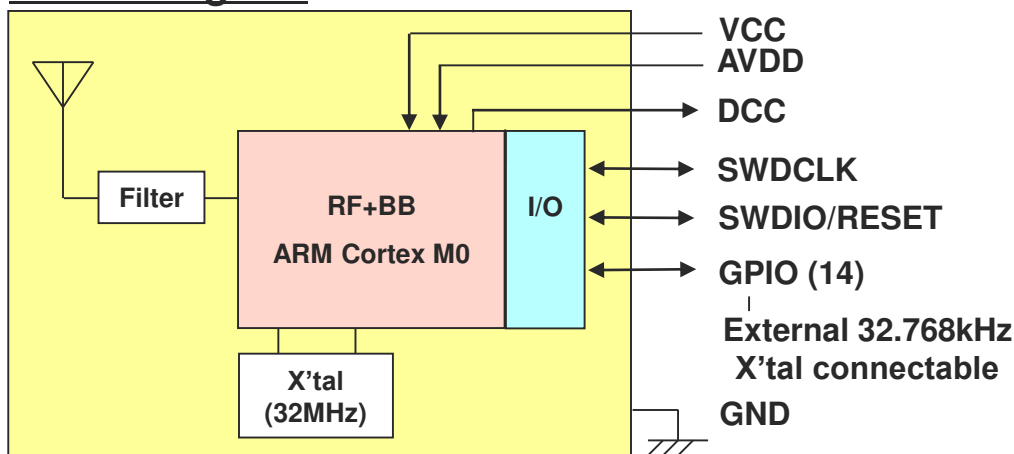
## Outline



## Applications

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

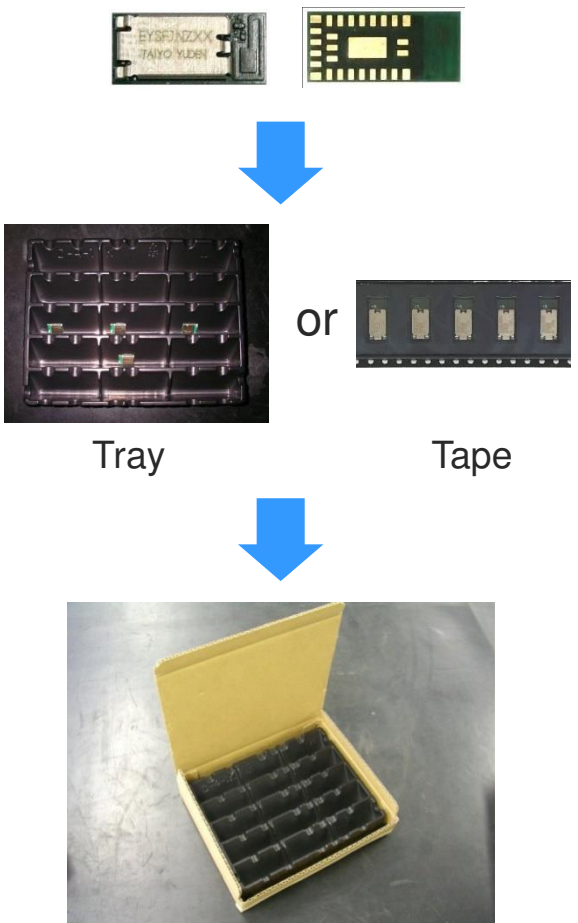
## Block Diagram



# Bluetooth® low energy Module Sample, Evaluation Board / Kit

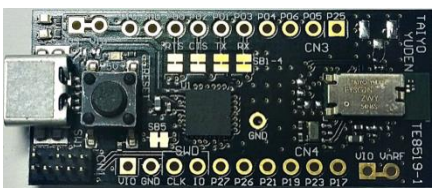
**EYSGJNZXX, EYSGJNZWY, EYAGJNZXX** (Module)

## Module samples



**EBSGJNZWY, EBAGJNZXX** (EV-B)

## Evaluation board

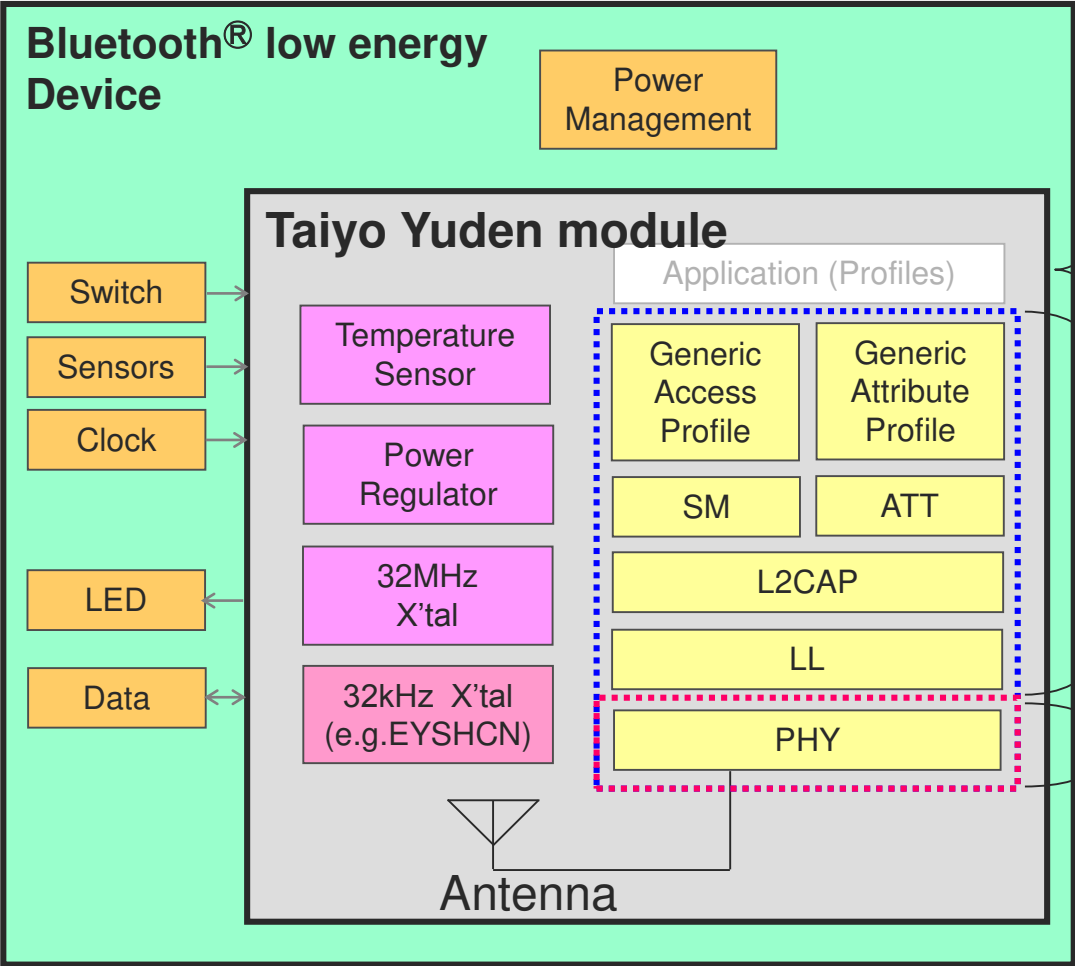


**EKSGJNZWY, EKAGJNZXX** (EV-K)

## 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

**Softdevice**

**Taiyo Yuden module**

- SM:** Security Manager
- ATT:** Attribute Protocol
- L2CAP:** Logical Link Control and Adaptation Protocol
- LL:** Link Layer
- PHY:** Physical Layer

## Taiyo Yuden Basic Module



# Bluetooth® 5.0 low energy Module: EYSKBNUWB-WX

## Features

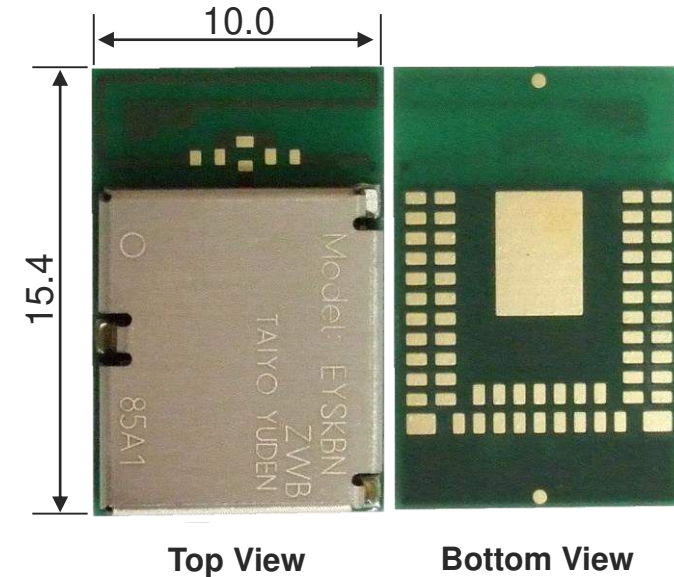
- Frequency: 2402 to 2480 MHz with **+8dBm** Output power
- Single power supply: 1.7 – 5.5V
- Single Mode **Bluetooth 5.0 (Master / Slave)**
- **Bluetooth 5 data rate support: 2M / 1M / 125kbps**
- Chip: **nRF52840** (Nordic)
- Integrated System/Sleep Clock, 2 x LC for DC/DC
- Integrated high performance PCB antenna
- ARM® Cortex M4F 32bit processor and 1MB Flash & 256kB RAM
- **Application Embedded by Taiyo Yuden**
- Interface: UART, SPI, USB and ADC
- Outline: **10.0 x 15.4 x 2.0** mm
- Operating Temperature range: -40 to 85 deg-C
- Bluetooth and Japan, FCC, IC qualified
- ETSI EN 300 328 v2.1.1 Conducted Test Report Available
- RoHS compliant / Complete Lead Free

## Applications

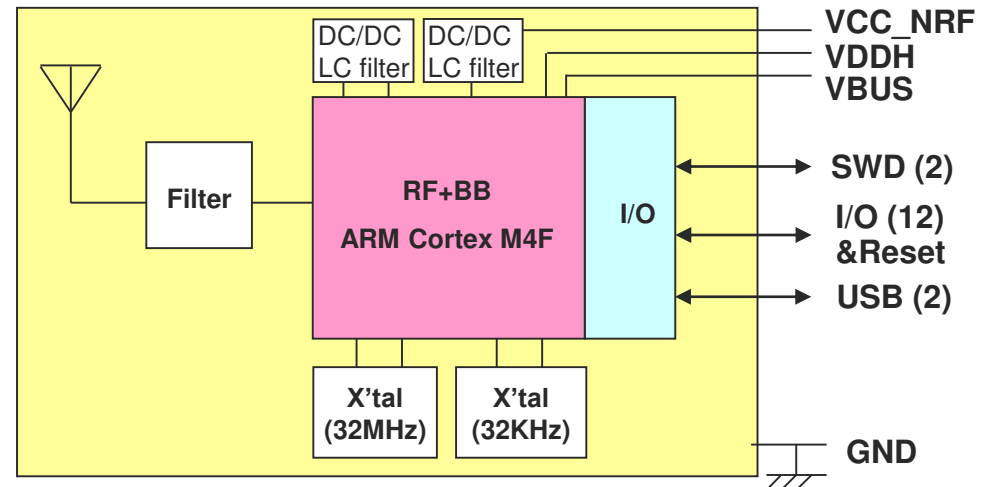
- Advanced wearables
  - Connected watches
  - Advanced personal fitness devices
  - Wearables with wireless payment
  - Connected health
  - Virtual/Augmented reality applications
- Internet of Things
  - Smart home sensors and controllers
  - Industrial IoT sensors and controllers
- Interactive entertainment devices

## Outline

Unit: mm



## Block Diagram



All specifications are subject to change without notice.

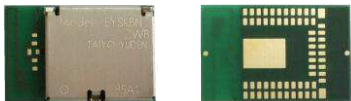
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# Bluetooth® low energy Module Sample, Evaluation Board / Kit

## EYSKBNUWB-WX (Module)

### Module samples



Tray

or

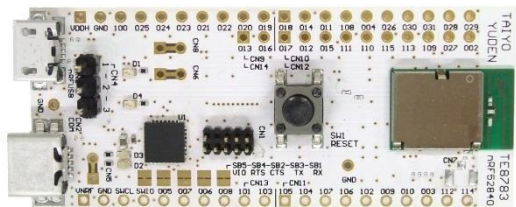


Tape



## EBSKBNUWB-WX (EV-B)

### Evaluation board



# Bluetooth® low energy Module: **EYSGCNAWY-VX**

## Features

- Frequency: 2402 to 2480 MHz
- Output power: +4dBm typ.
- Single power supply: 1.8 – 3.6V
- Single Mode Bluetooth **4.2** low energy **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 : 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 85 deg-C
- Bluetooth and Japan, FCC, IC qualified
- CE Conducted Test Report Available
- RoHS compliant / Complete Lead Free

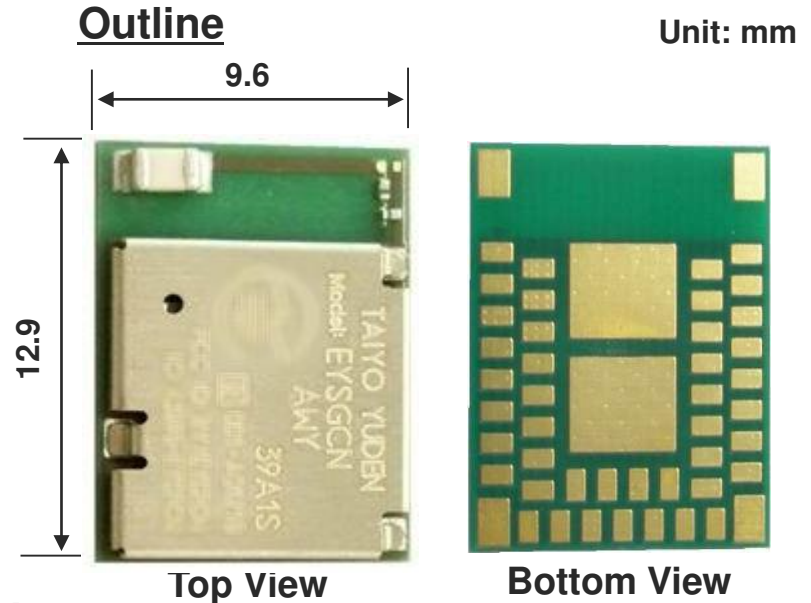
## Applications

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

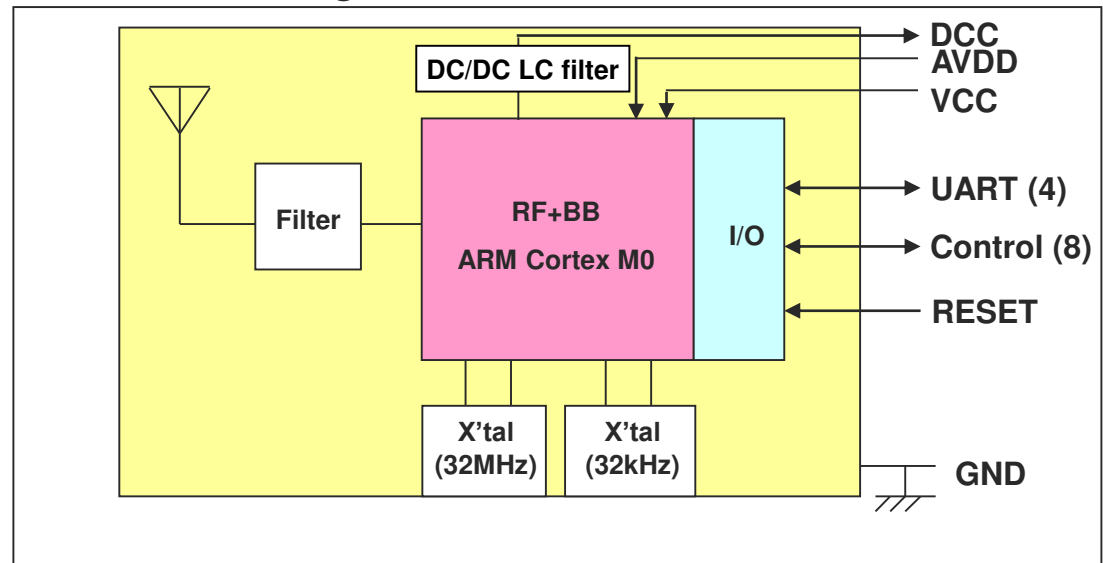
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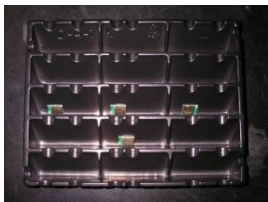
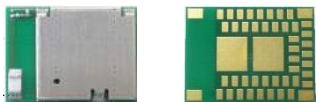
## Block Diagram



# Bluetooth® low energy Module Sample, Evaluation Board / Kit

## EYSGCNAWY-VX (Module)

### Module samples



Tray

or

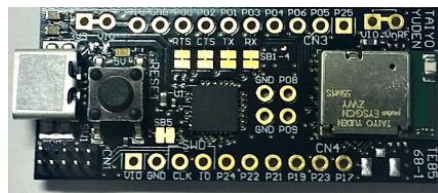


Tape



## EBSGCNAWY-VX (EV-B)

### Evaluation board



# Bluetooth® low energy Module **EYSGJNAWY-VX**

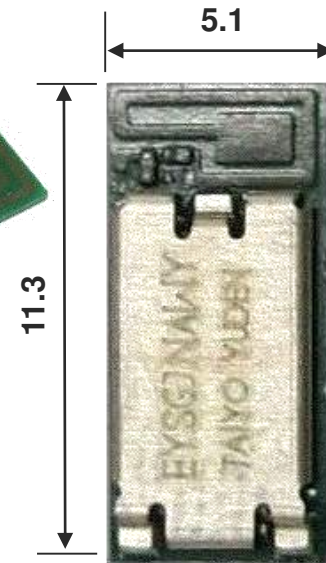
## Features

- Frequency: 2402 to 2480 MHz
- Output power: +4dBm typ.
- Single power supply: 1.8 – 3.6V
- Single Mode Bluetooth **4.2** low energy **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 1.3**mm MAX
- Operating Temperature range: -25 to 85 deg-C
- Bluetooth and Japan, FCC, IC qualified
- CE Conducted Test Report Available
- RoHS compliant / Complete Lead Free

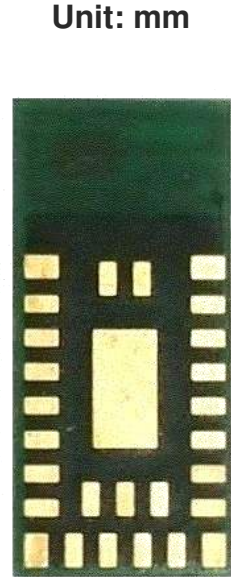
## Applications

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

## Outline



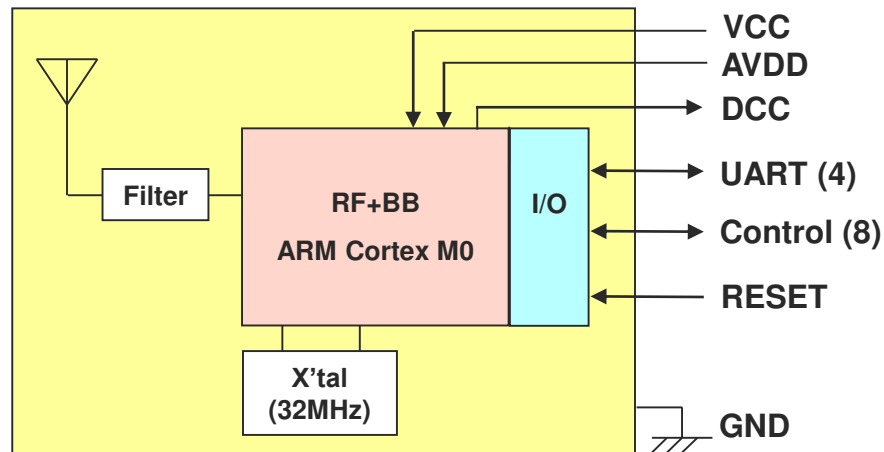
Top View



Bottom View

Unit: mm

## Block Diagram



All specifications are subject to change without notice.

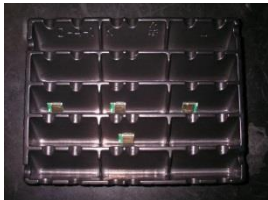
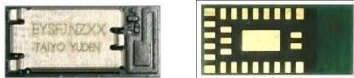
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# Bluetooth® low energy Module Sample, Evaluation Board / Kit

## EYSGJNAWY-VX (Module)

### ■ Module samples



Tray

or

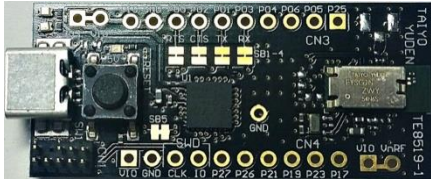


Tape



## EBSGJNAWY-VX (EV-B)

### ■ Evaluation board



# Bluetooth® low energy Module: **EYSGCNAWY-WX**

## Features

- Frequency: 2402 to 2480 MHz
- Output power: +4dBm typ.
- Single power supply: 1.8 – 3.6V
- Single Mode Bluetooth 4.1 low energy **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 : 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 85 deg-C
- Bluetooth and Japan, FCC, IC qualified
- ETSI EN 300 328 v2.1.1 Conducted Test Report Available
- RoHS compliant / Complete Lead Free

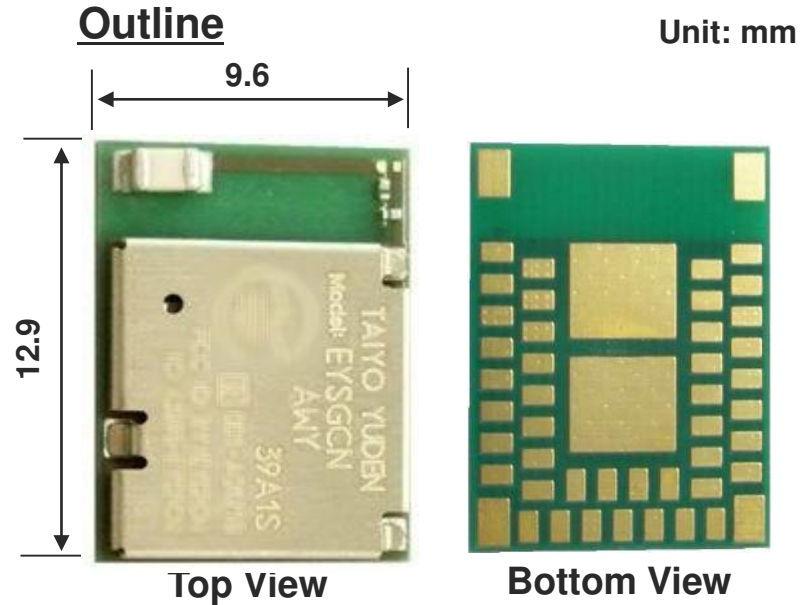
## Applications

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

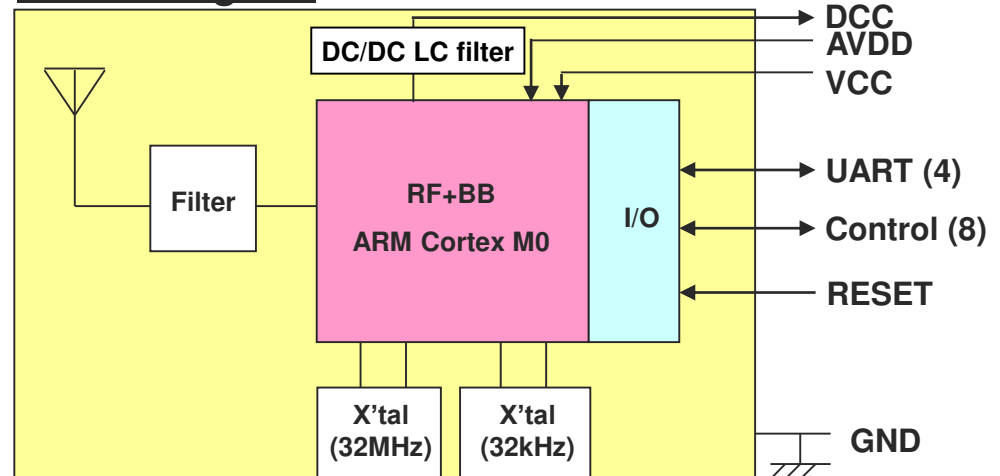
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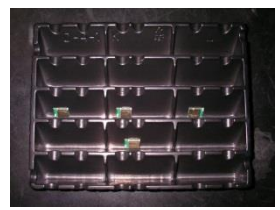
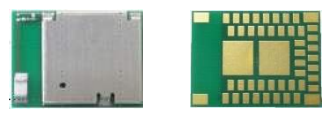
## Block Diagram



# Bluetooth® low energy Module Sample, Evaluation Board / Kit

## EYSGCNAWY-WX (Module)

### Module samples



Tray

or

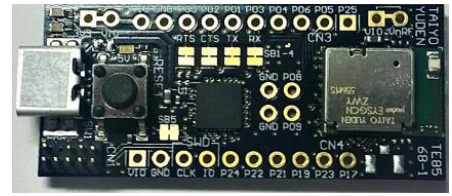


Tape



## EBSGCNAWY-WX (EV-B)

### Evaluation board



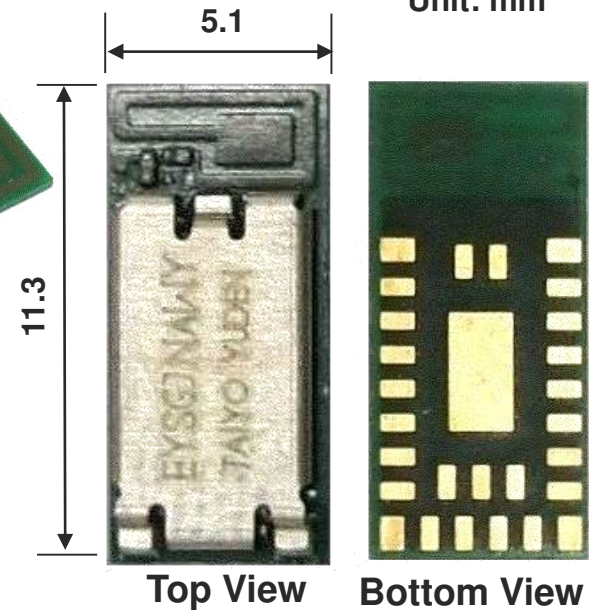


# Bluetooth® low energy Module **EYSGJNAWY-WX**

## Features

- Frequency: 2402 to 2480 MHz
- Output power: +4dBm typ.
- Single power supply: 1.8 – 3.6V
- Single Mode Bluetooth 4.1 low energy **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 1.3**mm MAX
- Operating Temperature range: -25 to 85 deg-C
- Bluetooth and Japan, FCC, IC qualified
- ETSI EN 300 328 v2.1.1 Conducted Test Report Available
- RoHS compliant / Complete Lead Free

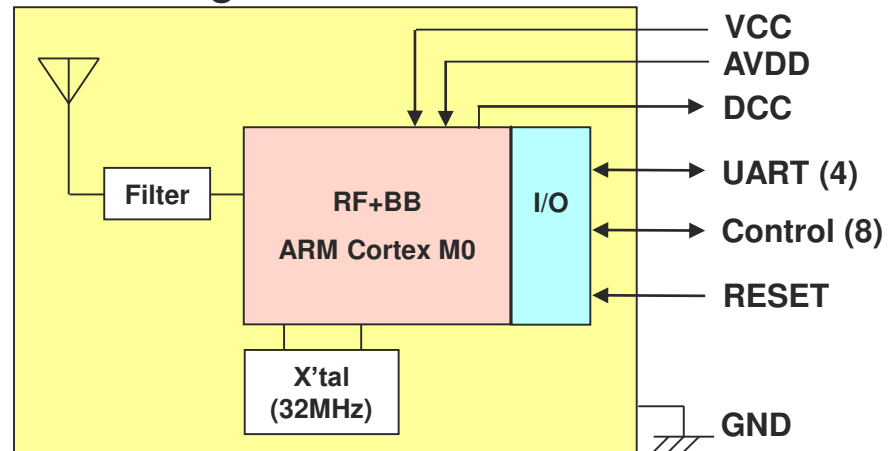
## Outline



## Applications

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

## Block Diagram



All specifications are subject to change without notice.

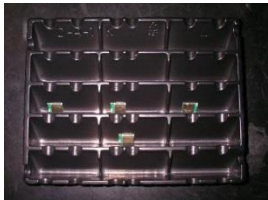
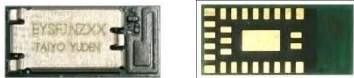
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# Bluetooth® low energy Module Sample, Evaluation Board / Kit

## EYSGJNAWY-WX (Module)

### ■ Module samples



Tray

or

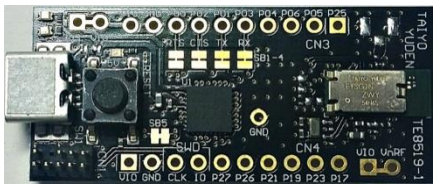


Tape

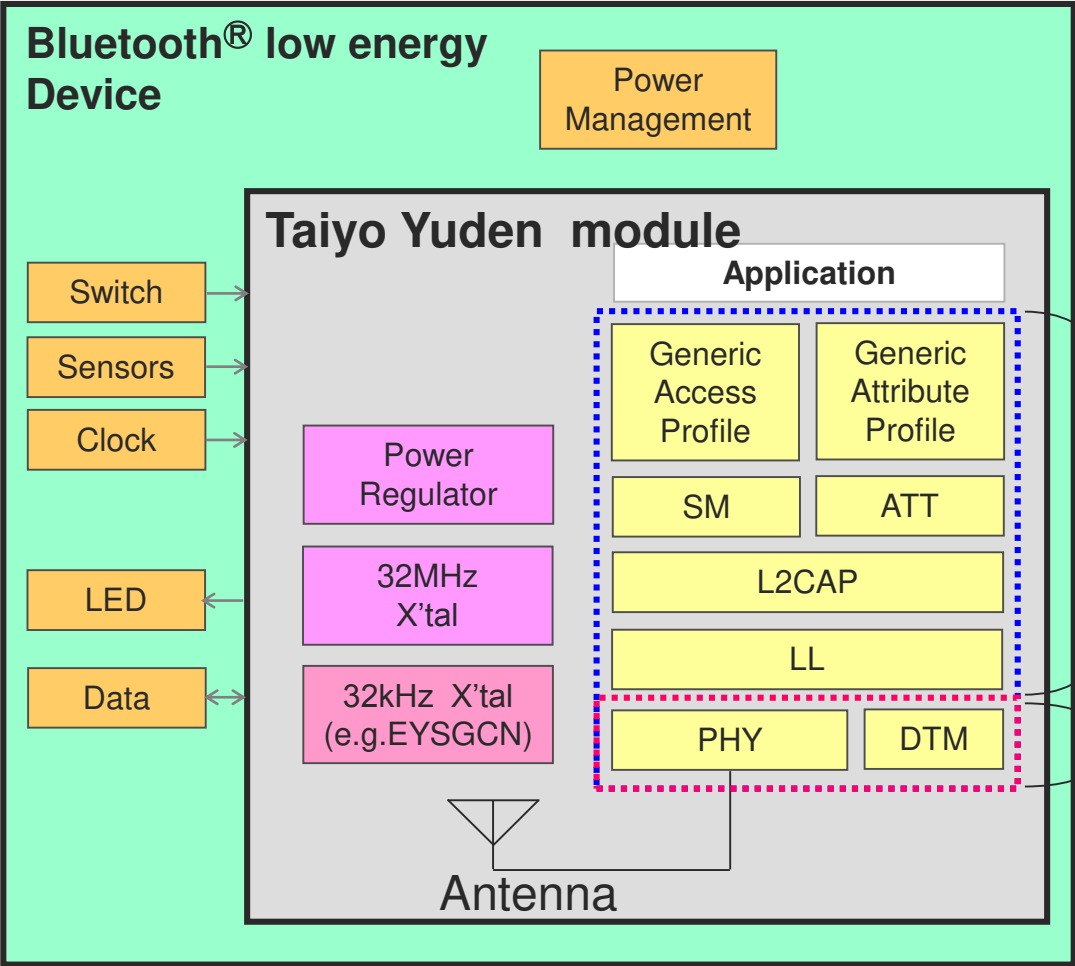


## EBSGJNAWY-WX (EV-B)

### ■ Evaluation board



# Application Layer image for Application Embedded Module



**Connection option**

**-VX , -WX** module for  
**Module – Module**  
**Module – Smart phone**

Softdevice

Taiyo Yuden module

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

## Taiyo Yuden Application Embedded Module

# Bluetooth® low energy standard module

Type	Part No.	Size (LxWxH)	Specification	ANT™ Support	I/F	RAM (kB)	Certification	Temperature
High Performance Basic (Software Support : Nordic)	EYSKBNZWB	10.0x15.4x2.0mm	Bluetooth V5.0	✓	USB※3 UART SPI I2C I2S※4 PDM	256	Japan FCC IC (CE)※2	-40~+85 deg-C
	EYSHSNZWZ	3.25x8.55X0.85mm		✓		64		
	EYSLSNZWW	3.25x8.55X1.00mm		✓		24		
	EYSHCNZWZ	9.6x12.9X2.0mm		✓		64		
	EYSLCNZWW					24		
	EYSHJNZWZ	5.1x11.3X1.3mm		✓		64		
Basic (Software Support : Nordic)	EYSGCNZXX	9.6x12.9x2.0mm	Bluetooth V4.2※1		UART SPI I2C	16		-40~+85 deg-C (EYSKBNUWB-WX, EYSGCNZXX, EYSGJNZXX)
	EYSGCNZWY					32		
	EYSGJNZXX	5.1x11.3x1.3mm				16		
	EYSGJNZWY					32		
	EYAGJNZXX			✓		32		
Application Embedded – Module (Software Support : TAIYO YUDEN)	EYSKBNUWB-WX	10.0x15.4x2.0mm	Bluetooth V5.0		UART, SPI USB	N/A		-25~+85 deg-C (other than the above)
	EYSGCNAWY-VX	9.6x12.9x2.0mm	Bluetooth V4.2		UART			
	EYSGJNAWY-VX	5.1x11.3x1.3mm						

※1 Supported by S130 SoftDevice, ※2 ETSI EN 300 328 v2.1.1 conducted test report available

※3 Supported by EYSKBNZWB only, ※4 Supported by EYSKBNZWB and EYSHxNZWZ

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