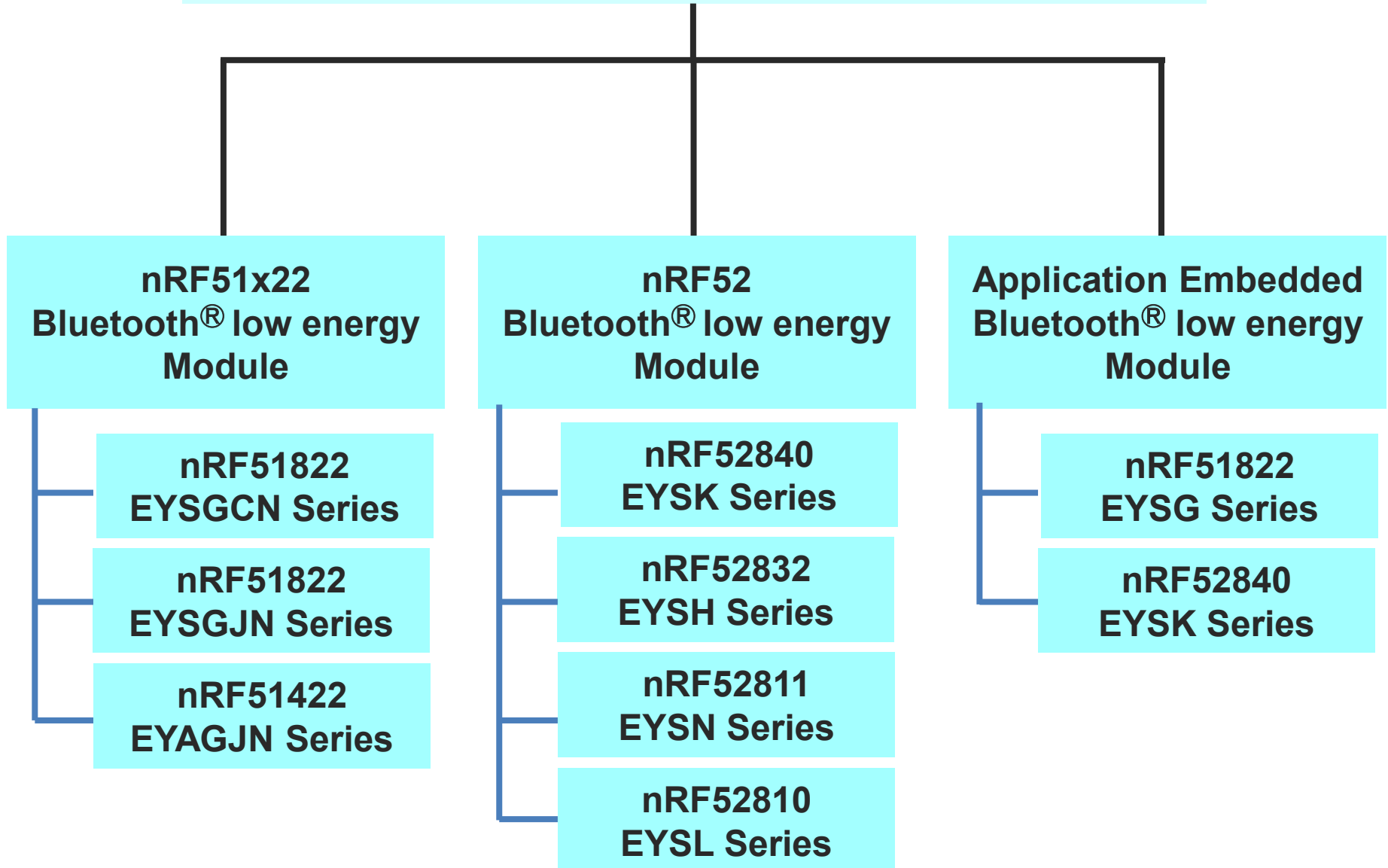


Wireless Module *Bluetooth[®] low energy* Module Overview

May 11, 2020 Version 3.0

TAIYO YUDEN Bluetooth® low energy Module Line-Up

TAIYO YUDEN Bluetooth® low energy Module



TAIYO YUDEN Bluetooth® low energy Module Line-Up

nRF51x22 Bluetooth® low energy Module

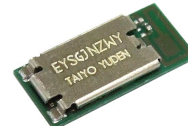
nRF51822 EYSG Series

nRF51422 EYAG Series

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

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

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



EYSGCN
ZXX

EYSGCN
ZWY

EYSGJN
ZXX

EYSGJN
ZWY

EYAGJN
ZXX

RAM 16kB

RAM 32kB

RAM 16kB

RAM 32kB

RAM 32kB

SoftDevice

SoftDevice

SoftDevice

SoftDevice

ANT + BLE

S110

S120

S110

S120

SoftDevice
S310

TAIYO YUDEN Bluetooth® low energy Module Line-Up

nRF52 Bluetooth® low energy Module

nRF52840
EYSK Series

nRF52832
EYSH Series

nRF52811
EYSN Series

nRF52810
EYSL Series

EYSKDN EYSKBN EYSKJN
ZWB ZWB ZWB

EYSHCN EYSHJN EYSHSN
ZWZ ZWZ ZWZ

EYSNCN EYSNSN
ZWW ZWW

EYSLCN EYSLSN
ZWW ZWW

RAM 256kB RAM 256kB RAM 256kB

RAM 64kB RAM 64kB RAM 64kB

RAM 24kB RAM 24kB

RAM 24kB RAM 24kB

SoftDevice S140 SoftDevice S140 SoftDevice S140

SoftDevice S132 SoftDevice S132 SoftDevice S132

SoftDevice S113 SoftDevice S113

SoftDevice S112 SoftDevice S112

High Performance ANT

Full-GPIO

Small

Full-GPIO

Small

Ultra-small*1

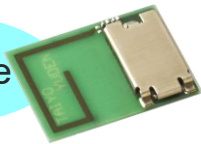
Full-GPIO

Ultra-small*2

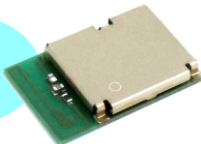
Full-GPIO

Ultra-small*2

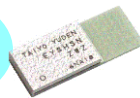
High Performance ANT



Full-GPIO



Ultra-small



Small



Full-GPIO



Embedded antenna
ext. 32kHz X'tal
DC/DC not supported
9.6 x 12.9 x 1.3mm

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

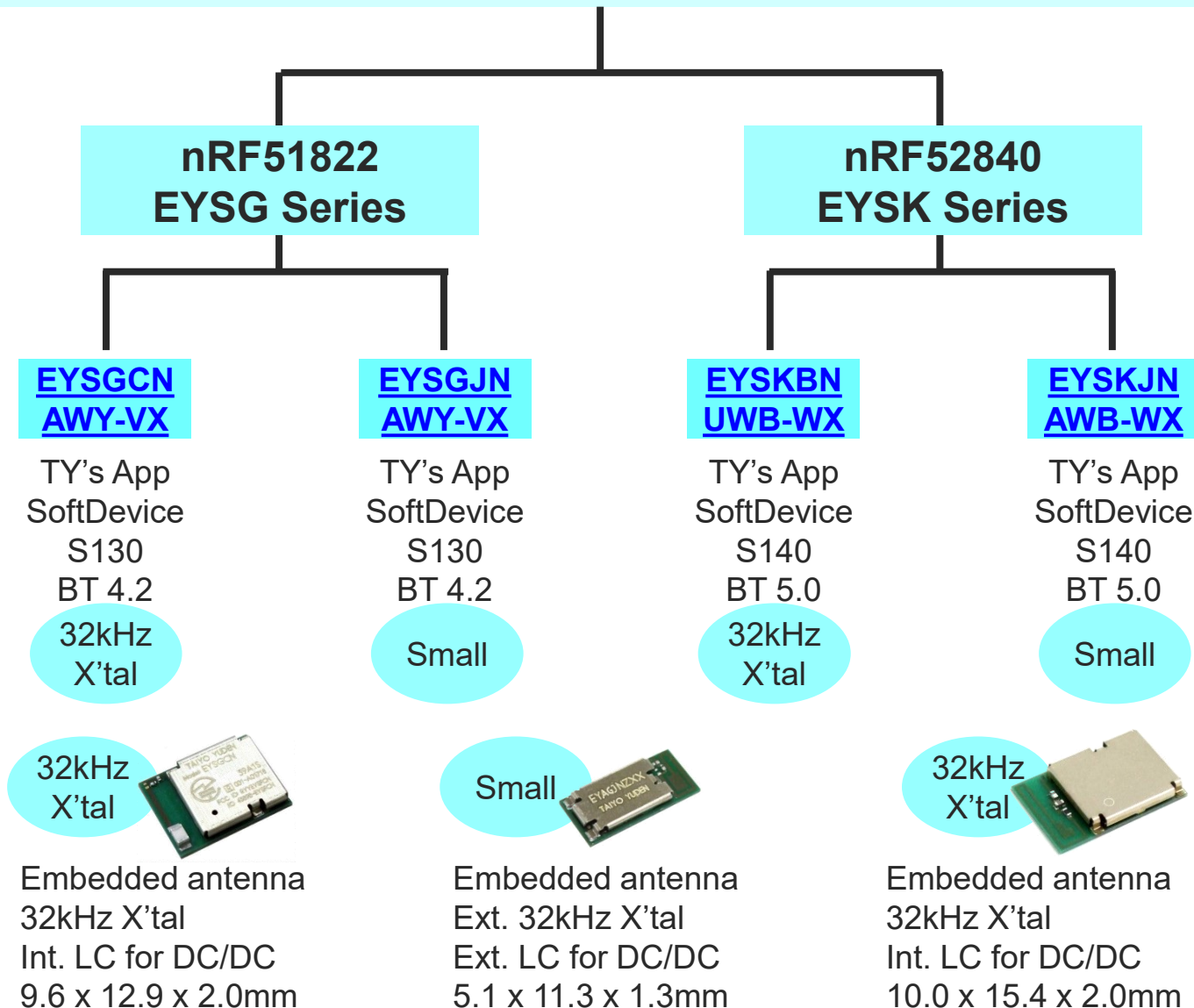
Embedded antenna
Ext. 32kHz X'tal
Ext. LC for DC/DC
*1: 3.25 x 8.55 x 0.85mm
*2: 3.25 x 8.55 x 1.00mm

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

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

TAIYO YUDEN Bluetooth® low energy Module Line-Up

Application Embedded Bluetooth® low energy Module



Latest Documents for Bluetooth® low energy Module

EYSKDNZWB	http://www.yuden.co.jp/or/product/category/module/EYSKDNZWB.html
EYSKJNZWB	http://www.yuden.co.jp/or/product/category/module/EYSKJNZWB.html
EYSKBNZWB	http://www.yuden.co.jp/or/product/category/module/EYSKBNZWB.html
EYSHSNZWZ	http://www.yuden.co.jp/or/product/category/module/EYSHSNZWZ.html
EYSHCNZWZ	http://www.yuden.co.jp/or/product/category/module/EYSHCNZWZ.html
EYSHJNZWZ	http://www.yuden.co.jp/or/product/category/module/EYSHJNZWZ.html
EYSNSNZWW	http://www.yuden.co.jp/or/product/category/module/EYSNSNZWW.html
EYSNCNZWW	http://www.yuden.co.jp/or/product/category/module/EYSNCNZWW.html
EYSLSNZWW	http://www.yuden.co.jp/or/product/category/module/EYSLSNZWW.html
EYSLCNZWW	http://www.yuden.co.jp/or/product/category/module/EYSLCNZWW.html

EYSGCNZXX	http://www.yuden.co.jp/or/product/category/module/EYSGCNZXX.html
EYSGCNZWY	http://www.yuden.co.jp/or/product/category/module/EYSGCNZWY.html
EYSGJNZXX	http://www.yuden.co.jp/or/product/category/module/EYSGJNZXX.html
EYSGJNZWY	http://www.yuden.co.jp/or/product/category/module/EYSGJNZWY.html
EYAGJNZXX	http://www.yuden.co.jp/or/product/category/module/EYAGJNZXX.html

EYSKBNUWB-WX	http://www.yuden.co.jp/or/product/category/module/EYSKBNUWB-WX.html
EYSKJNAWB-WX	http://www.yuden.co.jp/or/product/category/module/EYSKJNAWB-WX.html
EYSGCNAWY-VX	http://www.yuden.co.jp/or/product/category/module/EYSGCNAWY-VX.html
EYSGJNAWY-VX	http://www.yuden.co.jp/or/product/category/module/EYSGJNAWY-VX.html

-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>

High performance Antenna Bluetooth® 5.0 Module: EYSKDNZWB

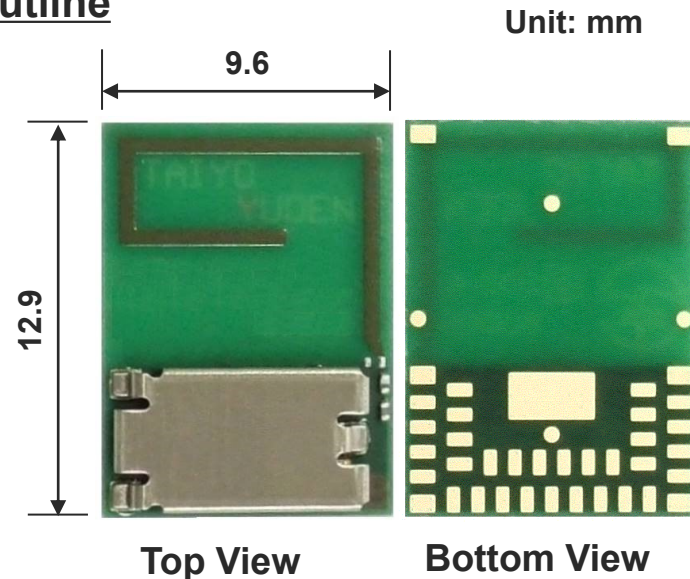
Features

- Frequency: 2402 to 2480 MHz with +8dBm Output power
- Single power supply: 1.7– 5.5V
- Single Mode **Bluetooth 5.0 / 802.15.4 (Zigbee, Thread)**
- Bluetooth 5 data rate support: 2M / 1M / 500k / 125kbps**
- Chip: **nRF52840** (Nordic)
- Integrated System Clock
- Integrated high performance PCB antenna**
- ARM® Cortex M4F** 32bit processor and **1MB Flash & 256kB RAM**
- ARM® TrustZone® Cryptocell 310** cryptographic accelerator
- Interface: **NFC-A**, SPI, UART, I2C, I2S, PDM and 12bit ADC
- Outline: **9.6 x 12.9 x 1.3mm** MAX
- Operating Temperature range: -40 to 85 deg-C
- Bluetooth and Japan, FCC, IC qualified
- ETSI EN 300 328 v2.2.2 Conducted Test Report Available
- RoHS compliant / Complete Lead Free

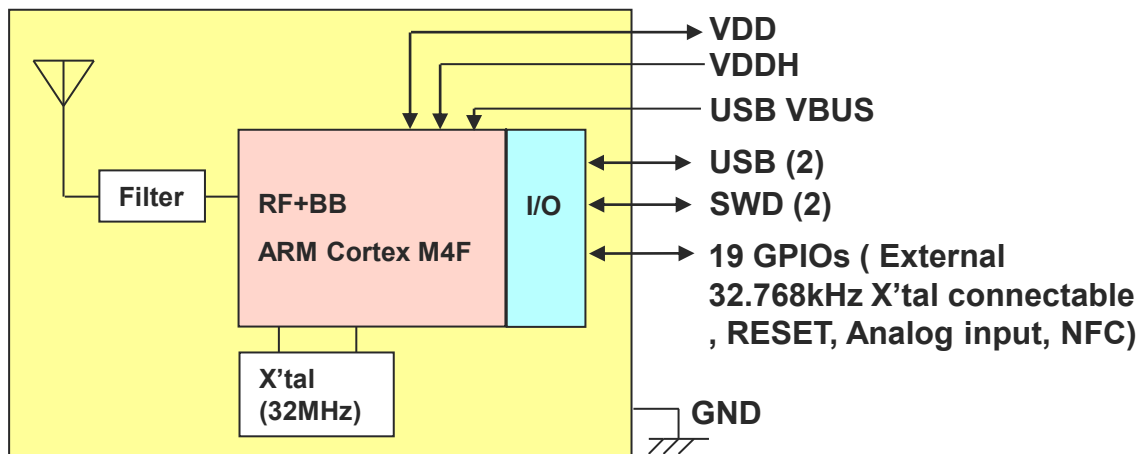
Applications

- Beacon
- Home security
- Asset tracking
- Agricultural monitoring
- Warehouse management
- Smart factory
- Smart dairy farming
- Handy terminal
- Outdoor application

Outline



Block Diagram



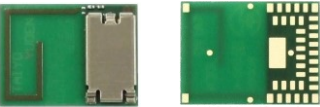
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Bluetooth® low energy Module Sample, Evaluation Board / Kit

EYSKDNZWB (Module)

Module samples

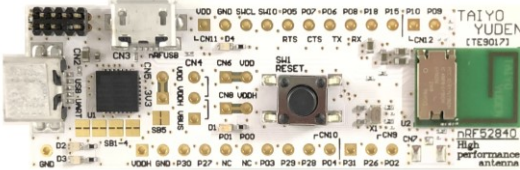


Tape



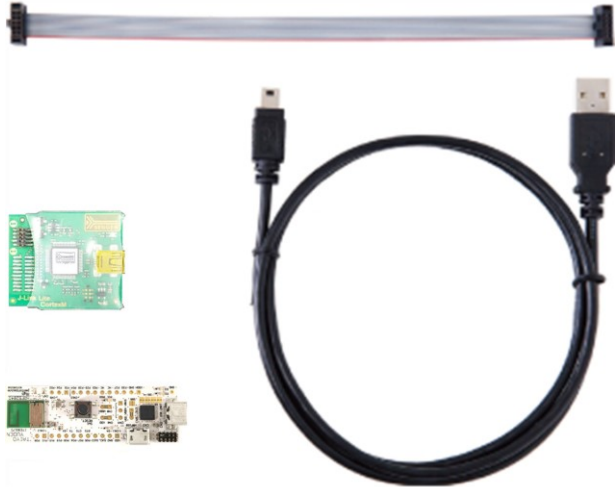
EBSKDNZWB (EV-B)

Evaluation board



EKSKDNZWB (EV-K)

Evaluation kit



SEgger
J-Link LITE
Attached



Bluetooth® 5.0 low energy Module: EYSKJNZWB

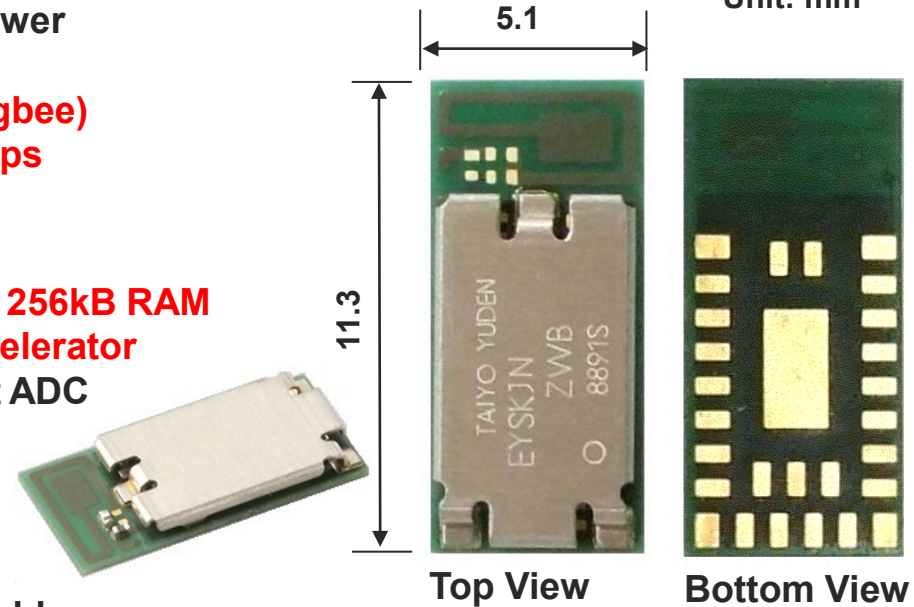
Features

- Frequency: 2402 to 2480 MHz with +8dBm Output power
- Single power supply: 1.7– 3.6V
- 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 Clock
- ARM® Cortex M4F 32bit processor and 1MB Flash & 256kB RAM**
- ARM® TrustZone® Cryptocell 310 cryptographic accelerator**
- Interface: NFC-A, SPI, UART, I2C, I2S, PDM and 12bit 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

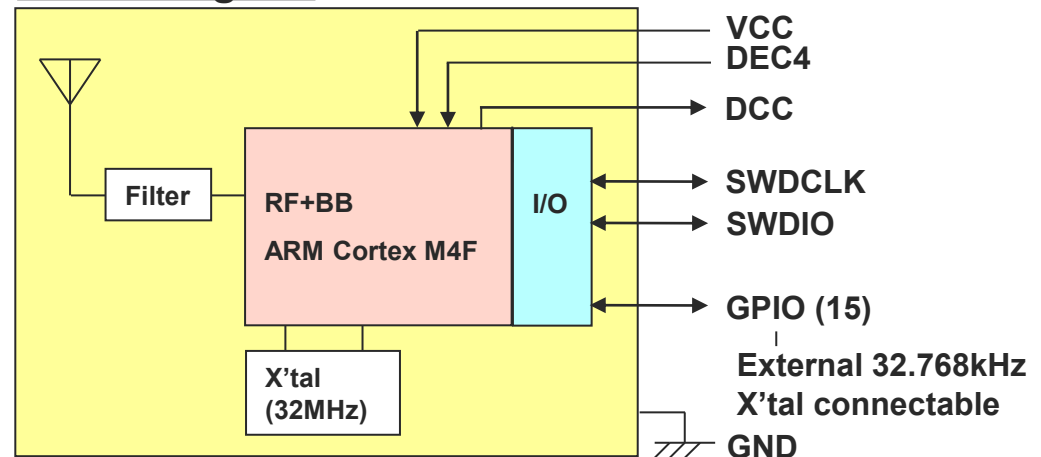
Applications

- 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



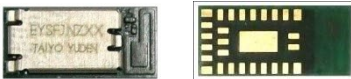
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Bluetooth® low energy Module Sample, Evaluation Board / Kit

EYSKJNZWB (Module)

Module samples



Tape



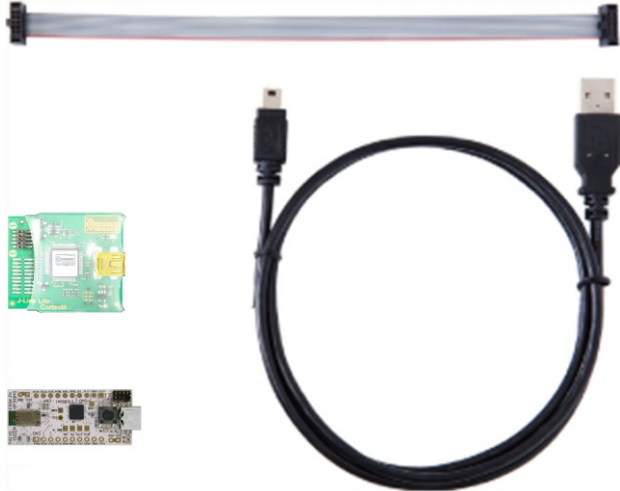
EBSKJNZWB (EV-B)

Evaluation board



EKSKJNZWB (EV-K)

Evaluation kit



SEGGER
J-Link LITE
Attached

Bluetooth® 5.0 low energy Module: EYSKBNZWB

Features

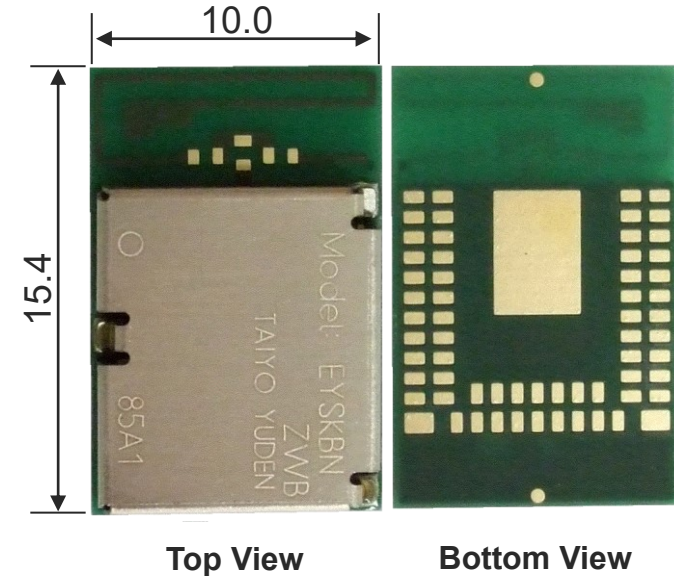
- Frequency: 2402 to 2480 MHz with **+8dBm** Output power
- Single power supply: 1.7 – 5.5V
- Single Mode **Bluetooth 5.0 / 802.15.4** (e.g. Thread, Zigbee)
- **Bluetooth 5 data rate support: 2M / 1M / 500k / 125kbps**
- Chip: **nRF52840** (Nordic)
- Integrated System/Sleep Clock, **2 x LC for DC/DC**
- 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

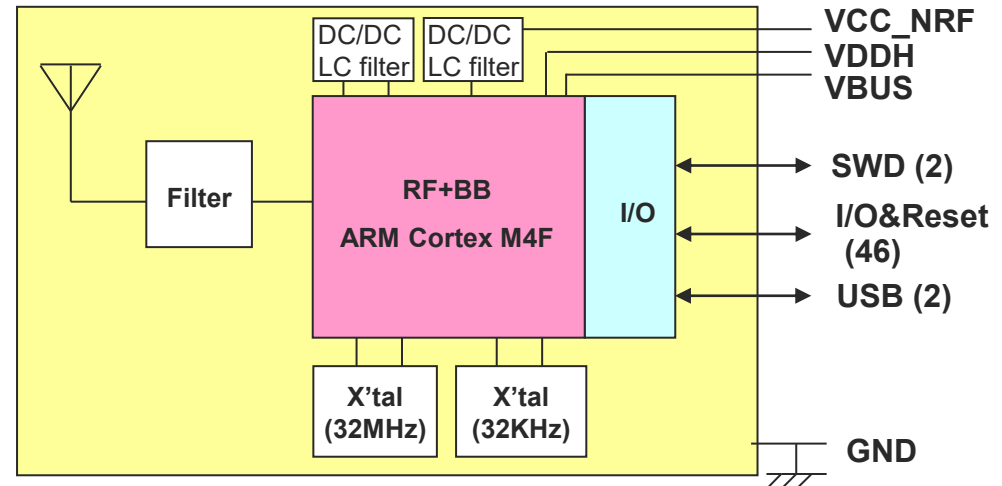
- Advanced wearables
 - Connected watches
 - Advanced personal fitness devices
 - Wearables with wireless payment
 - Connected health
 - Virtual/Augmented reality applications
- Internet of Things
 - Smart home sensors and controllers
 - Industrial IoT sensors and controllers
- Interactive entertainment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

Outline

Unit: mm



Block Diagram



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TAIYO YUDEN

Bluetooth® low energy Module Sample, Evaluation Board / Kit

EYSKBNZWB (Module)

Module samples

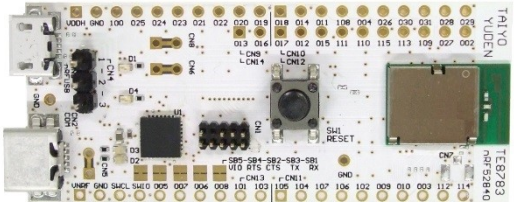


Tape



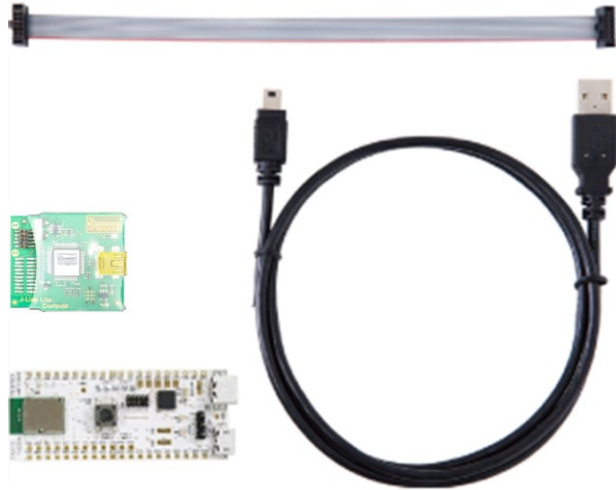
EBSKBNZWB (EV-B)

Evaluation board



EKSKBNZWB (EV-K)

Evaluation kit



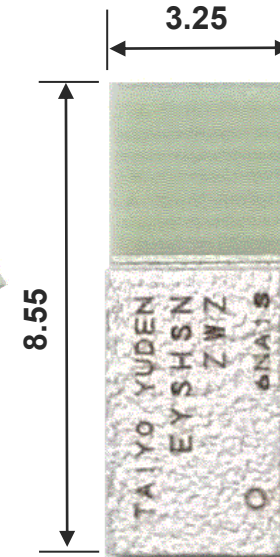
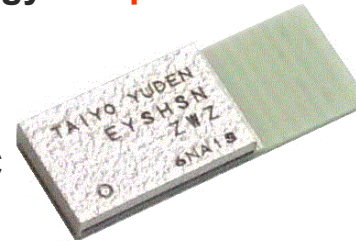
SEGGER
J-Link LITE
Attached

2Mbps Bluetooth® 5.0 low energy Module: EYSHSNZWZ

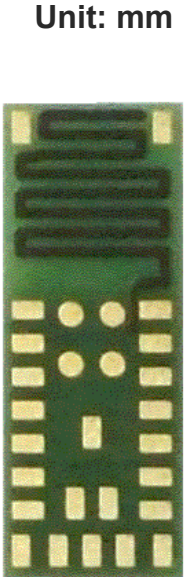
Features

- 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
- Complies with standards required by RED (2014/53/EU)
- ETSI EN 300 328 v2.1.1 Conducted Test Report Available
- RoHS compliant / Complete Lead Free

Outline



Top View



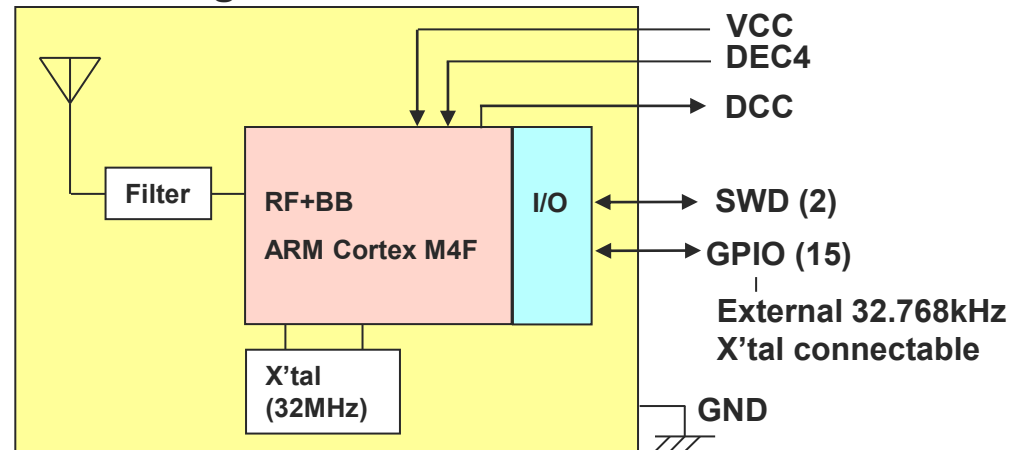
Bottom View

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



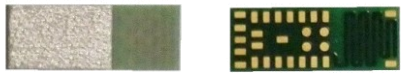
All specifications are subject to change without notice.

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Bluetooth® low energy Module Sample, Evaluation Board / Kit

EYSHSNZWZ (Module)

Module samples

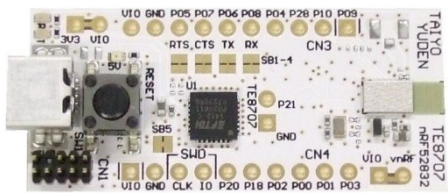


Tape



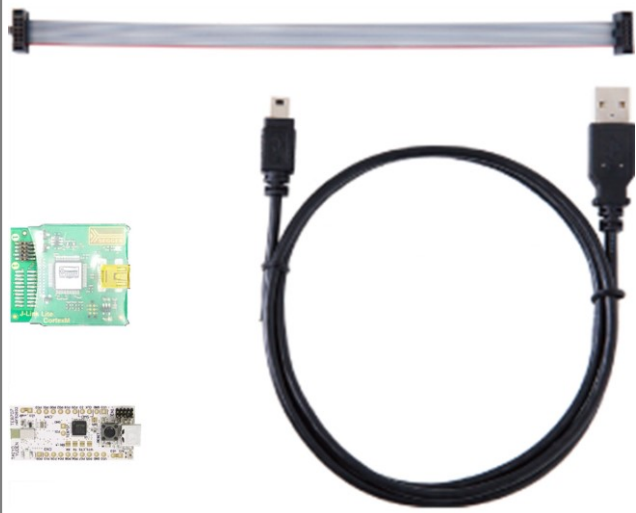
EBSHSNZWZ (EV-B)

Evaluation board



EKSHSNZWZ (EV-K)

Evaluation kit



SEGGER
J-Link LITE
Attached



2Mbps Bluetooth® 5.0 low energy Module: EYSHCNZWZ

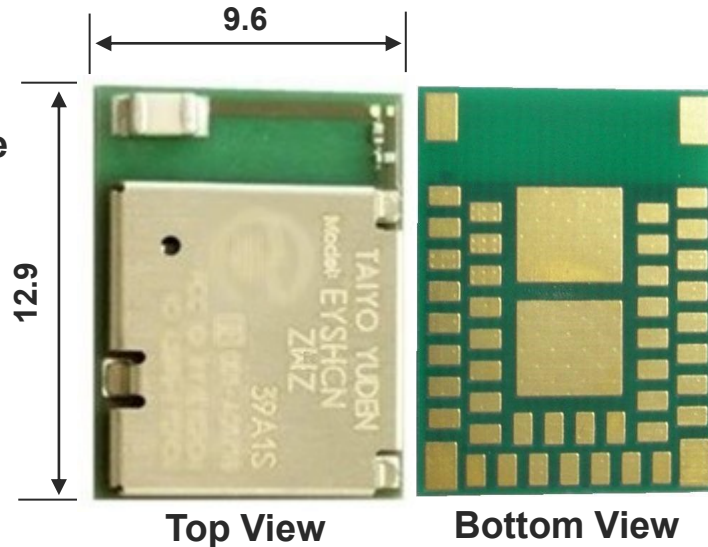
Features

- 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
- Complies with standards required by RED (2014/53/EU)
- ETSI EN 300 328 v2.1.1 Conducted Test Report Available
- RoHS compliant / Complete Lead Free

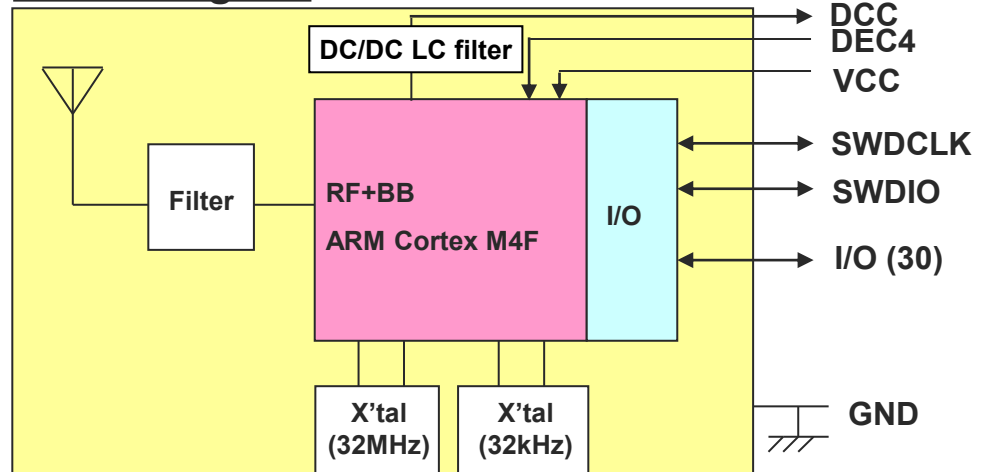
Applications

- 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



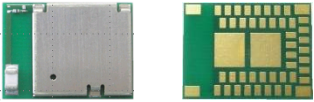
All specifications are subject to change without notice.

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Bluetooth® low energy Module Sample, Evaluation Board / Kit

EYSHCNZWZ (Module)

Module samples

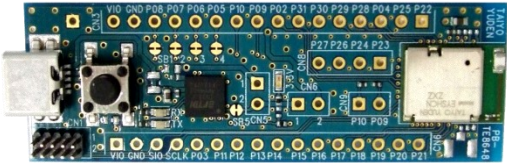


Tape



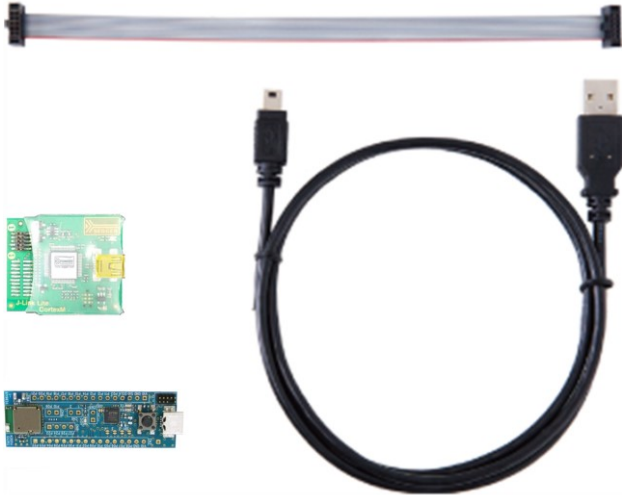
EBSHCNZWZ (EV-B)

Evaluation board



EKSHCNZWZ (EV-K)

Evaluation kit



SEgger
J-Link LITE
Attached



2Mbps Bluetooth® 5.0 low energy Module: EYSHJNZWZ

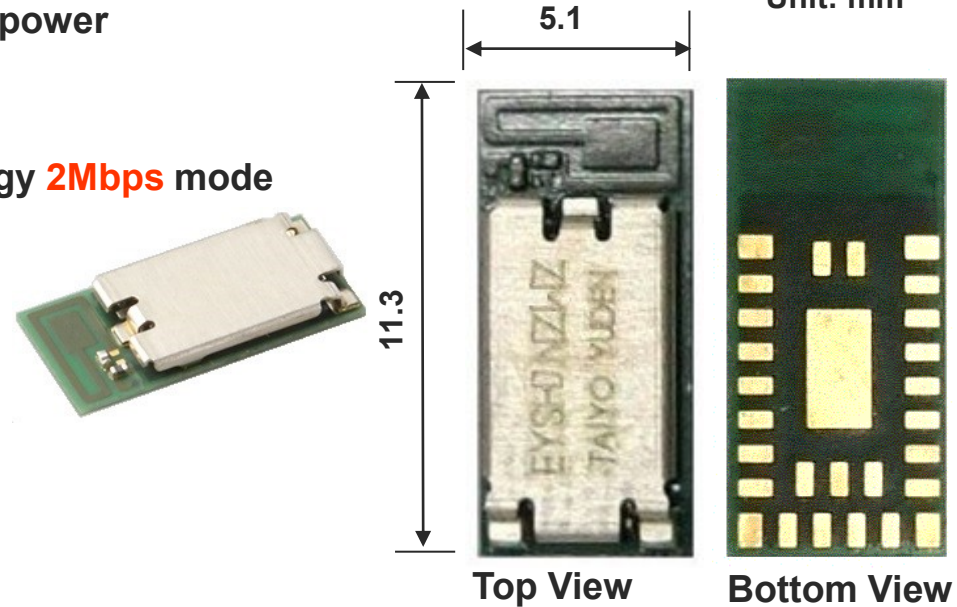
Features

- 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
- Complies with standards required by RED (2014/53/EU)
- ETSI EN 300 328 v2.1.1 Conducted Test Report Available
- RoHS compliant / Complete Lead Free

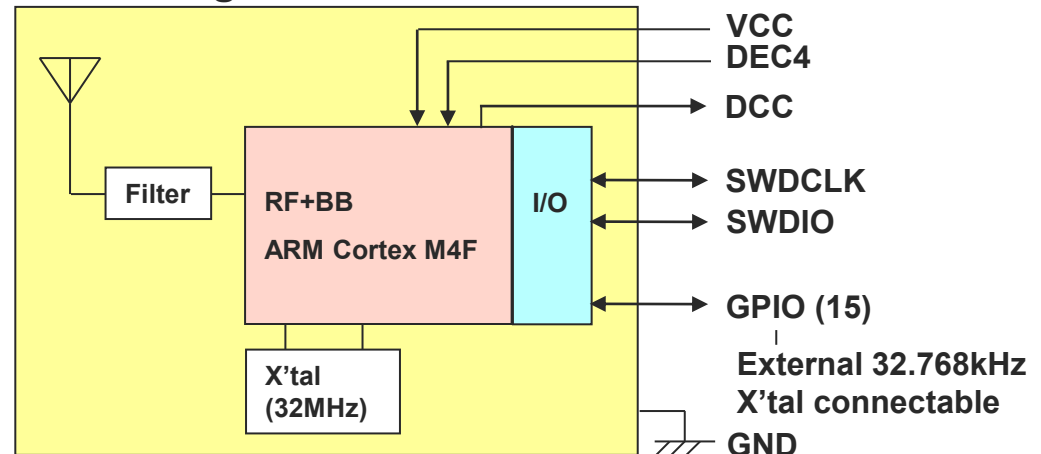
Applications

- 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



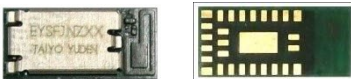
All specifications are subject to change without notice.

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Bluetooth® low energy Module Sample, Evaluation Board / Kit

EYSHJNZWZ (Module)

Module samples

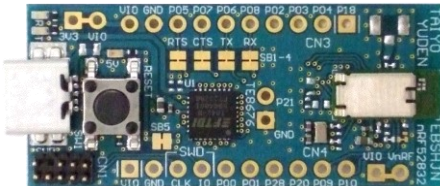


Tape



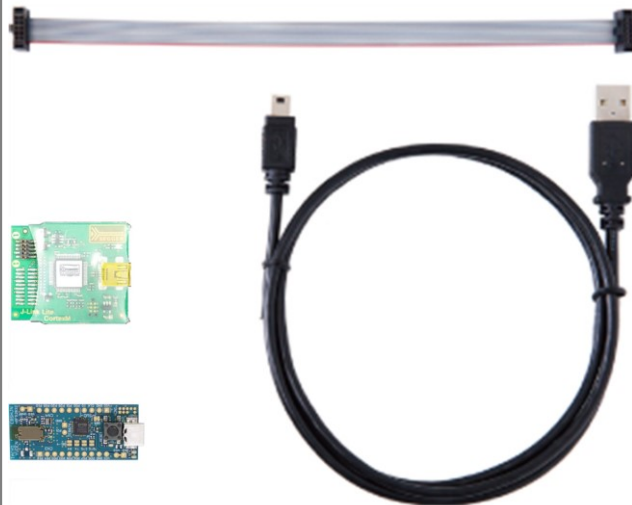
EBSHJNZWZ (EV-B)

Evaluation board



EKSHJNZWZ (EV-K)

Evaluation kit



SEGGER
J-Link LITE
Attached



Bluetooth® 5.2 low energy Module: EYSNSNZWW

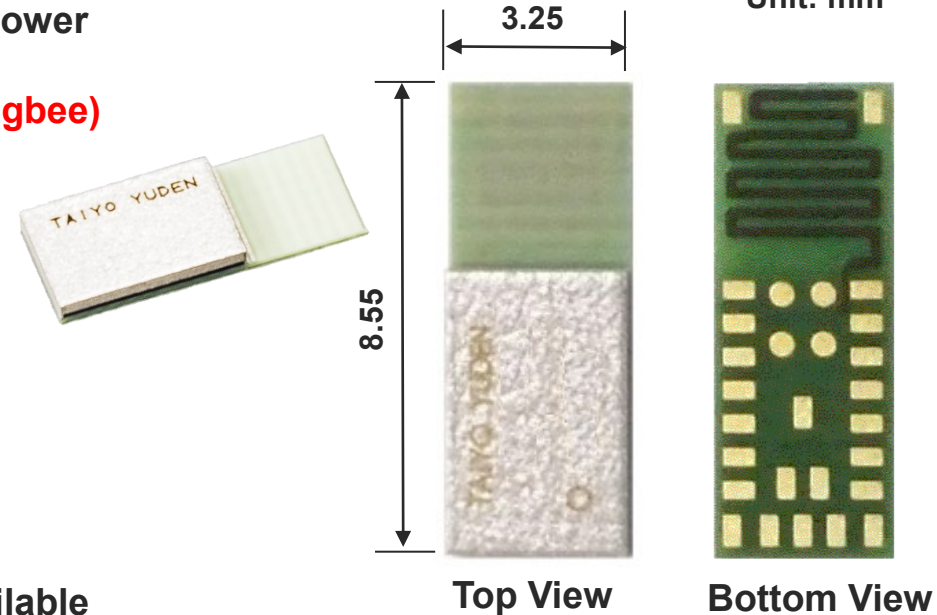
Features

- Frequency: 2402 to 2480 MHz with +4dBm Output power
- Single power supply: 1.7– 3.6V
- Single Mode **Bluetooth 5.2 / 802.15.4 (e.g Thread, Zigbee)**
- Bluetooth 5.2 2Mbps / Long range / AoA / AoD**
- Chip: **nRF52811** (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 1.00**mm MAX
- Operating Temperature range: -40 to 85 deg-C
- Bluetooth and Japan, FCC, IC qualified
- ETSI EN 300 328 v2.2.2 Conducted Test Report Available
- RoHS compliant / Complete Lead Free

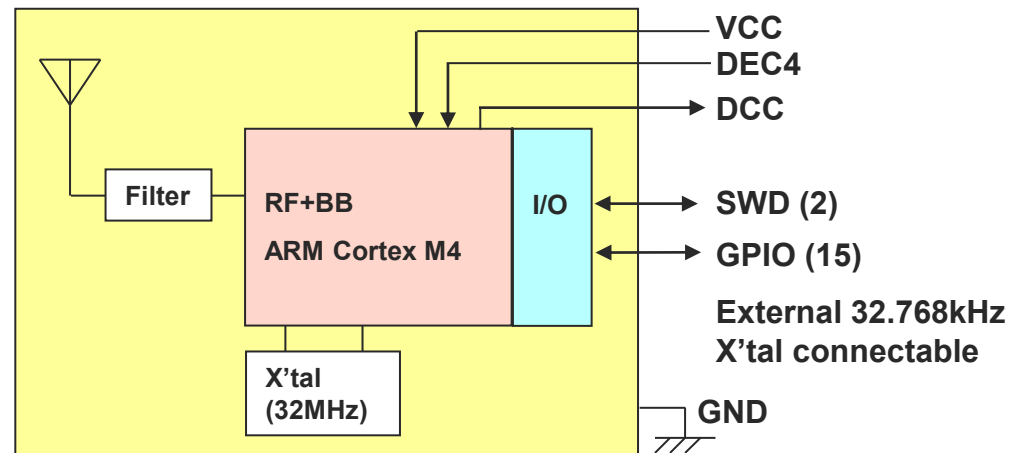
Applications

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

Outline



Block Diagram



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Bluetooth® low energy Module Sample, Evaluation Board / Kit

EYSNSNZWW (Module)

Module samples

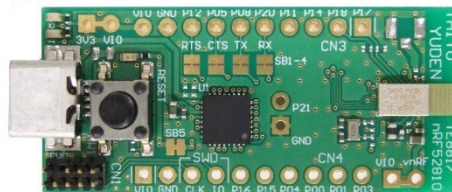


Tape



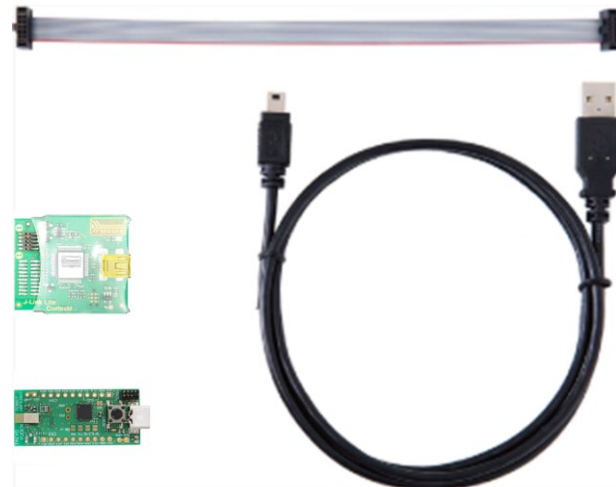
EBSNSNZWW (EV-B)

Evaluation board



EKSNSNZWW (EV-K)

Evaluation kit



SEGGER
J-Link LITE
Attached

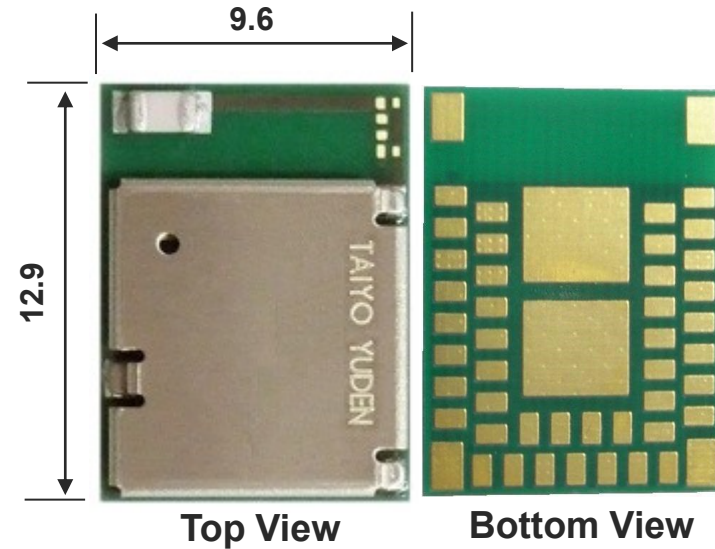


Bluetooth® 5.2 low energy Module: EYSNCNZWW

Features

- Frequency: 2402 to 2480 MHz with +4dBm Output power
- Single power supply: 1.7 – 3.6V
- Single Mode **Bluetooth 5.2 / 802.15.4 (e.g Thread, Zigbee)**
- Bluetooth 5.2 2Mbps / Long range / AoA / AoD**
- Chip: **nRF52811** (Nordic)
- 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 v2.2.2 Conducted Test Report Available
- RoHS compliant / Complete Lead Free

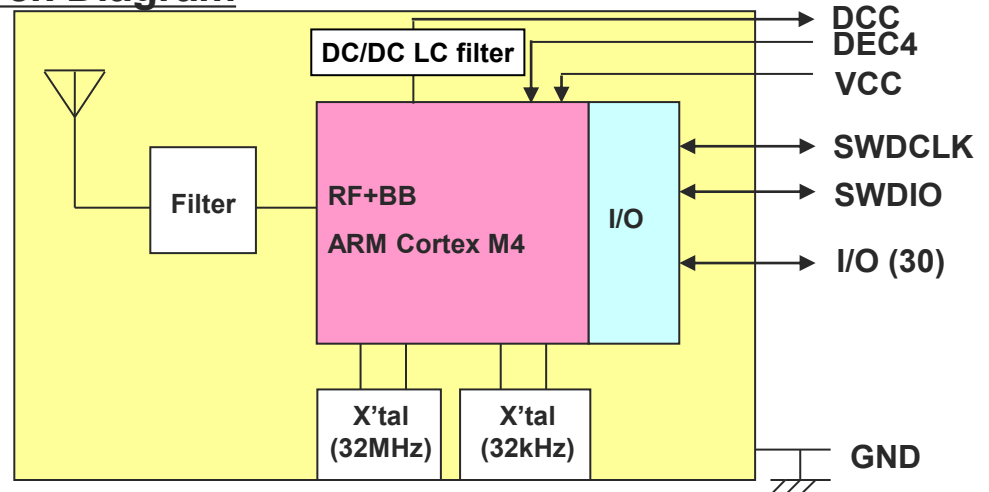
Outline



Applications

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

Block Diagram



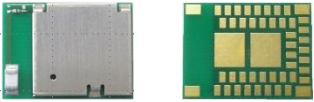
All specifications are subject to change without notice.

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Bluetooth® low energy Module Sample, Evaluation Board / Kit

EYSNCNZWW (Module)

Module samples



Tape



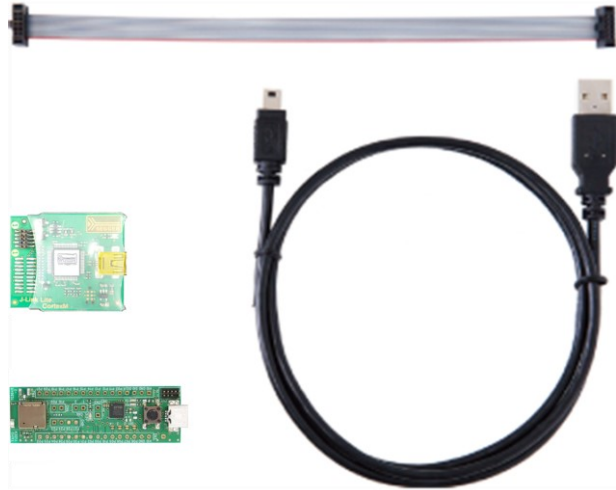
EBSNCNZWW (EV-B)

Evaluation board



EKSNCNZWW (EV-K)

Evaluation kit



SEGGER
J-Link LITE
Attached

2Mbps Bluetooth® 5.0 low energy Module: EYLSLNZWW

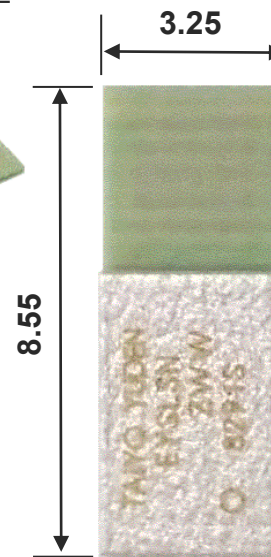
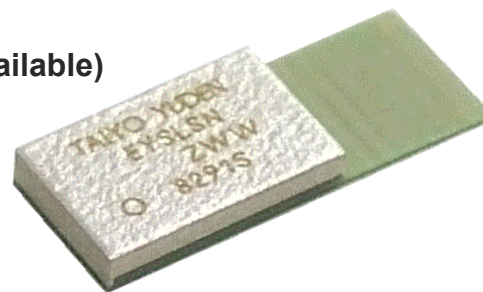
Features

- 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

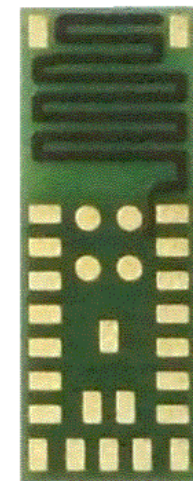
- Smart wristband
- Smart glasses
- Remote control ring
- Smart pen
- Heart rate monitor
- pressure monitor
- Blood glucose meter
- Thermometer
- Mobile accessories

Outline



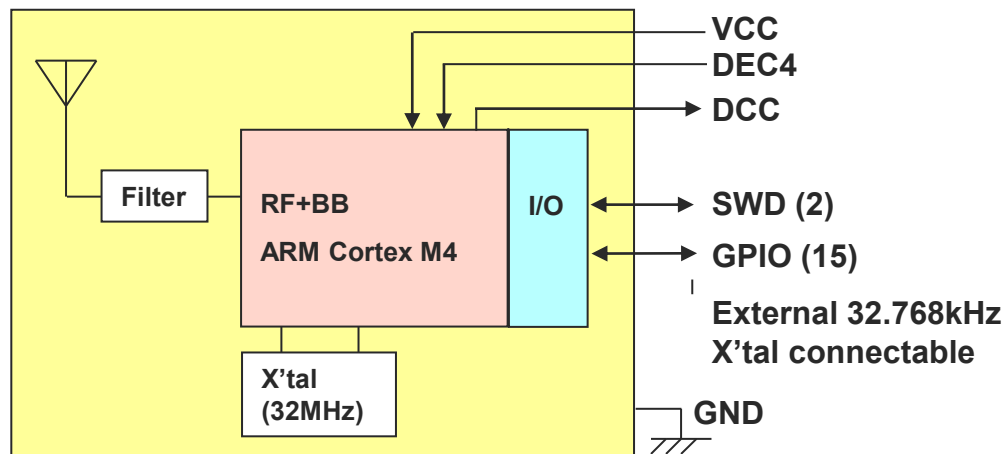
Top View

Unit: mm



Bottom View

Block Diagram



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Bluetooth® low energy Module Sample, Evaluation Board / Kit

EYSLSNZWW (Module)

Module samples

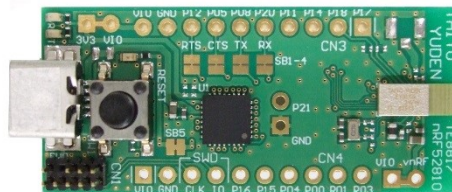


Tape



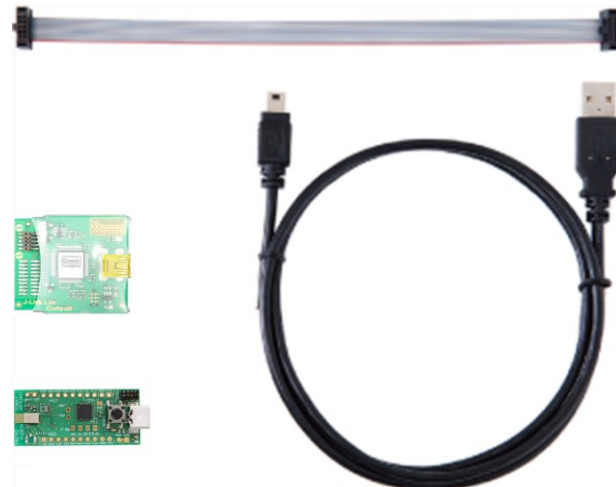
EBSLSNZWW (EV-B)

Evaluation board



EKSLSNZWW (EV-K)

Evaluation kit



SEGGER
J-Link LITE
Attached



2Mbps Bluetooth® 5.0 low energy Module: EYSLCNZWW

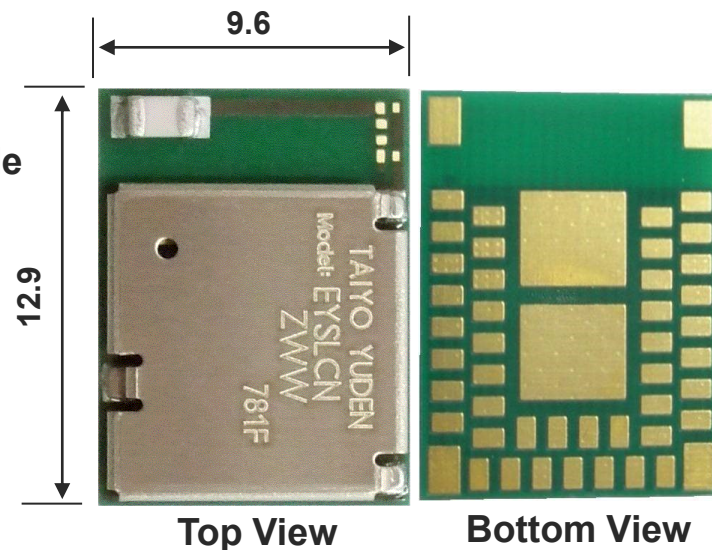
Features

- 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

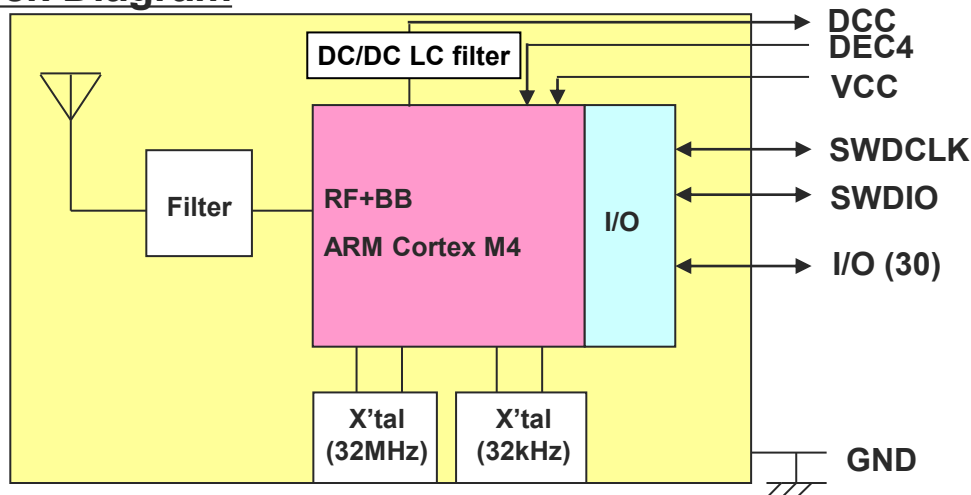
Applications

- 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



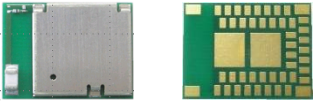
All specifications are subject to change without notice.

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Bluetooth® low energy Module Sample, Evaluation Board / Kit

EYSLCNZWW (Module)

Module samples



Tape



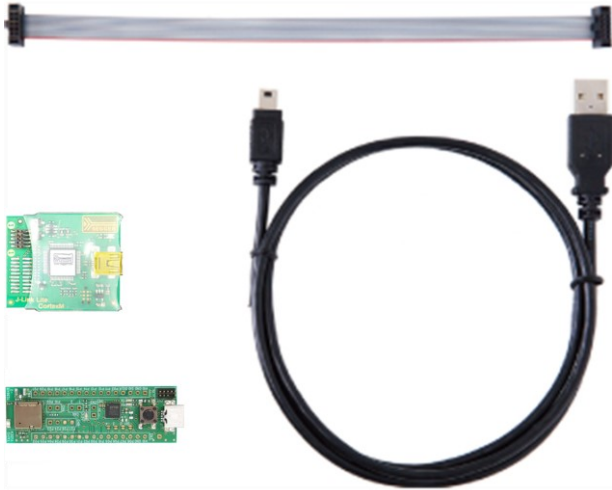
EBSLCNZWW (EV-B)

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 (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

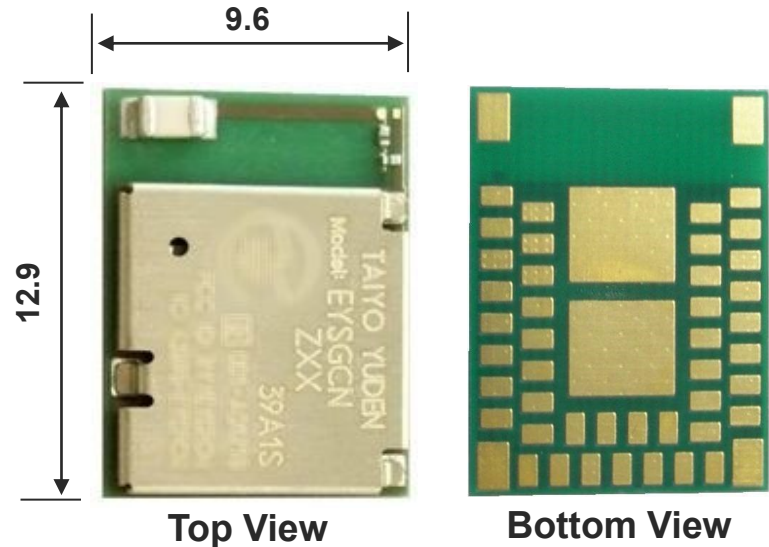
- Cycle computer
- Heart rate monitor
- Blood pressure monitor
- Blood glucose meter
- Weighing machine
- Thermometer
- Mobile accessories
- Sports and fitness sensors
- Remote controllers / Toys

All specifications are subject to change without notice.

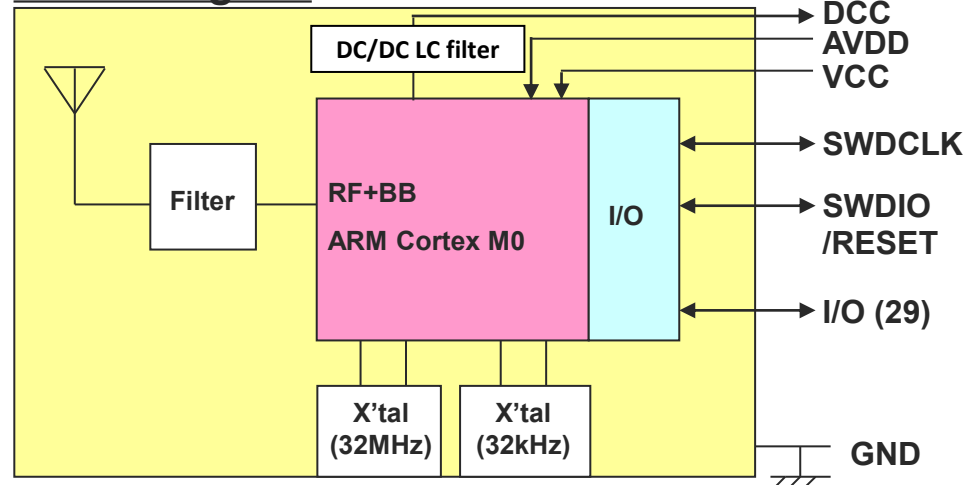
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Outline

Unit: mm



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 (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

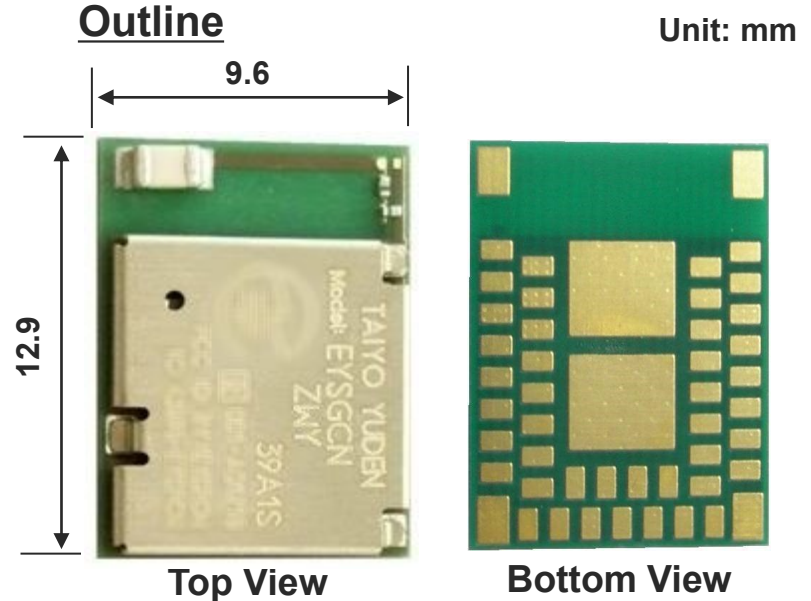
Applications

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

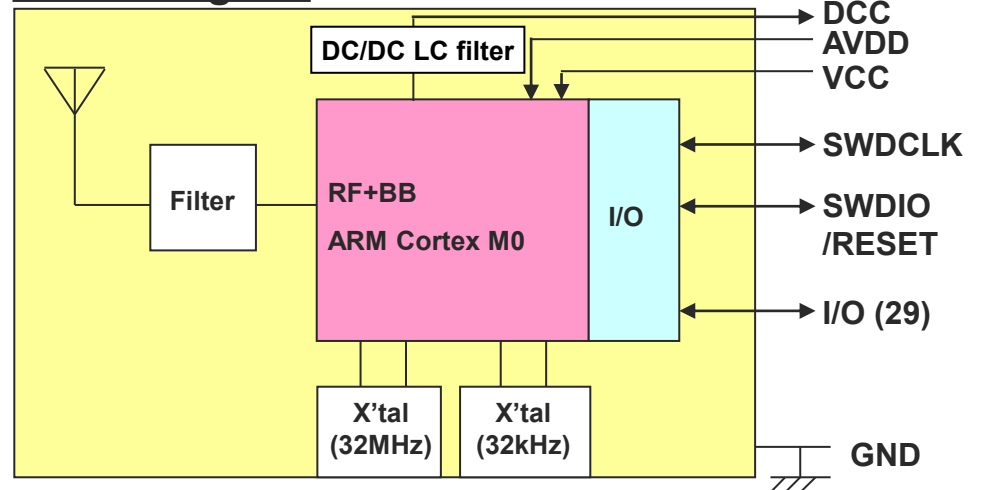
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TAIYO YUDEN



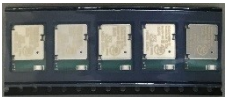
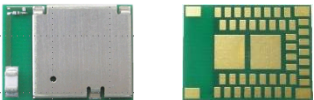
Block Diagram



Bluetooth® low energy Module Sample, Evaluation Board / Kit

EYSGCNZXX, EYSGCNZWY (Module)

Module samples



Tape



EBSGCNZWY (EV-B)

Evaluation board



EKSGCNZWY (EV-K)

Evaluation kit



SEGGER
J-Link LITE
Attached

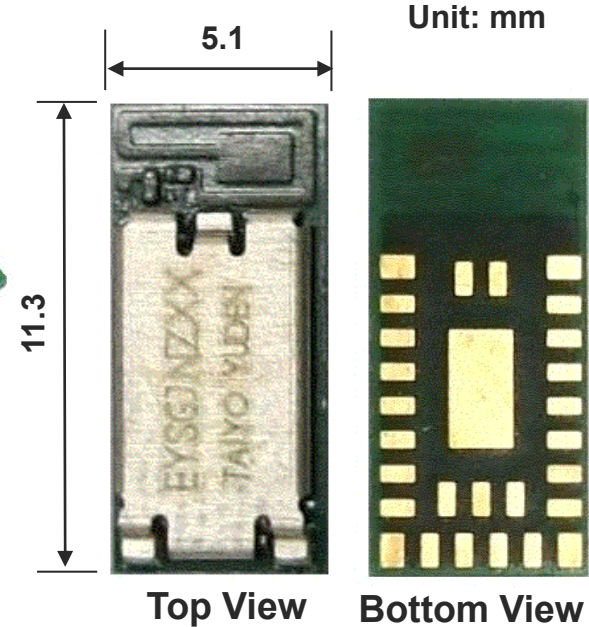
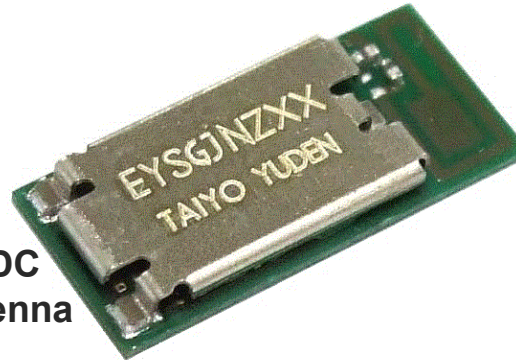


Bluetooth® low energy Module **EYSGJNZXX**

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 (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

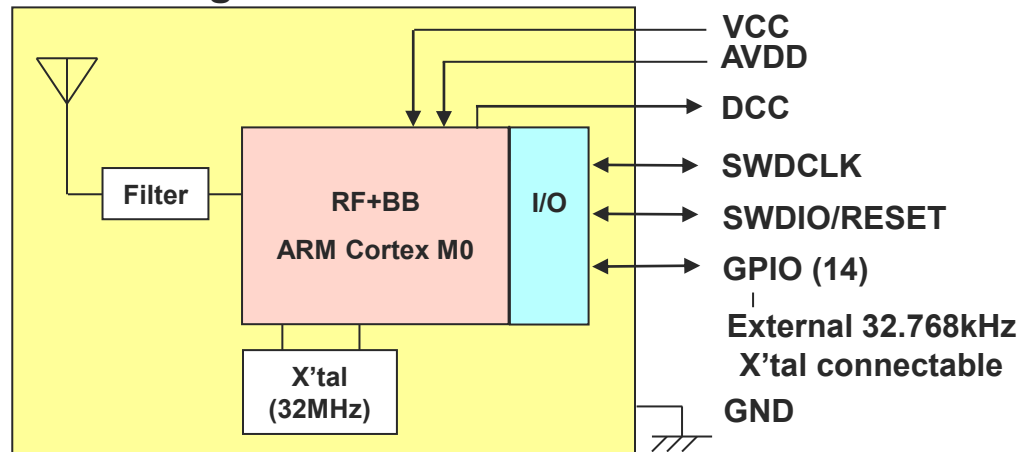
Outline



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.

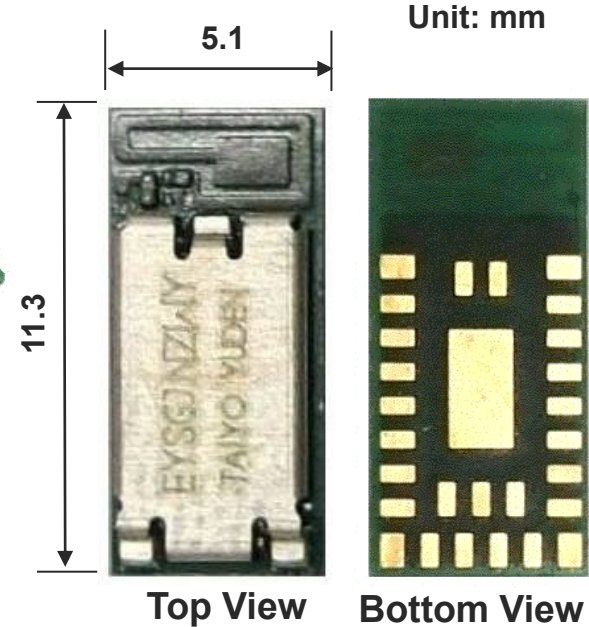
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Bluetooth® low energy Module **EYSGJNZWY**

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 (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

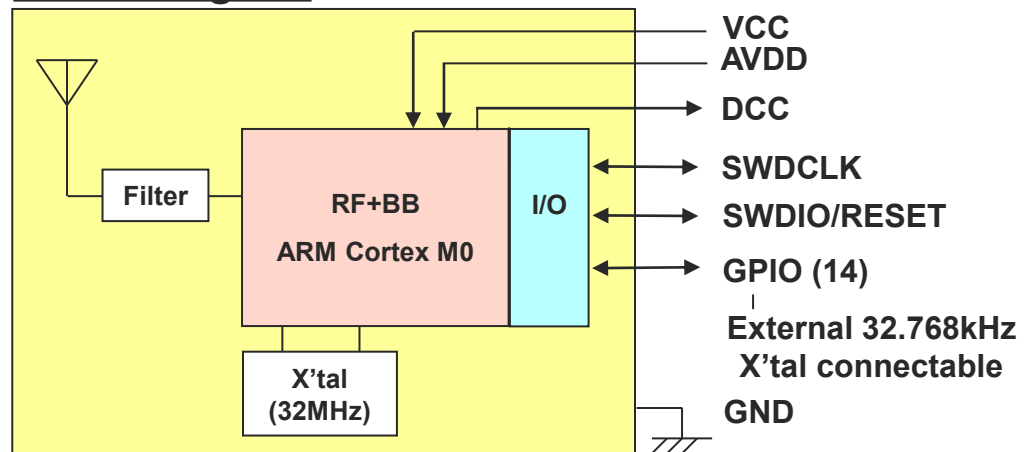
Outline



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



All specifications are subject to change without notice.

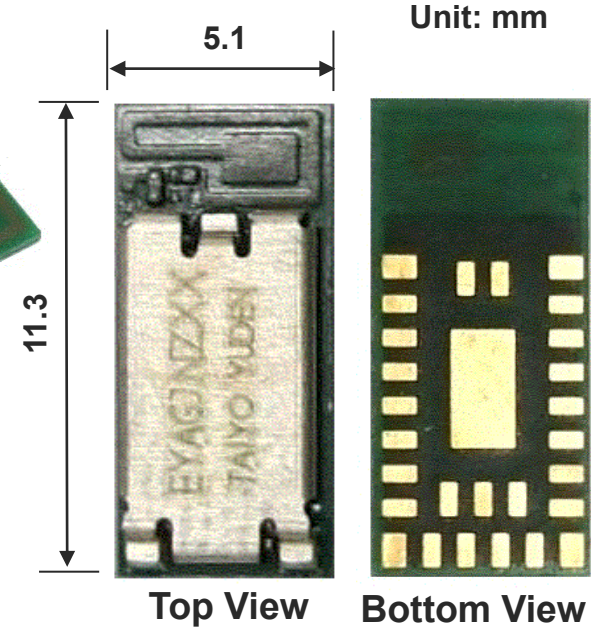
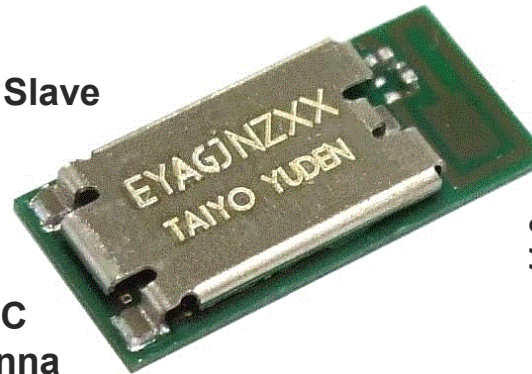
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ANT + Bluetooth® low energy Module **EYAGJNZXX**

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** (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

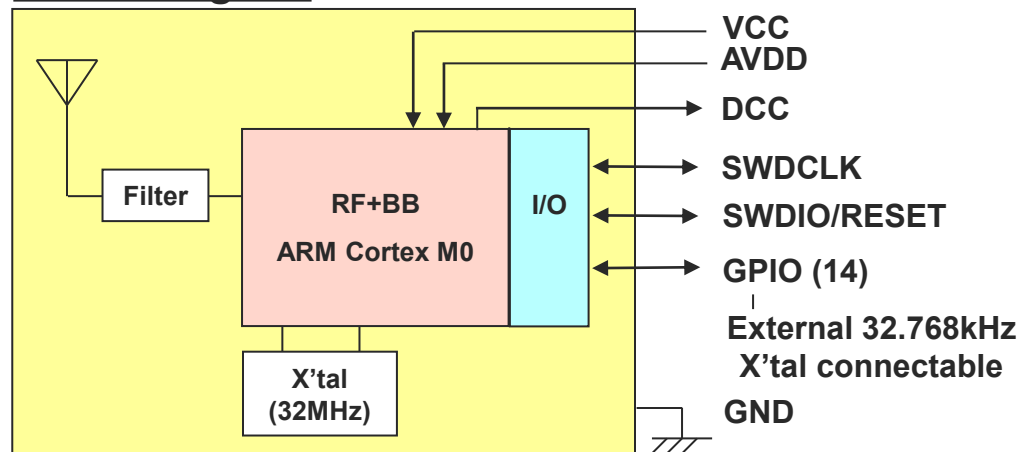
Outline



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



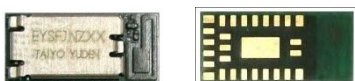
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Bluetooth® low energy Module Sample, Evaluation Board / Kit

EYSGJNZXX, EYSGJNZWY, EYAGJNZXX (Module)

Module samples

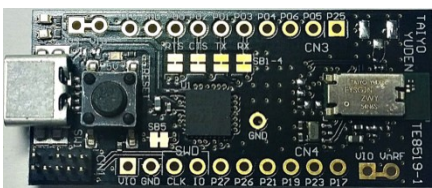


Tape



EBSGJNZWY, EBAGJNZXX (EV-B)

Evaluation board



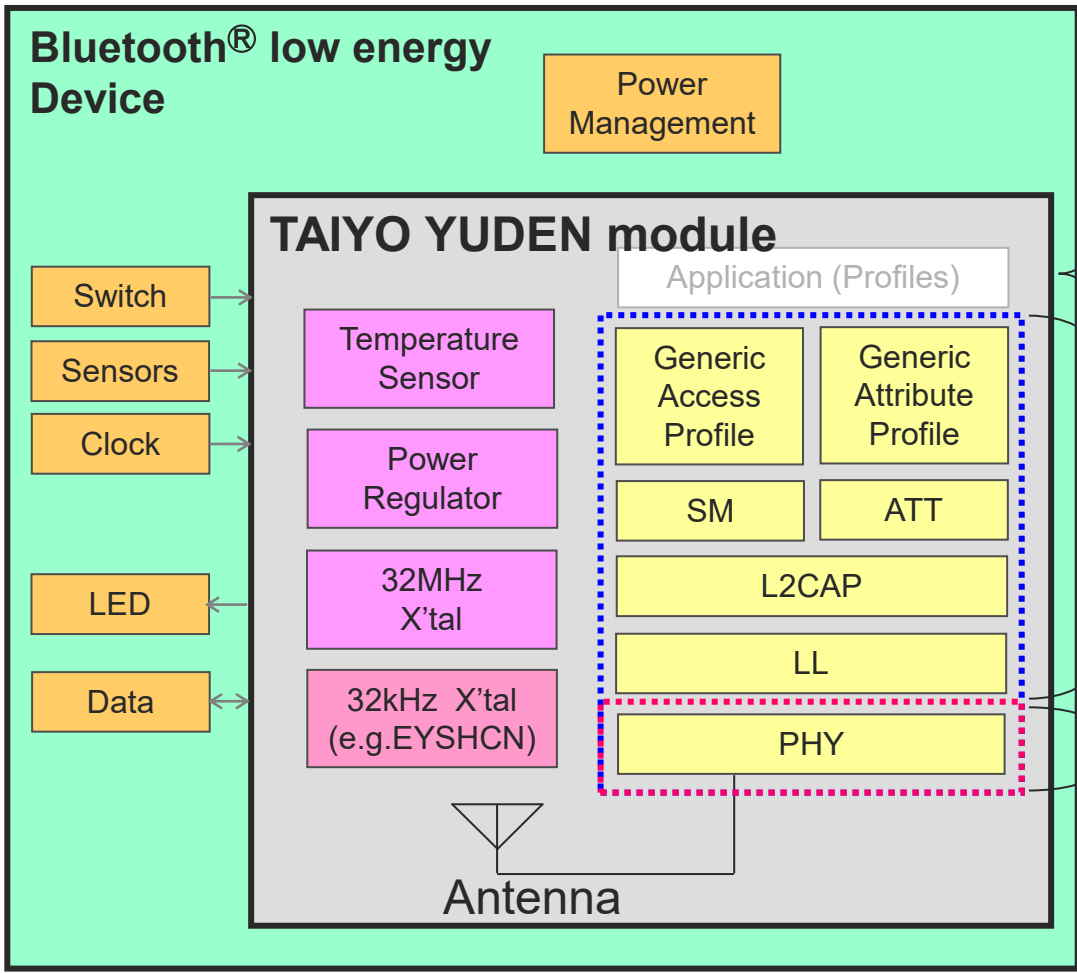
EKSGJNZWY, EKAGJNZXX (EV-K)

Evaluation kit



SEGGER J-Link LITE Attached

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

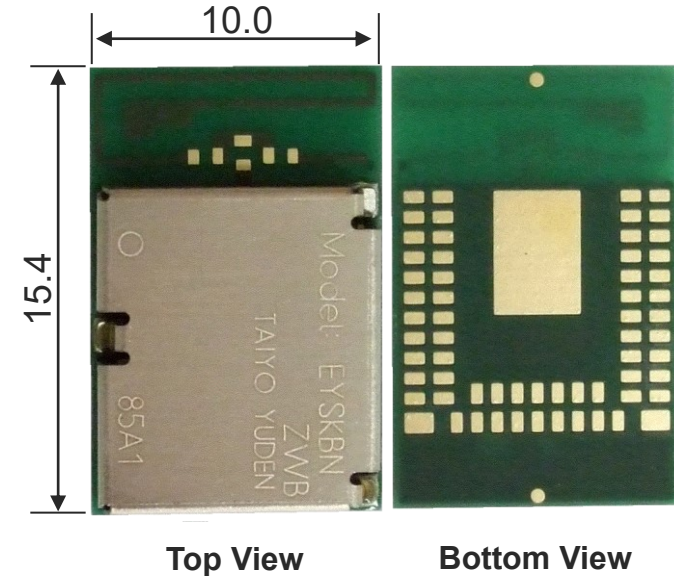
- Frequency: 2402 to 2480 MHz with **+8dBm** Output power
- Single power supply: 1.7 – 5.5V
- Single Mode **Bluetooth 5.0 (Master / Slave)**
- Bluetooth 5 data rate support: 2M / 1M / 125kbps**
- Chip: **nRF52840** (Nordic)
- Integrated System/Sleep Clock, 2 x LC for DC/DC
- Integrated high performance 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

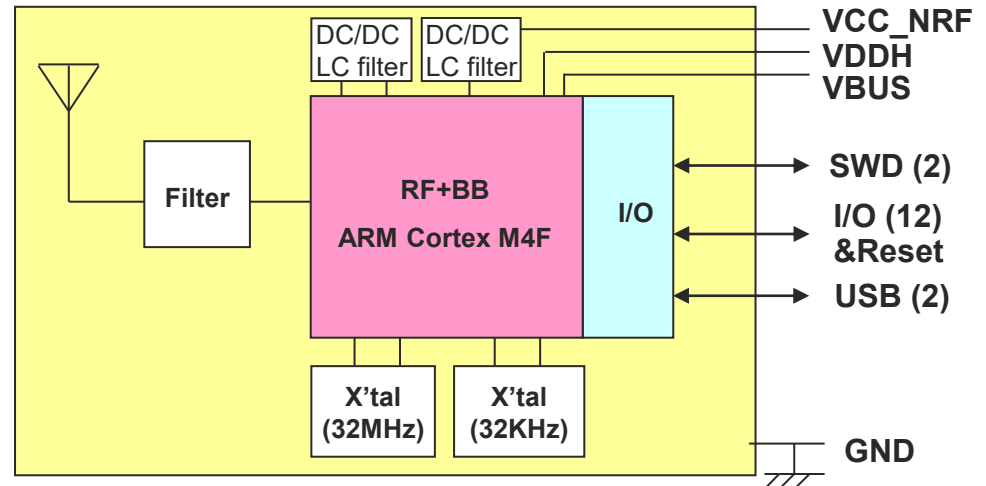
- Advanced wearables
 - Connected watches
 - Advanced personal fitness devices
 - Wearables with wireless payment
 - Connected health
 - Virtual/Augmented reality applications
- Internet of Things
 - Smart home sensors and controllers
 - Industrial IoT sensors and controllers
- Interactive entertainment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

Outline

Unit: mm



Block Diagram



All specifications are subject to change without notice.

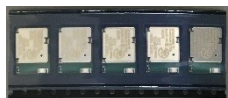
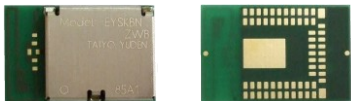
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TAIYO YUDEN

Bluetooth® low energy Module Sample, Evaluation Board / Kit

EYSKBNUWB-WX (Module)

Module samples

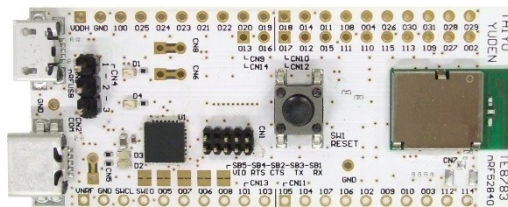


Tape



EBSKBNUWB-WX (EV-B)

Evaluation board

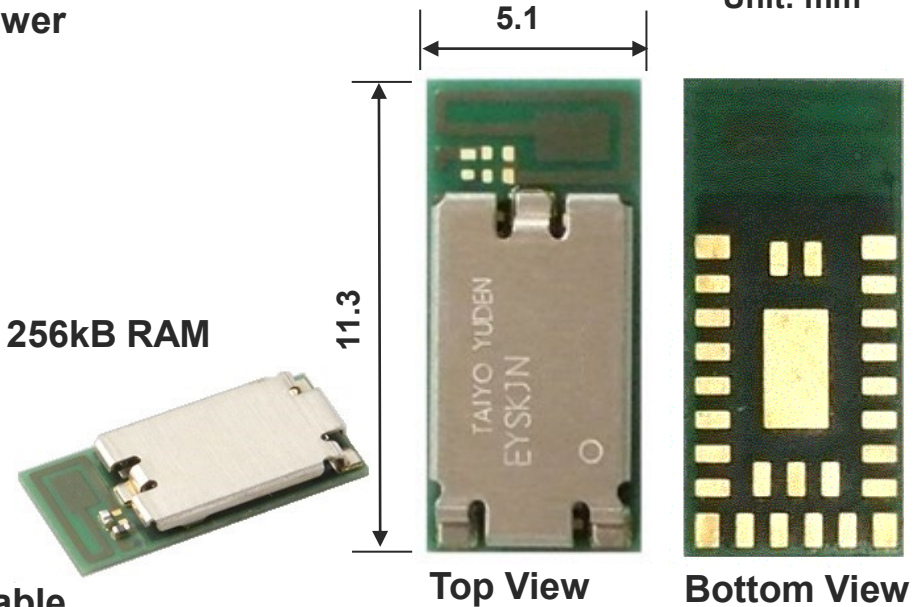


Bluetooth® 5.0 low energy Module: EYSKJNAWB-WX

Features

- Frequency: 2402 to 2480 MHz with **+8dBm** Output power
- Single power supply: 1.7 – 3.6V
- Single Mode **Bluetooth 5.0 (Master / Slave)**
- Bluetooth 5 data rate support: 2M / 1M / 125kbps**
- Chip: **nRF52840** (Nordic)
- Integrated System Clock
- Integrated high performance PCB antenna
- ARM® Cortex M4F 32bit processor and 1MB Flash & 256kB RAM
- Application Embedded by TAIYO YUDEN**
- Interface: UART
- Outline: **5.1 x 11.3 x 1.3** 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

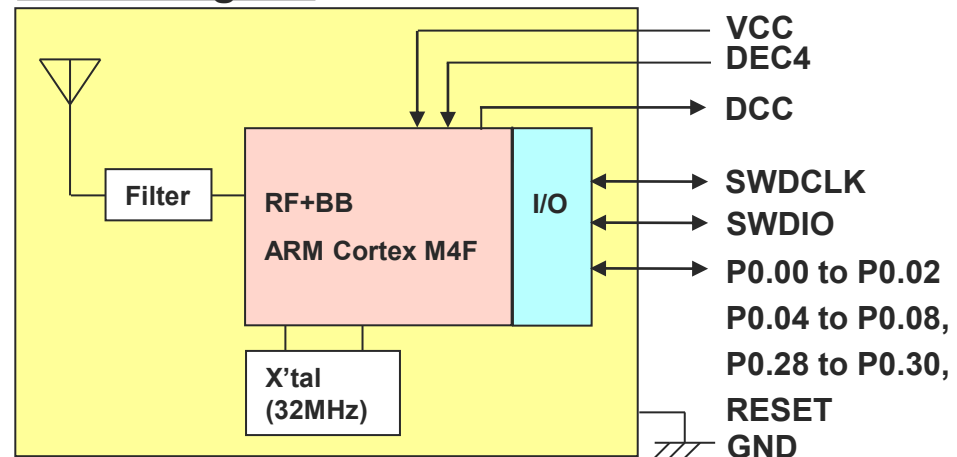
Outline



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

Block Diagram



All specifications are subject to change without notice.

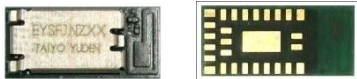
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TAIYO YUDEN

Bluetooth® low energy Module Sample, Evaluation Board / Kit

EYSKJNAWB-WX (Module)

Module samples



Tape



EBSKJNAWB-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

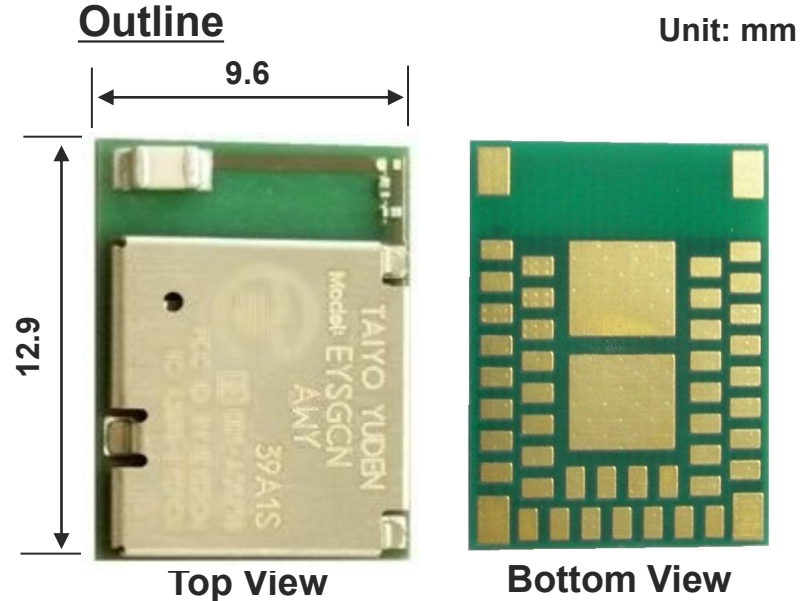
Applications

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

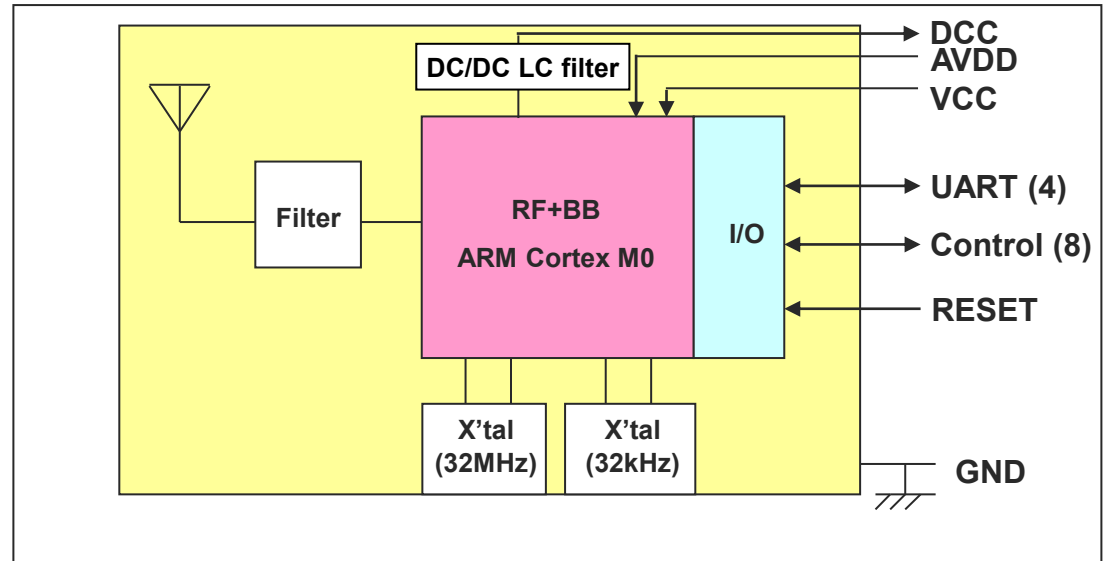
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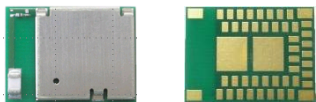
Block Diagram



Bluetooth® low energy Module Sample, Evaluation Board / Kit

EYSGCNAWY-VX (Module)

Module samples



Tape



EBSGCNAWY-VX (EV-B)

Evaluation board



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

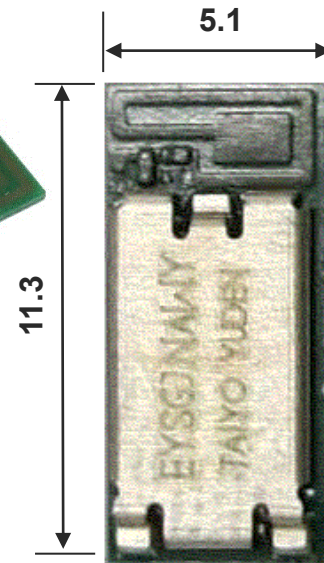
Features

- 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

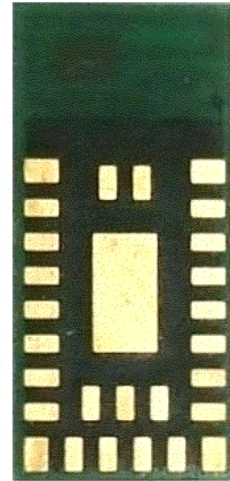
Applications

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

Outline



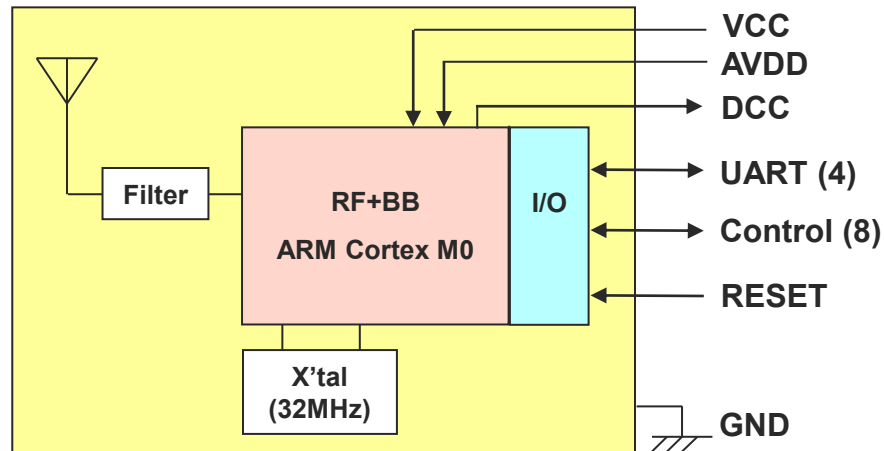
Unit: mm



Top View

Bottom View

Block Diagram

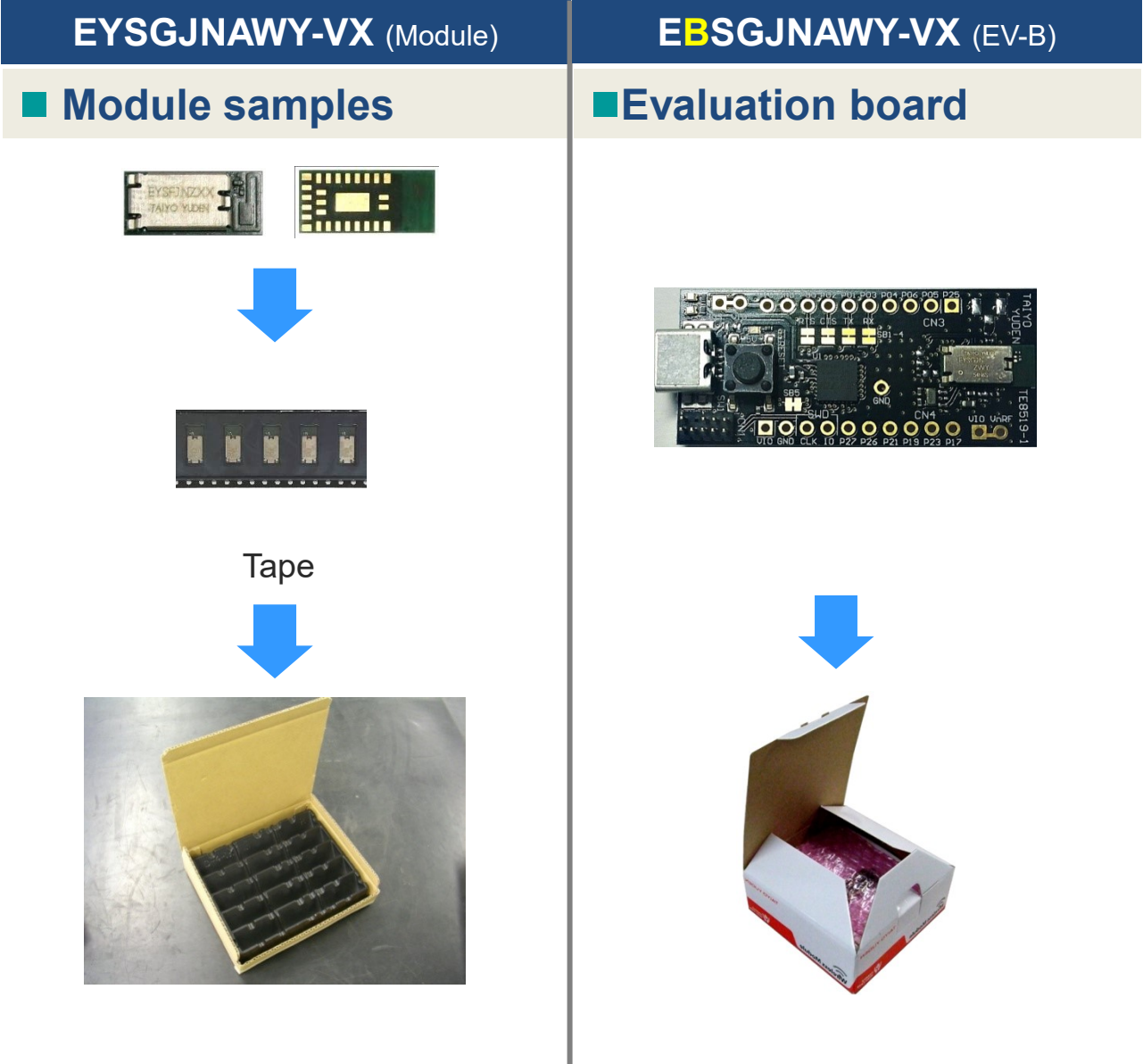


All specifications are subject to change without notice.

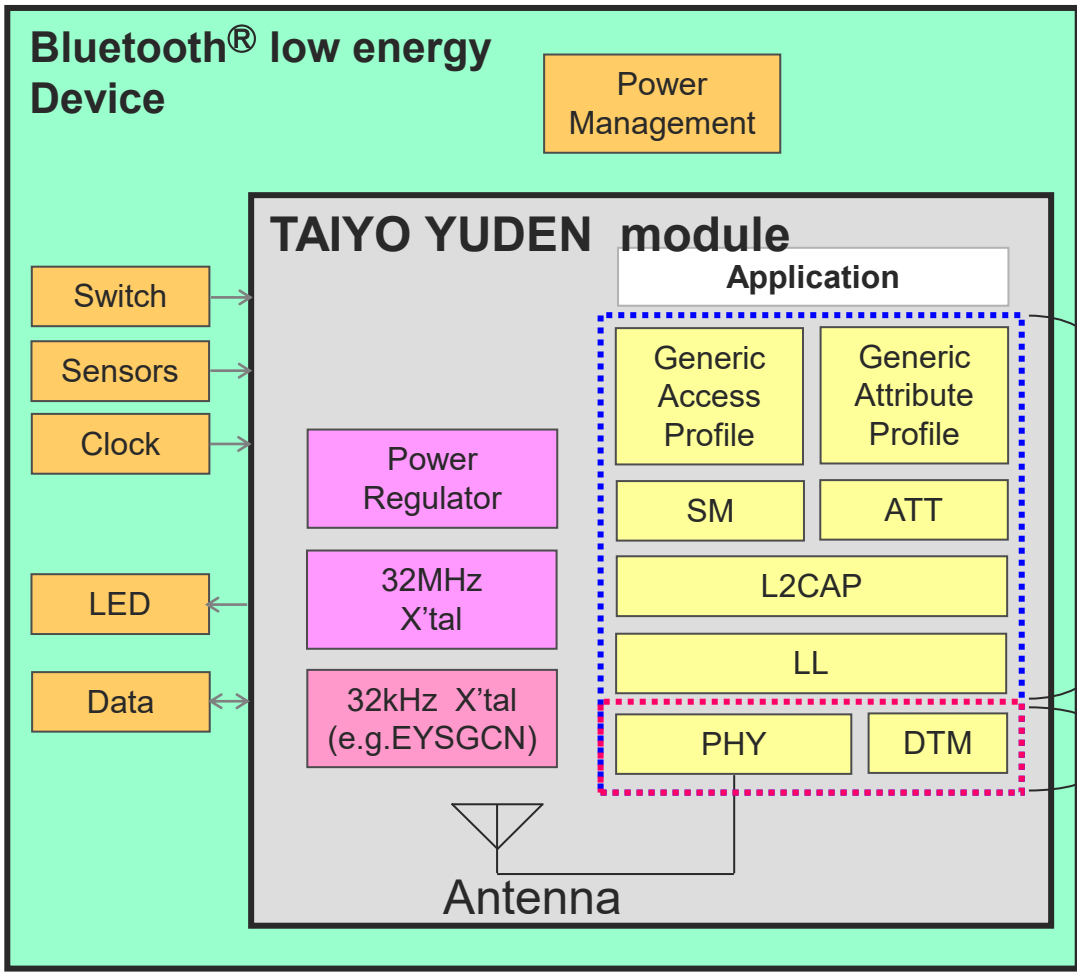
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Bluetooth® low energy Module Sample, Evaluation Board / Kit



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(mm) (LxWxH)	Bluetooth Version	ANT™ Support	I/F	RAM (kB)	Certifi- cation	Tempera- ture
nRF52 Basic (Software Support : Nordic)	EYSKDNZWB	9.6x12.9x1.3	V5.0	✓	USB※2 UART SPI I2C I2S※3 PDM	256	Japan FCC IC (CE)※1	-40~+85 deg-C
	EYSKBNZWB	10.0x15.4x2.0	V5.0			256		
	EYSHSNZWZ	3.25x8.55x0.85	V5.0			64		
	EYSNSNZWW	3.25x8.55x1.00	V5.2			24		
	EYSLSNZWW		V5.0			24		
	EYSHCNZWZ	9.6x12.9x2.0	V5.0			64		
	EYSNCNZWW		V5.2			24		
	EYSLCNZWW		V5.0			24		
	EYSKJNZWB	5.1x11.3x1.3	V5.0			256		
	EYSHJNZWZ		V5.0			64		
Application Embedded – Module (Software Support : TAIYO YUDEN)	EYSKBNUWB- WX	10.0x15.4x2.0	V5.0		UART, SPI,USB	N/A		
	EYSKJNAWB- WX	5.1x11.3x1.3			UART			
	EYSGCNAWY- VX	9.6x12.9x2.0	V4.2		UART			
	EYSGJNAWY- VX	5.1x11.3x1.3						

※1 ETSI EN 300 328 conducted test report available ※2 Supported by EYSKBNZWB only

※3 Supported by EYSKBNZWB and EYSHxNZWZ

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