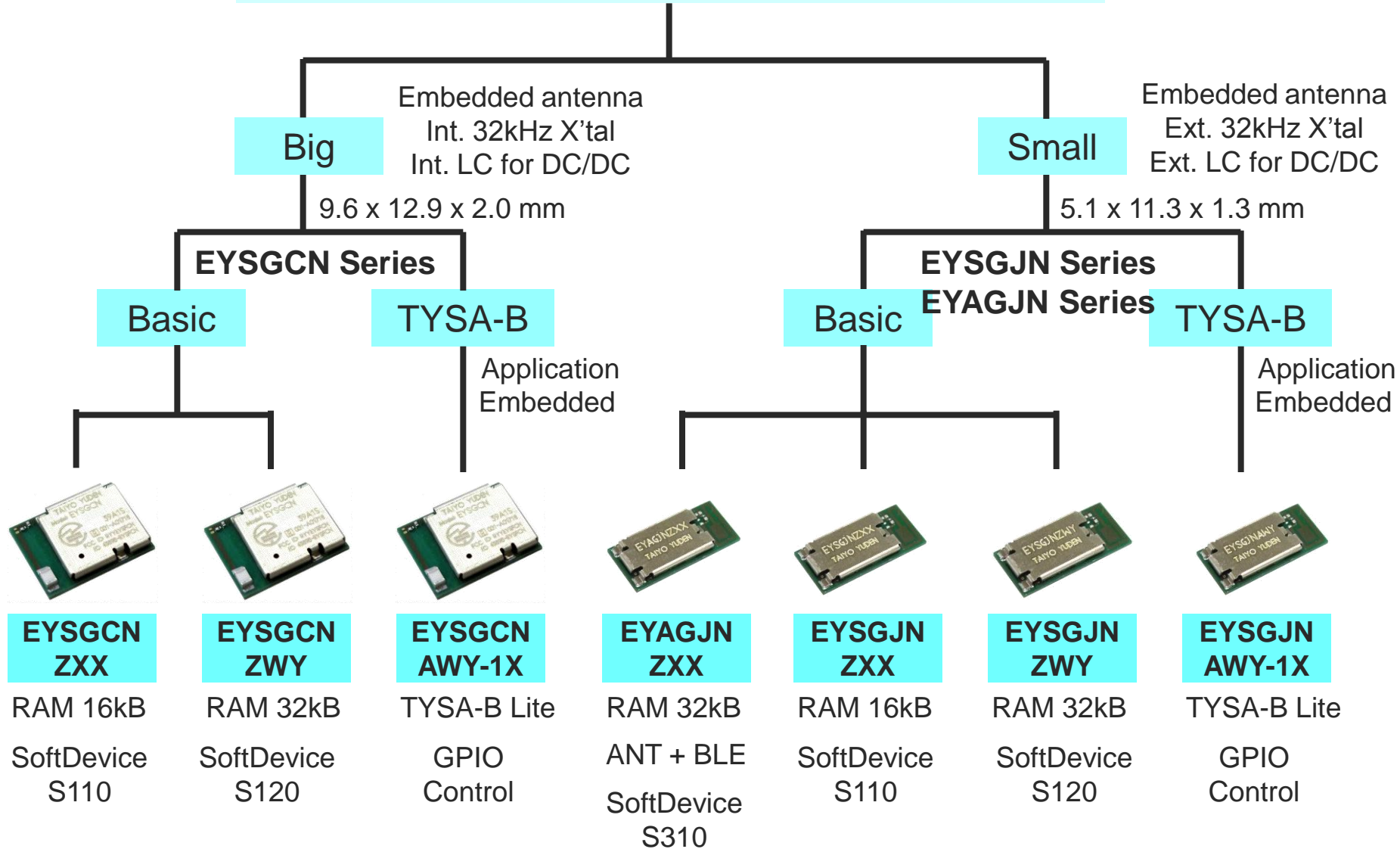


**Wireless Module**  
***Bluetooth<sup>®</sup> Smart Module***  
**EYSGCN Series**  
**EYSGJN Series**  
**EYAGJN Series**  
**Overview**

Sep. 14, 2015 Version 1.0

# Taiyo Yuden Bluetooth® Smart Module Line-Up

## Taiyo Yuden Bluetooth® Smart Module



# Bluetooth® Smart Module: EYSGCNZXX

## Features

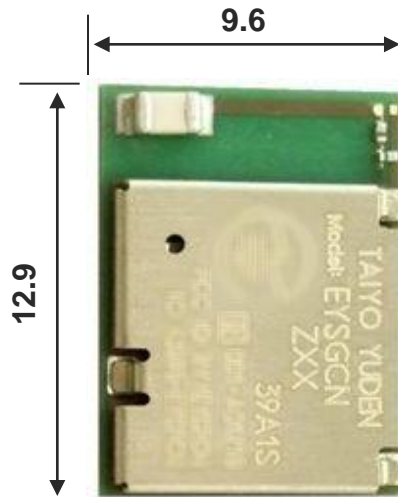
- Frequency: 2402 to 2480 MHz
- Output power: +4dBm typ.
- Single power supply: 1.8 – 3.6V
- Single Mode Bluetooth Smart Slave
- Chip: nRF51822 Rev.3 (Nordic)
- Integrated System/Sleep Clock
- Integrated high performance ceramic chip antenna
- ARM Cortex M0 32bit processor
- 256kB Flash and 16kB RAM
- Interface: SPI, UART, I2C and 8/9/10bit ADC
- Outline: 9.6 x 12.9 x 2.0 mm with 1mm pad pitch
- Operating Temperature range: -20 to 75 deg-C
- Bluetooth and Japan, FCC, IC qualified
- RoHS compliant / Complete Lead Free

## Applications

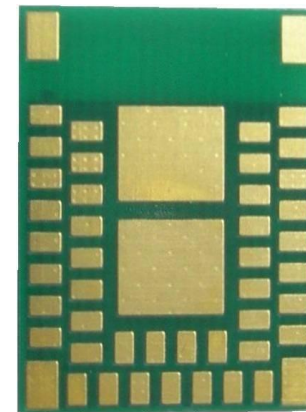
- Cycle computer
- Heart rate monitor
- Blood pressure monitor
- Blood glucose meter
- Weighing machine
- Thermometer
- Mobile accessories
- Sports and fitness sensors
- Remote controllers
- Toys

## Outline

Unit: mm

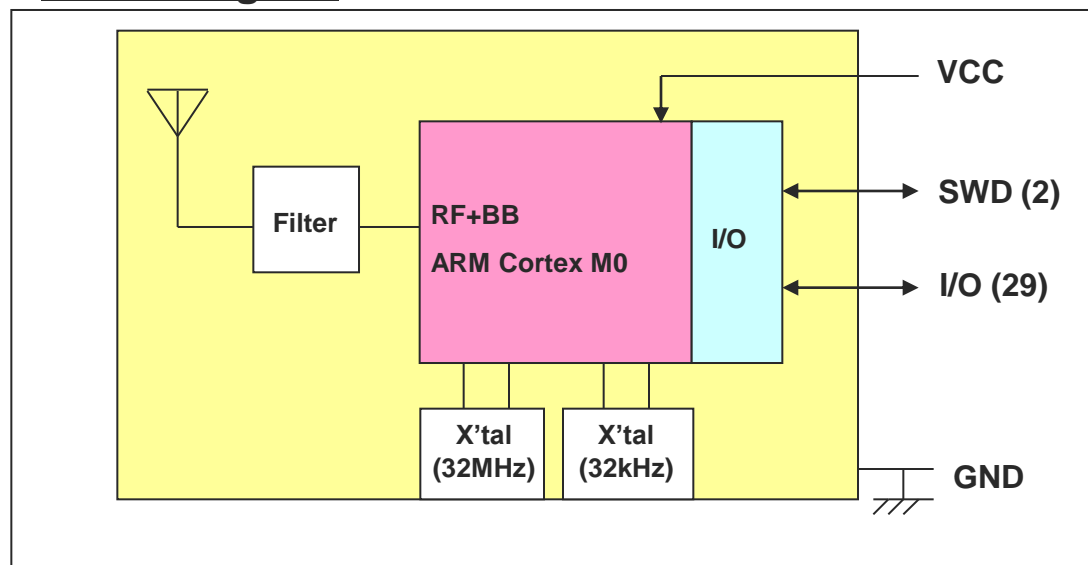


Top View



Bottom View

## Block Diagram



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**TAIYO YUDEN**

# Bluetooth® Smart Module: EYSGCNZWY

## Features

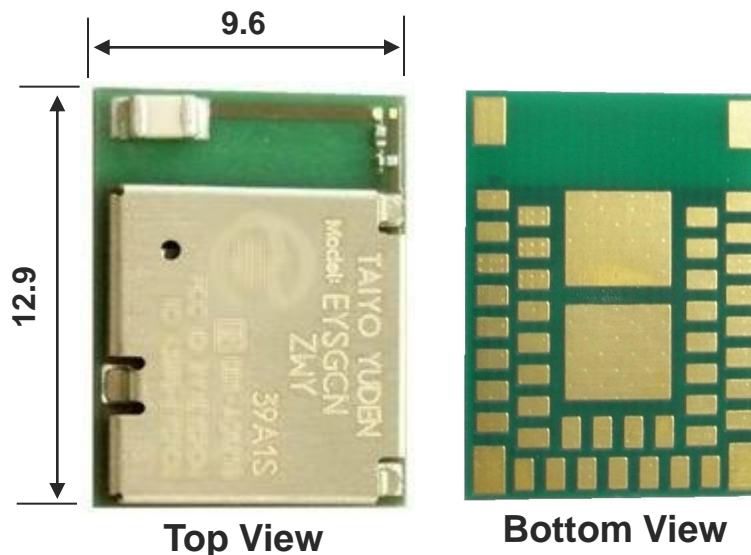
- Frequency: 2402 to 2480 MHz
- Output power: +4dBm typ.
- Single power supply: 1.8 – 3.6V
- Single Mode Bluetooth Smart **Slave / Master**
- Chip: nRF51822 **Rev.3** (Nordic)
- Integrated System/**Sleep Clock**
- Integrated high performance ceramic chip antenna
- ARM Cortex M0** 32bit processor
- 256kB Flash** and **32kB RAM**
- Interface: SPI, UART, I2C and 8/9/10bit ADC
- Outline: **9.6 x 12.9 x 2.0** mm with **1mm** pad pitch
- Operating Temperature range: -20 to 75 deg-C
- Bluetooth and Japan, FCC, IC qualified
- RoHS compliant / Complete Lead Free

## Applications

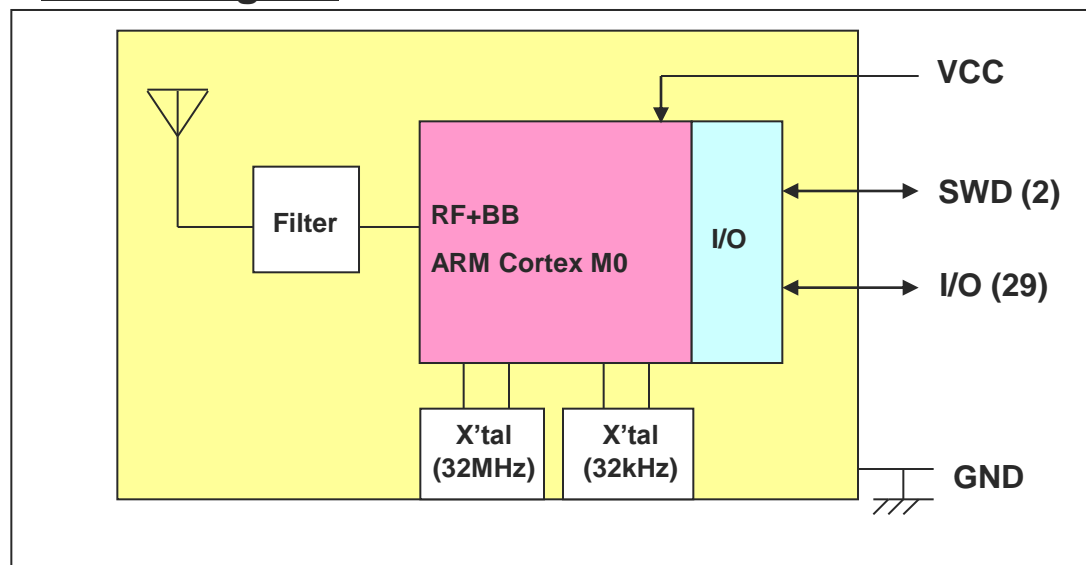
- Cycle computer
- Heart rate monitor
- Blood pressure monitor
- Blood glucose meter
- Weighing machine
- Thermometer
- Mobile accessories
- Sports and fitness sensors
- Remote controllers
- Toys

## Outline

Unit: mm



## Block Diagram



All specifications are subject to change without notice.

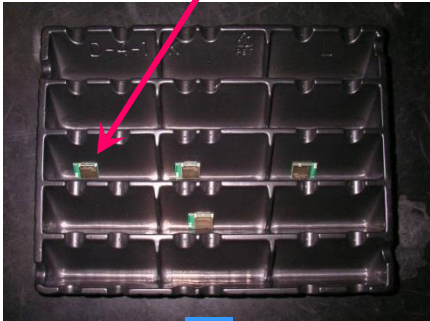
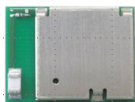
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# Bluetooth® Smart Module Sample, Evaluation Board / Kit

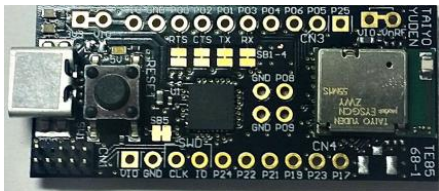
## EYSGCNZXX, EYSGCNZWY (Module)

### Module samples



## EBSGCMZWY (EV-B)

### Evaluation board



## EKSGCMZWY (EV-K)

### Evaluation kit

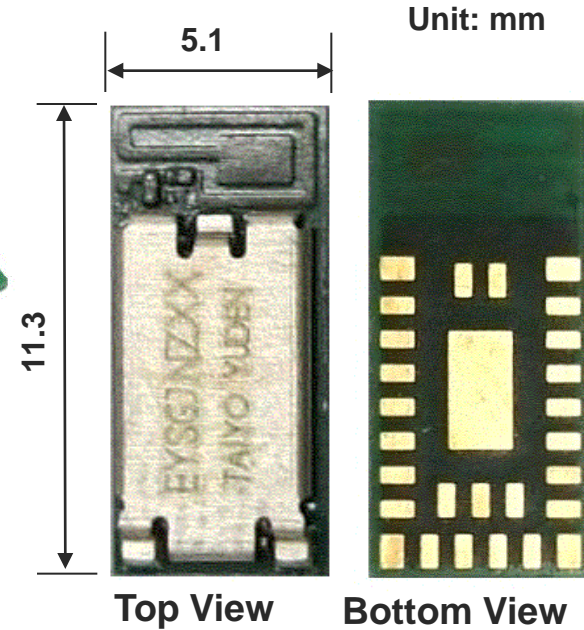


# Bluetooth® Smart Module **EYSGJNZXX**

## Features

- Frequency: 2402 to 2480 MHz
- Output power: +4dBm typ.
- Single power supply: 1.8 – 3.6V
- Single Mode Bluetooth Smart Slave
- Chip: nRF51822 **Rev.3** (Nordic)
- Integrated System Clock
- ARM Cortex M0** 32bit processor
- 256kB Flash** and **16kB RAM**
- Interface: SPI, UART, I2C and 8/9/10bit ADC
- Integrated high performance pattern antenna
- Outline: **5.1 x 11.3 x 1.3**mm MAX
- Operating Temperature range: -20 to 75 deg-C
- Bluetooth and Japan, FCC, IC qualified
- RoHS compliant / Complete Lead Free

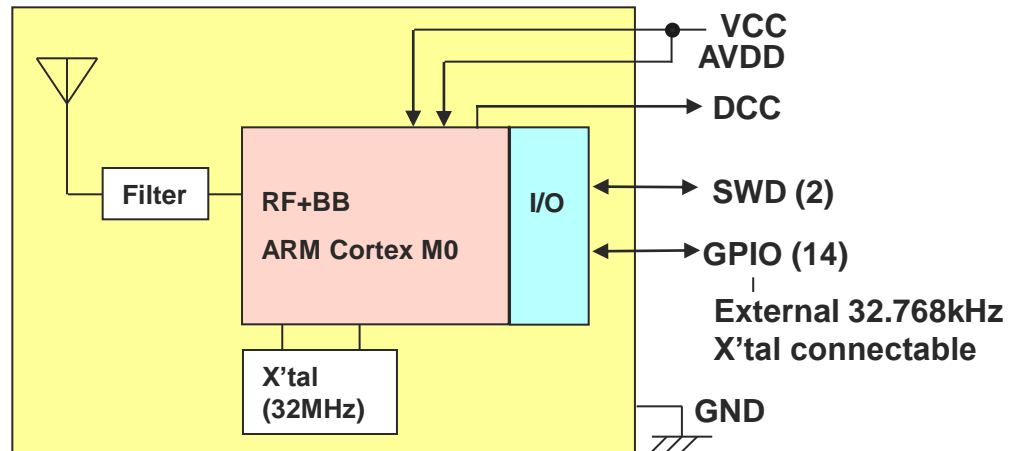
## Outline



## 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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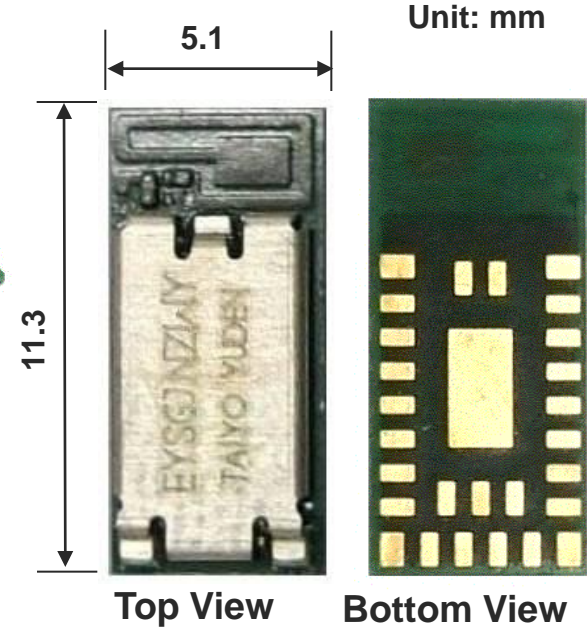
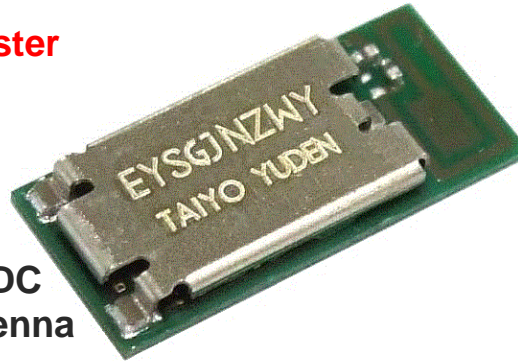
**TAIYO YUDEN**

# Bluetooth® Smart Module **EYSGJNZWY**

## Features

- Frequency: 2402 to 2480 MHz
- Output power: +4dBm typ.
- Single power supply: 1.8 – 3.6V
- Single Mode Bluetooth Smart **Slave / Master**
- Chip: nRF51822 **Rev.3** (Nordic)
- Integrated System Clock
- ARM Cortex M0** 32bit processor
- 256kB Flash** and **32kB RAM**
- Interface: SPI, UART, I2C and 8/9/10bit ADC
- Integrated high performance pattern antenna
- Outline: **5.1 x 11.3 x 1.3**mm MAX
- Operating Temperature range: -20 to 75 deg-C
- Bluetooth and Japan, FCC, IC qualified
- RoHS compliant / Complete Lead Free

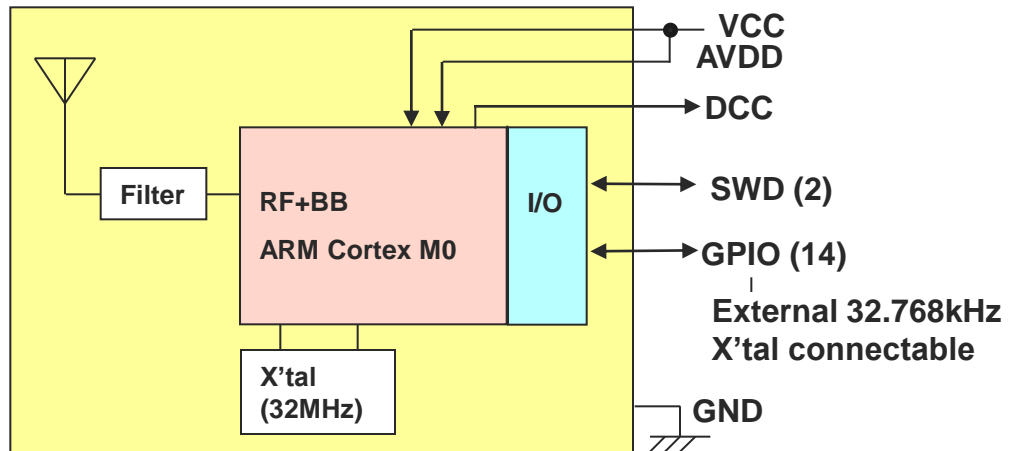
## Outline



## 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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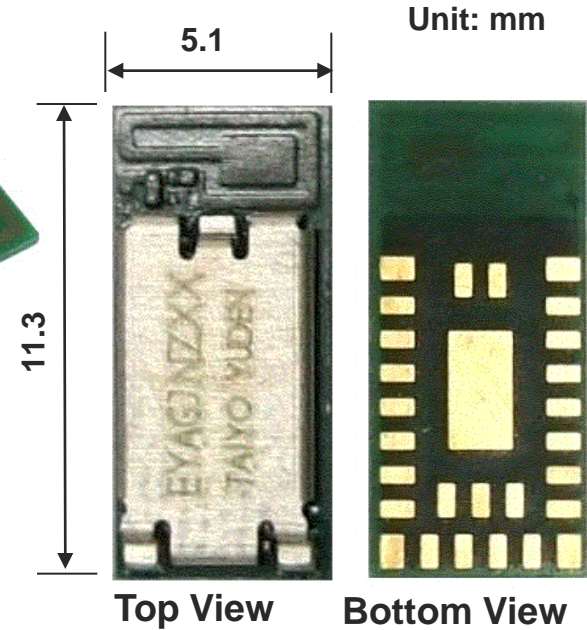
**TAIYO YUDEN**

# ANT + Bluetooth® Smart Module **EYAGJNZXX**

## Features

- Frequency: 2402 to 2480 MHz
- Output power: +4dBm typ.
- Single power supply: 1.8 – 3.6V
- ANT** + Single Mode Bluetooth Smart Slave
- Chip: **nRF51422 Rev 3** (Nordic)
- Integrated System Clock
- ARM Cortex M0** 32bit processor
- 256kB Flash and 32kB RAM**
- Interface: SPI, UART, I2C and 8/9/10bit ADC
- Integrated high performance pattern antenna
- Outline: **5.1 x 11.3 x 1.3**mm MAX
- Operating Temperature range: -20 to 75 deg-C
- Bluetooth and Japan, FCC, IC qualified
- RoHS compliant / Complete Lead Free

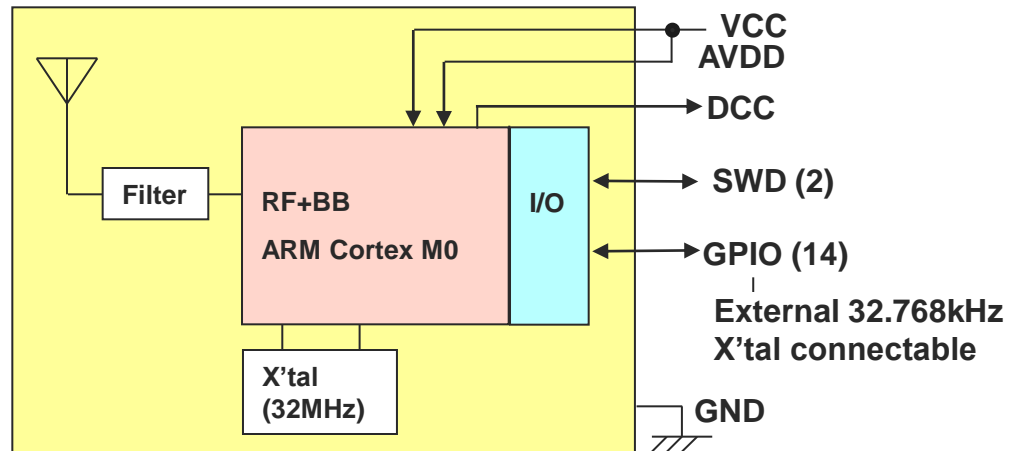
## Outline



## 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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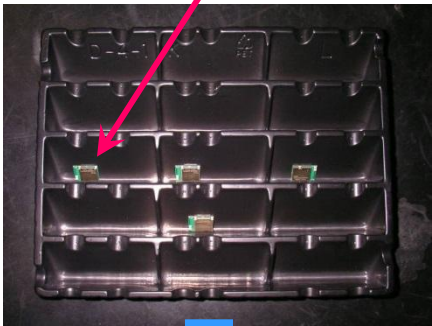
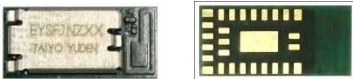
**TAIYO YUDEN**



# Bluetooth® Smart Module Sample, Evaluation Board / Kit

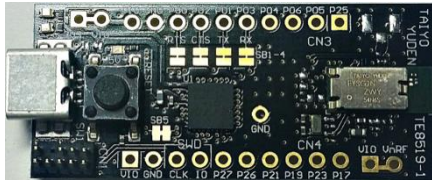
**EYSGJNZXX, EYSGJNZWY, EYAGJNZXX** (Module)

■ Module samples



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

■ Evaluation board

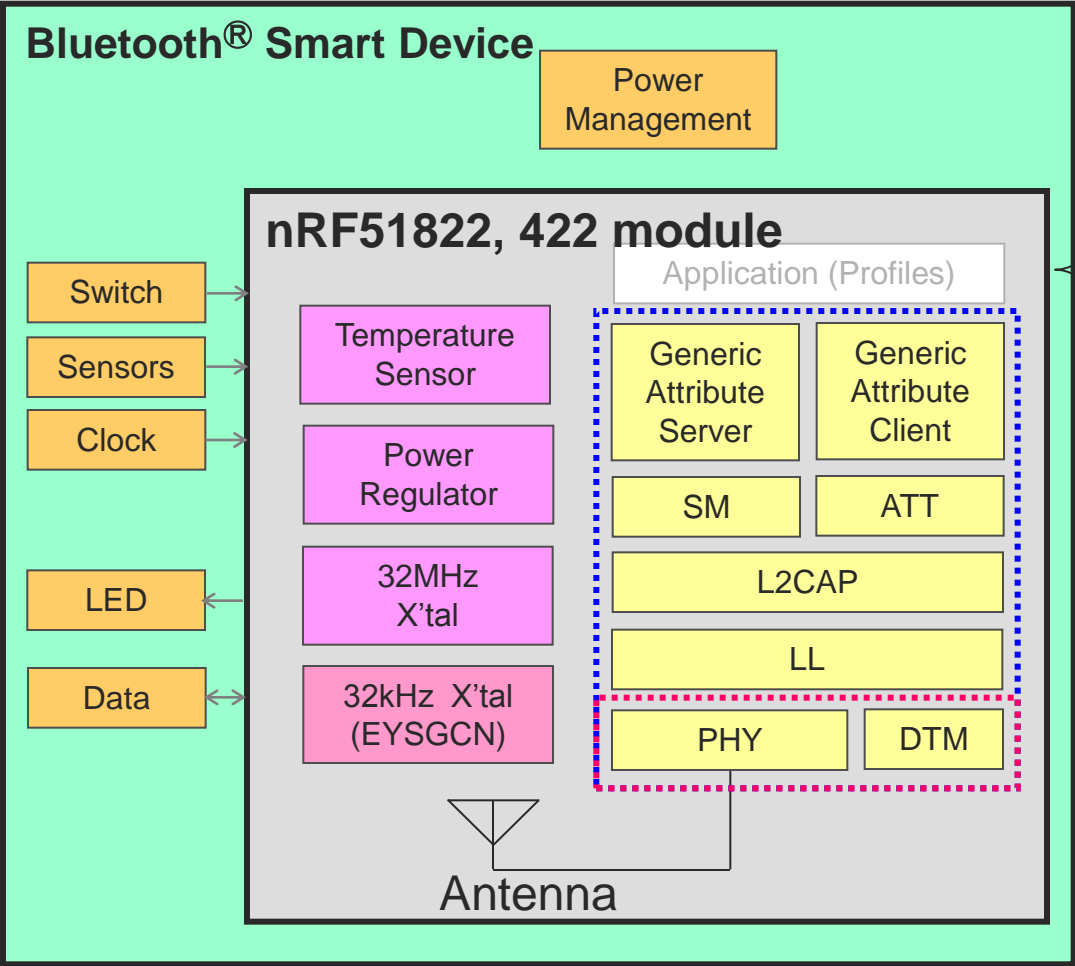


**EKSGJNZWY, EKSGJNZWY** (EV-K)

■ Evaluation kit



# Application Layer image for Basic Module



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

Basic module will be written under GATT.

## Software Device

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

## EYSGCN, EYSGJN, EYAGJN Basic Module

# Bluetooth® Smart Module: EYSGCNAWY-1X

## Features

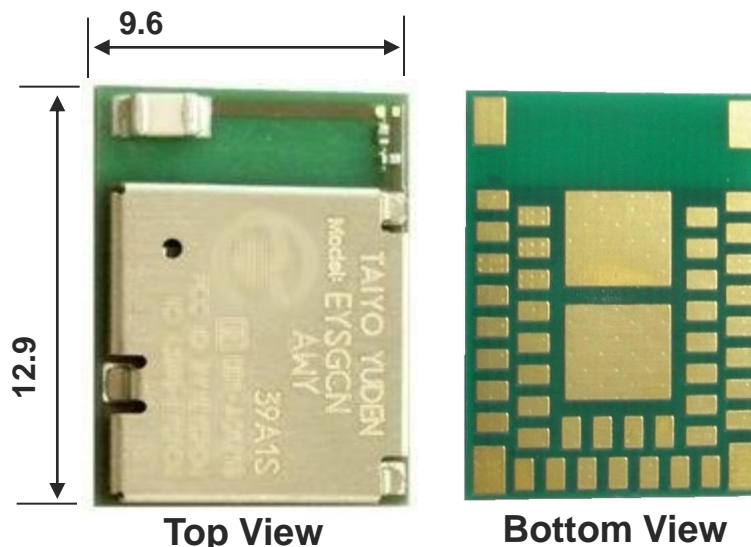
- Frequency: 2402 to 2480 MHz
- Output power: +4dBm typ.
- Single power supply: 1.8 – 3.6V
- Single Mode Bluetooth Smart **Slave / Master**
- Chip: nRF51822 (Nordic)
- Integrated System/Sleep Clock
- Integrated high performance ceramic chip antenna
- ARM Cortex M0** 32bit processor
- Software Embedded by Taiyo Yuden**
- **(TYSA-B Lite: Generic Data transfer, Battery Service)**
- Interface: UART
- Outline: **9.6 x 12.9 x 2.0** mm with **1mm** pad pitch
- Operating Temperature range: -20 to 75 deg-C
- Bluetooth and Japan, FCC, IC qualified
- RoHS compliant / Complete Lead Free

## Applications

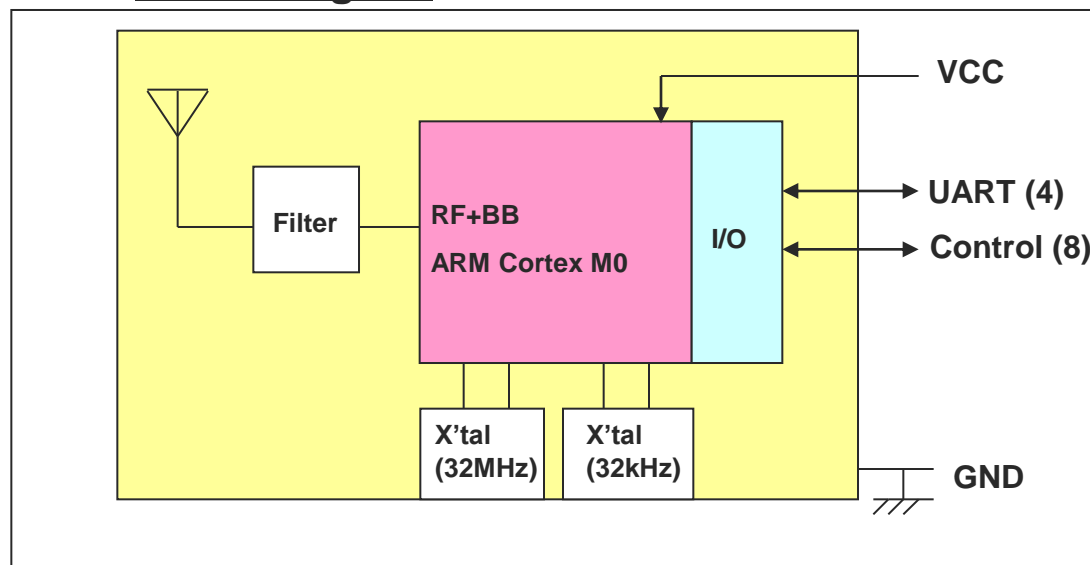
- Cycle computer
- Heart rate monitor
- Blood pressure monitor
- Blood glucose meter
- Weighing machine
- Thermometer
- Mobile accessories
- Sports and fitness sensors
- Remote controllers
- Toys

## Outline

Unit: mm



## Block Diagram



All specifications are subject to change without notice.

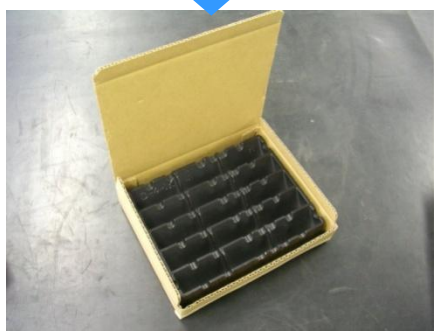
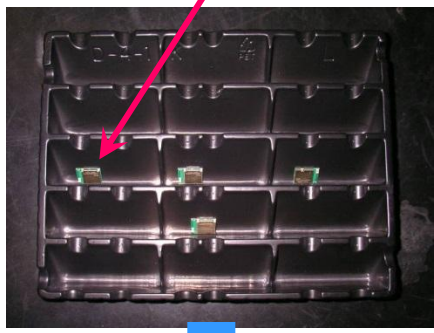
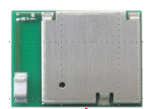
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**TAIYO YUDEN**

# Bluetooth® Smart Module Sample, Evaluation Board

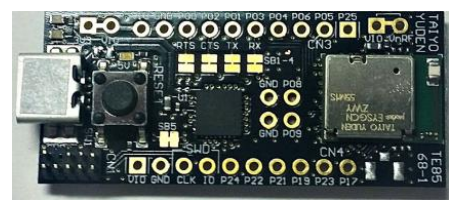
## EYSGCNAWY-1X (Module)

### ■ Module samples



## EBSGCNAWY-1X (EV-B)

### ■ Evaluation board



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

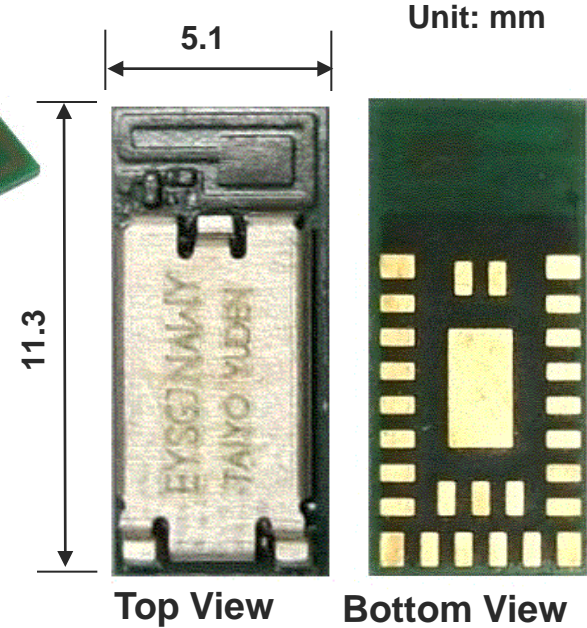
## Features

- Frequency: 2402 to 2480 MHz
- Output power: +4dBm typ.
- Single power supply: 1.8 – 3.6V
- Single Mode Bluetooth Smart **Slave / Master**
- Chip: nRF51822 Rev3 (Nordic)
- Integrated System Clock
- ARM Cortex M0** 32bit processor
- Software Embedded by Taiyo Yuden**
- (TYSA-B Lite : Generic Data transfer, Battery Service)**
- Interface: UART
- Integrated high performance pattern antenna
- Outline: **5.1 x 11.3 x 1.3mm** MAX
- Operating Temperature range: -20 to 75 deg-C
- Bluetooth and Japan, FCC, IC qualified
- RoHS compliant / Complete Lead Free

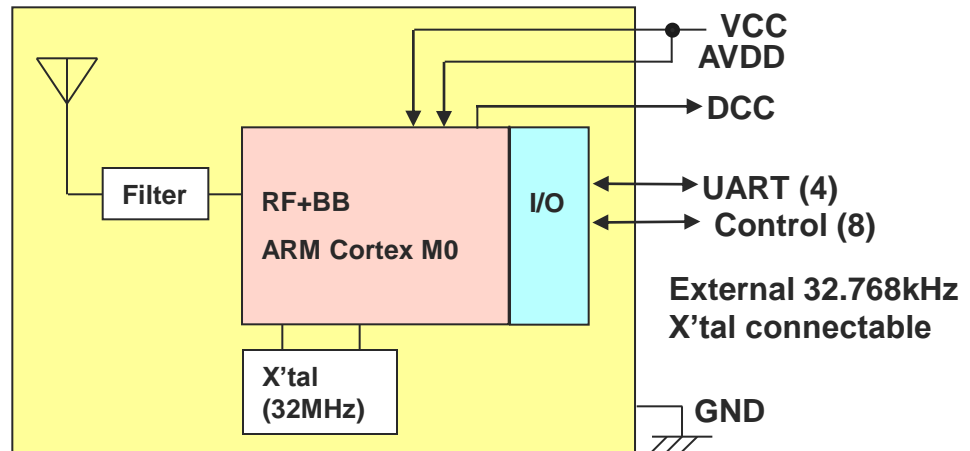
## Applications

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

## Outline



## Block Diagram

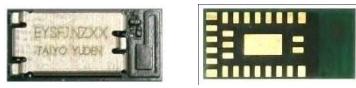
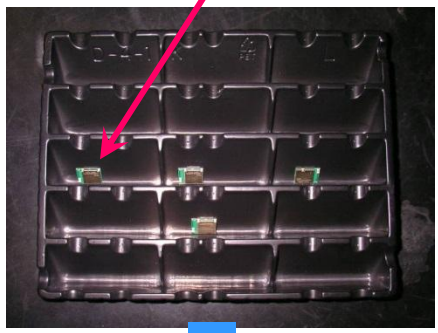

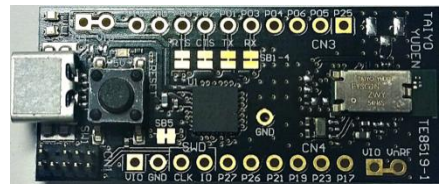



All specifications are subject to change without notice.

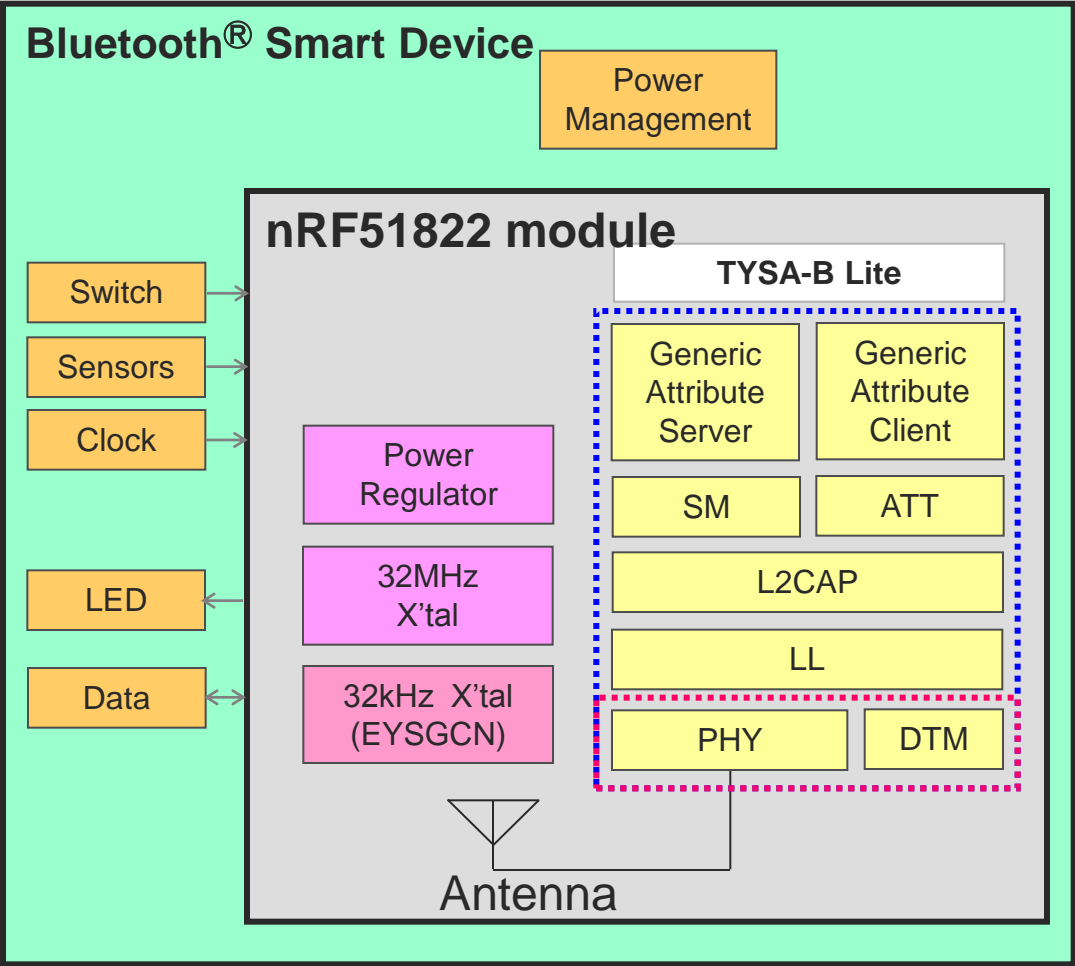
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**TAIYO YUDEN**

# Bluetooth® Smart Module Sample, Evaluation Board

EYSGJNAWY-1X (Module)	EBSGJNAWY-1X (EV-B)
■ Module samples	■ Evaluation board
  	 

# Application Layer image for TYSA-B Lite Module



**TYSA-B :**  
**Taiyo Yuden Standard Application**  
**for Bluetooth® Smart**

**Software Device** 

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

**EYSGCN, EYSGJN**  
**TYSA-B Lite Module**

# Bluetooth® Smart standard module

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



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