



## Micro Modules

(Substrates with Built-in ICs, Products Utilizing with SESUB)

# Bluetooth V4.0 Smart Single Mode Module

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SESUB-PAN-T2541

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## Micro Modules

## (Substrates with Built-in ICs, Products Utilizing with SESUB)

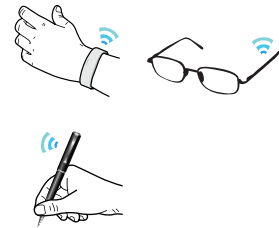
# Overview of Bluetooth V4.0 Smart Single Mode Module

### FEATURES

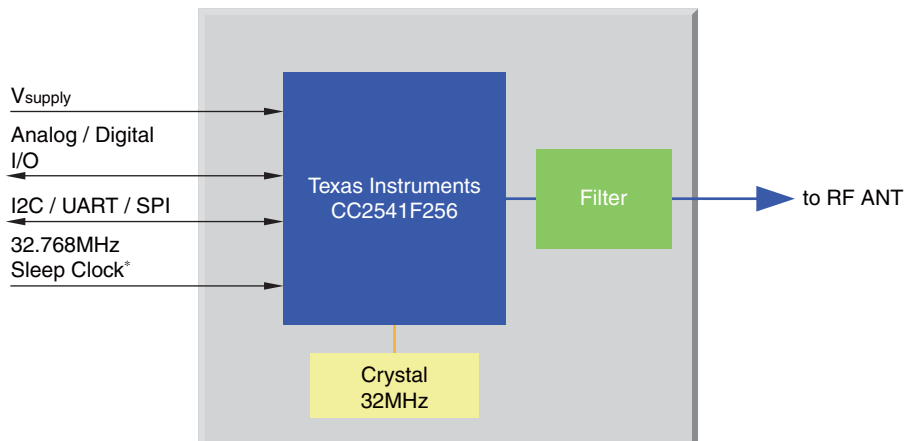
- Micro size (4.6×5.6×1.0mm) ideal for wearable devices.
- Communicable with Bluetooth® Smart Ready compatible devices.
- Separate antenna type that provides more flexibility for product design.

### APPLICATION

- Health care, sports & fitness devices  
(physical activity monitor, thermometer, blood pressure monitor, blood oxygen monitor, blood sugar monitor, heart rate monitor, etc.)
- Wearable computers  
(bracelet type, watch type, ring type, glass type, shoe, hat, shirt, etc.)
- Home & entertainment devices  
(remote control, sensor tag, toy, lighting apparatus, etc.)
- PC accessories  
(mouse, keyboard, stylus pen, presentation pointer, etc.)

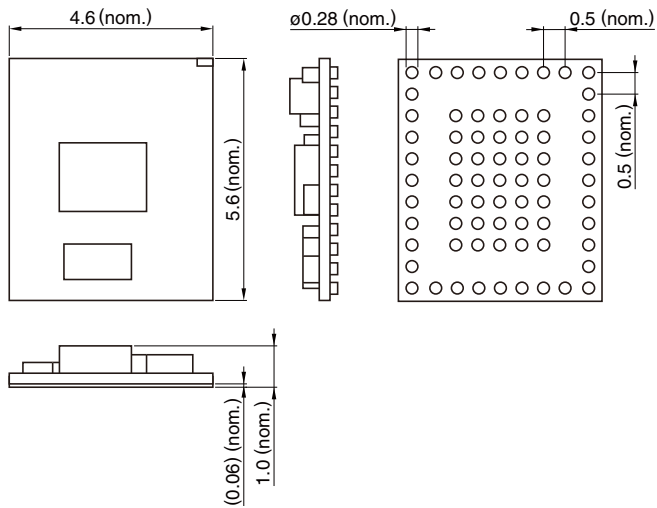


### BLOCK DIAGRAM

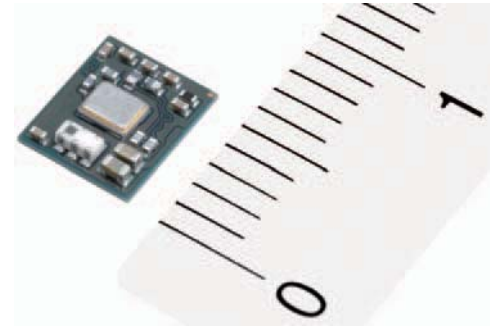


- Bluetooth® and Bluetooth® Low Energy are the standards established by Bluetooth Special Interest Group (SIG).

## Bluetooth V4.0 Smart Single Mode Module

**SESUB-PAN-T2541****SHAPE & DIMENSIONS**

Dimensions in mm

**ELECTRICAL CHARACTERISTICS****CHARACTERISTICS SPECIFICATION TABLE**







|                                 |                                   |
|---------------------------------|-----------------------------------|
| Communication standards         | 2.4GHz Bluetooth® V4.0 low energy |
| Wireless output power (dBm)typ. | 0                                 |
| Communication range (m)*        | 10                                |
| Interface                       | UART/SPI/I2C/GPIO/ADC             |

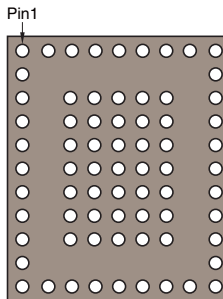
\* Line-of-sight distances. Depending on antenna properties.

# Bluetooth V4.0 Smart Single Mode Module SESUB-PAN-T2541

## MODULE TERMINAL

|          |      |      |      |       |       |       |       |      |
|----------|------|------|------|-------|-------|-------|-------|------|
| 1        | 2    | 3    | 4    | 5     | 6     | 7     | 8     | 9    |
| GND      | P2_1 | P2_0 | VDO  | VDA_1 | VDA_2 | GND   | RST_N | GND  |
| 36       |      |      |      |       |       |       |       | 10   |
| P2_2     |      |      |      |       |       |       |       | P0_0 |
| 35       |      |      |      |       |       |       |       | 11   |
| GND      |      | GND  | GND  | GND   | GND   | GND   |       | P0_1 |
| 34       |      |      |      |       |       |       |       | 12   |
| P2_4/32k |      | GND  | GND  | GND   | GND   | GND   |       | P0_2 |
| 33       |      |      |      |       |       |       |       | 13   |
| P2_3/32k |      | GND  | GND  | GND   | GND   | GND   |       | P0_3 |
| 32       |      |      |      |       |       |       |       | 14   |
| P1_7     |      | GND  | GND  | GND   | GND   | GND   |       | P0_4 |
| 31       |      |      |      |       |       |       |       | 15   |
| P1_6     |      | GND  | GND  | GND   | GND   | GND   |       | P0_5 |
| 30       |      |      |      |       |       |       |       | 18   |
| P1_1     |      | GND  | GND  | GND   | GND   | GND   |       | P0_6 |
| 29       |      |      |      |       |       |       |       | 17   |
| P1_2     |      | GND  | GND  | GND   | GND   | GND   |       | P0_7 |
| 28       |      |      |      |       |       |       |       | 18   |
| P1_3     |      |      |      |       |       |       |       | P1_0 |
| 27       | 26   | 25   | 24   | 23    | 22    | 21    | 20    | 19   |
| GND      | SCL  | SDA  | P1_4 | P1_5  | GND   | 2G_RF | GND   | GND  |

|       |   |
|-------|---|
| RF    |  |
| POWER |  |
| Clock |  |
| I/O   |  |
| Cont  |  |
| GND   |  |



Module Bottom View

## EVALUATION BOARD

Based on the IC manufacturer-provided evaluation environment (TDK part number: SP13801)

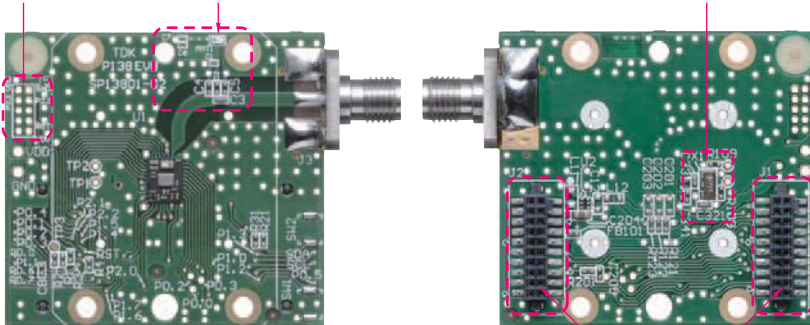
- The product is used by connecting to the IC evaluation kits of IC manufacturers.
- All software development environments and programming tools are provided by IC manufacturers.
- Various development materials of IC manufacturers are available as they are, which enables smooth development of products.
- We also offer evaluation kits which enables to evaluate product functions easily. (TDK part number: SP13808)

\* For more details, please contact us.

Equipped with a program writing terminal

A chip antenna on the evaluation board

Equipped with a land pattern for a crystal unit for generating a sleep clock



Connectors to evaluation boards of the IC manufacturers

• All specifications are subject to change without notice.