



## Micro Modules

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

Bluetooth® V4.1 Smart (Low Energy) Single Mode Module

# SESUB-PAN-D14580

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## Micro Modules

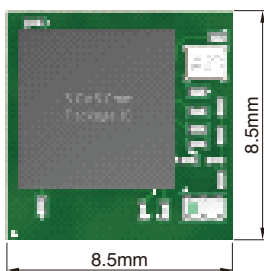
### (Substrates with Built-in ICs, Products Utilizing with SESUB)

#### Bluetooth® V4.1 Smart (Low Energy) Single Mode Module

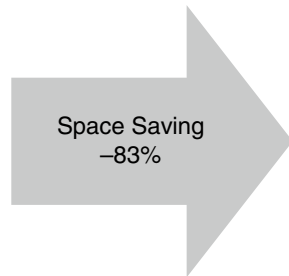
# Overview of SESUB-PAN-D14580

## FEATURES

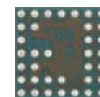
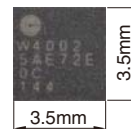
- Ultra small package - Ideal for for wearable devices
- Space saving Ultra small package 3.5 x 3.5 x 1.0mm (TYP)
- Packaged in 36 pin solder bumped BGA with 0.5mm pitch
- Compatible with Bluetooth® Smart Ready products
- ARM Cortex-M0 32bit high performance microcontroller
- 32kB OTP programmable memory, 84kB ROM for BT stack
- 42kB System SRAM, 8kB Retention SRAM
- Including IC (Dialog Semiconductor : DA14580), Crystal (16MHz), Inductor, and Capacitor in this module.



Discrete Solution  
72.3mm<sup>2</sup>



\* Production Part is over molded

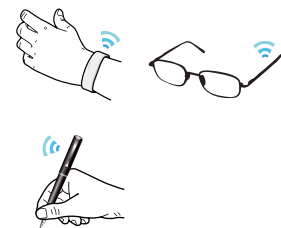


0.5mm pitch  
Solder Bumped BGA  
36pins

SESUB-PAN-D14580  
12.3mm<sup>2</sup>

## APPLICATION

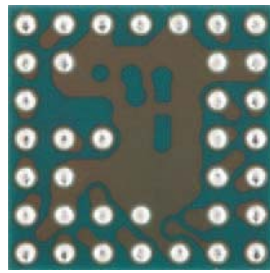
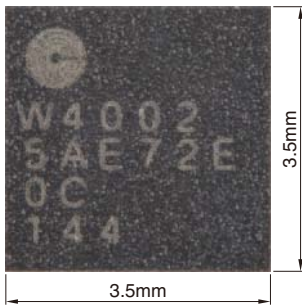
- Healthcare/sports & fitness equipment  
(Example: Activity mass meter, thermometer, sphygmomanometer, blood oximeter, blood glucose meter, heart rate meter, biometrics)
- Wearable devices  
(Example: Wristband, watch, ring, glasses, shoes, hat, shirt)
- Home entertainment equipment  
(Example: Remote control, sensor tag, toys, lighting products)
- PC peripheral applications  
(Example: Mouse, key board, stylus, presentation pointer)



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

# SESUB-PAN-D14580

## SHAPE & DIMENSIONS



0.5mm pitch  
Solder Bumped BGA  
36pins

\* Production Part is over molded

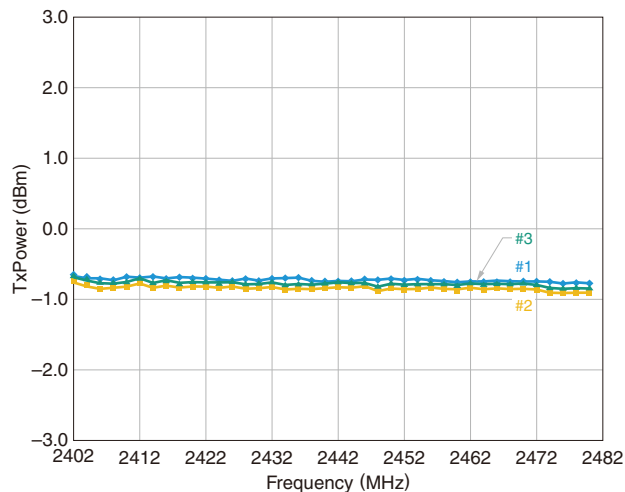
## ELECTRICAL CHARACTERISTICS

### CHARACTERISTICS SPECIFICATION TABLE

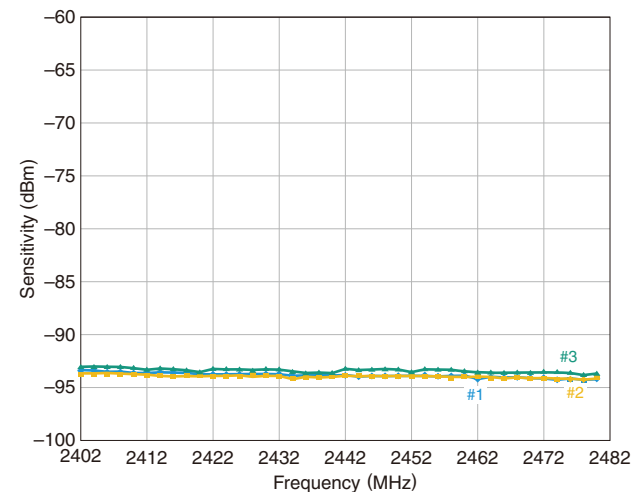
|                                |   |
|--------------------------------|---|
| Communication standard         | 2.4GHz Bluetooth® V4.1 Low Energy               |
| Transmitter output power level | 0dBm (typ)                                      |
| Receiver sensitivity level     | -94dBm  |
| Host Interface                 | UART (2ch) / SPI+ / I2C (100k/400kHz)           |
| Peripheral Interface           | 10bits ADC (4ch) / Pin-configurable GPIO        |
| Current consumption            | 5.0mA (Tx), 5.4mA (Rx), 0.8μA (Deep Sleep mode) |

## RF CHARACTERISTICS

### Frequency vs. TX Power



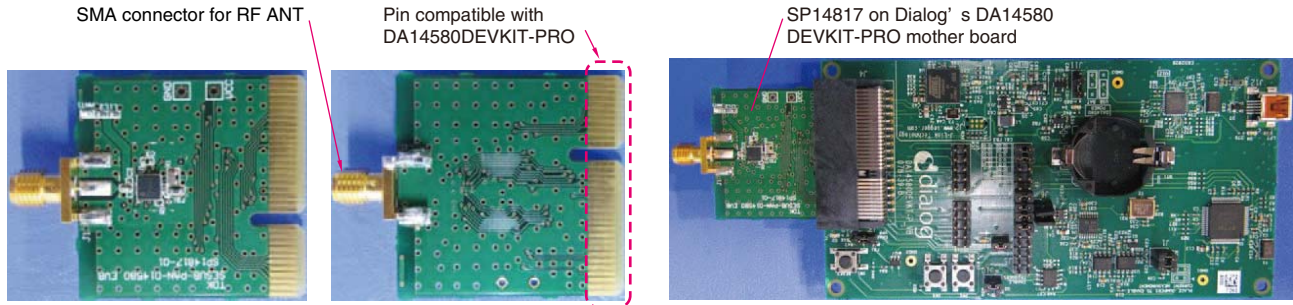
### Frequency vs. Sensitivity



# SESUB-PAN-D14580

## ■ SESUB-PAN-D14580 EVALUATION BOARD [SP14817]

- TDK's SP14817, Daughter board is ready to connect with Dialog Semiconductor's evaluation mother board. This allows for quick designs by utilizing Dialog's -software development tools and development materials



## ■ SESUB-PAN-D14580 EVALUATION KIT [SESUB-PAN-D14580EVK]

- Regulatory certified evaluation module [SP14808] with integrated 128kB Serial Flash ROM for reprogramming during development. Evaluation Module is ideal for immediate software development.



## ■ ORDERING INFORMATION

| Ordering Code        | Contents | MOQ     | Remark  |
|----------------------|----------|---------|---|
| SESUB-PAN-D14580     |          | 1000pcs |   |
| SP14817              |          | 1pc     | Evaluation board for RF characteristics.  |
| SESUB-PAN-D14580 EVK | SP14808  | 1pc     | SESUB-PAN-D14580 Evaluation Module with ANT<br>Certified Japanese & FCC Radio Certification |
|                      | SP14809  | 1pc     | Adapter Board for SP14808.  |
| SP14808              |          | 1pc     | For the customer who wants to have spare units.   |
| SP14808 ST           |          | 1set    | SP14808ST contains 5 pcs of SP14808 in a set.<br>Volume discount.                           |