TDK

September 2015

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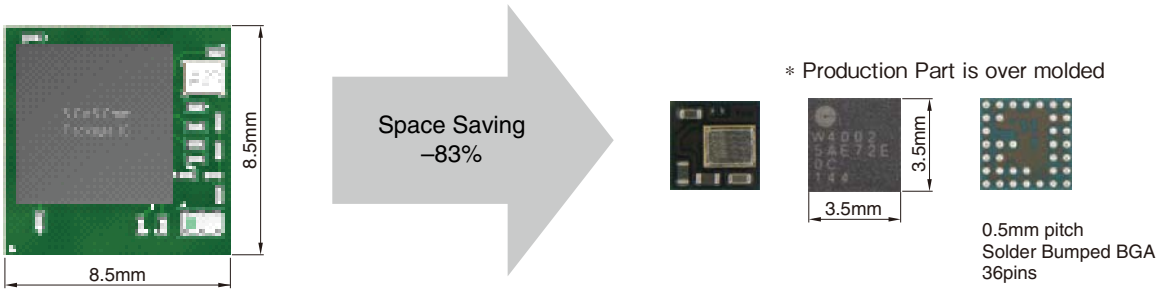
Bluetooth® V4.1 Smart (Low Energy) Single Mode Module

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
- External antenna connection allows design flexibility for improved performance.

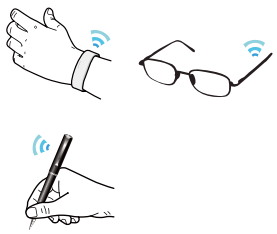


Discrete Solution
72.3mm²

SESUB-PAN-D14580
12.3mm²

APPLICATION

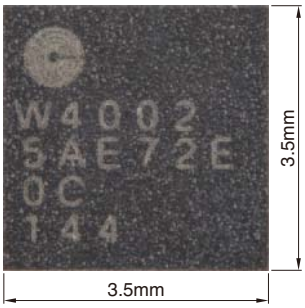
- Healthcare/sports & fitness equipment
  (Example: Activity mass meter, thermometer, sphygmomanometer, blood oximeter, blood glucose meter, heart rate meter, biometrics)
- Wearable devices
  (Example: Wristband, watch, ring, glasses, shoes, hat, shirt)
- Home entertainment equipment
  (Example: Remote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

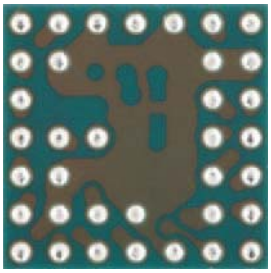


- Bluetooth® and Bluetooth® Low Energy are the standards established by Bluetooth Special Interest Group (SIG).

SESUB-PAN-D14580

SHAPE & DIMENSIONS





0.5mm pitch
Solder Bumped BGA
36pins

＊ Production Part is over molded

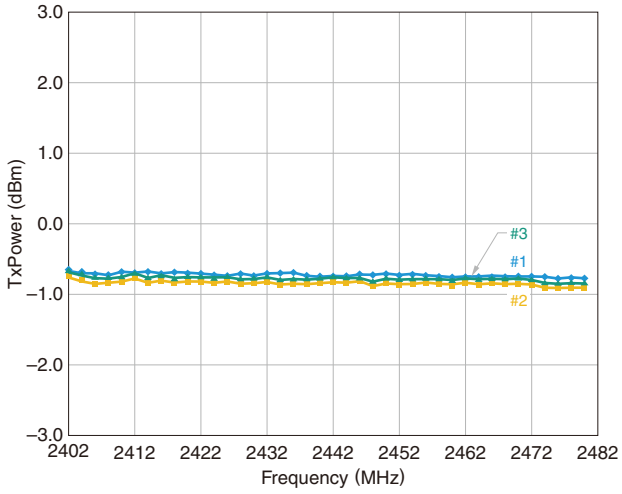
ELECTRICAL CHARACTERISTICS

CHARACTERISTICS SPECIFICATION TABLE

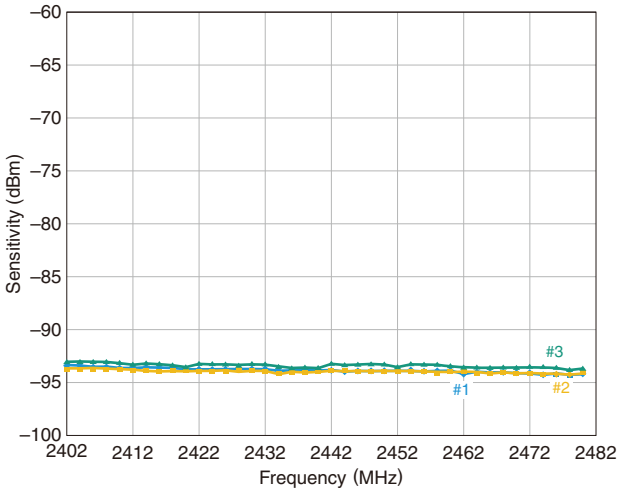
Communication standard	2.4GHz Bluetooth® V4.1 Low Energy
Transmitter output power level	0dBm (typ)
Receiver sensitivity level	94dBm
Host Interface	UART (2ch)/ SPI+ / I2C (100k/400kHz)
Peripheral Interface	10bits ADC (4ch) / Pin-configurable GPIO
Current consumption	5.0mA (Tx), 5.4mA (Rx), 0.8μA (Deep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

RF CHARACTERISTICS

Frequency vs. TX Power



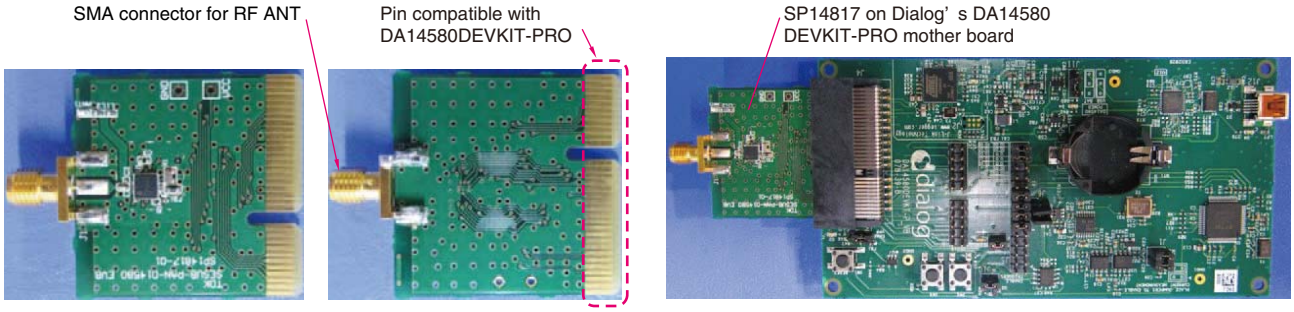
Frequency vs. Sensitivity



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.

SESUB-PAN-D14580EVK

SP14808 evaluation module with integrated antenna
[ARIB-STD T66 / FCC certified]

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 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. Volume discount.