



Micro Modules

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

Bluetooth V4.0 Smart Single Mode Module

SESUB-PAN-T2541

Caution

The products in this catalog will be or have been stopped production

Discontinue Issue Date	Oct 16, 2017
Last Purchase Order Date	Jan. 31, 2018
Last Shipment Date	Jun. 30, 2018

Please refer to our Web site about replacement information.

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

Bluetooth V4.0 Smart Single Mode Module

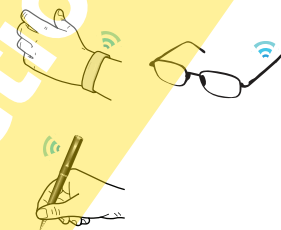
Overview of SESUB-PAN-T2541

FEATURES

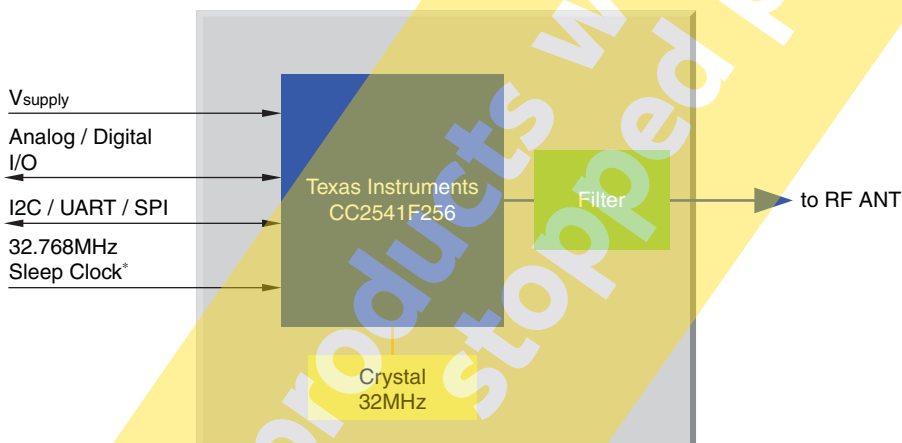
- Micro size (4.6×5.6×1.0mm) ideal for wearable devices.
- Communicable with Bluetooth® Smart Ready compatible devices.
- Separate antenna type that provides more flexibility for product design.

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.)



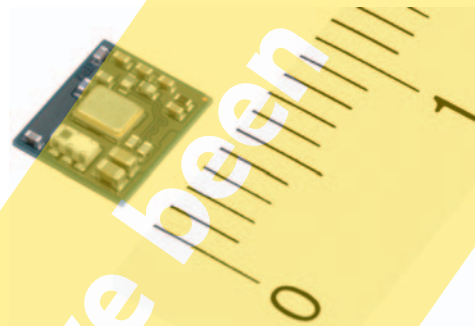
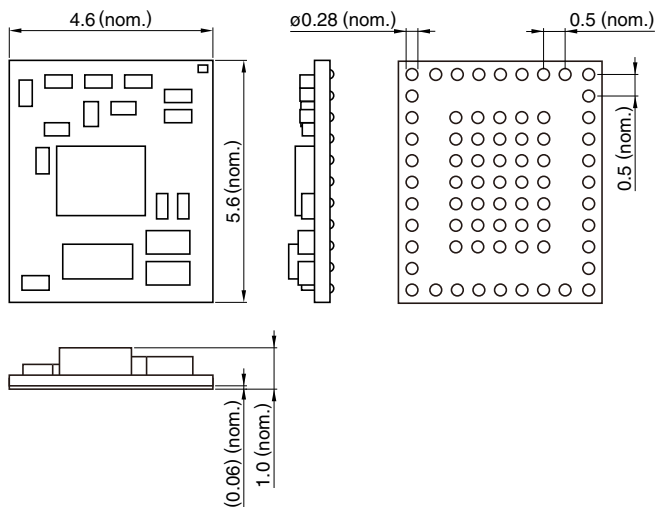
BLOCK DIAGRAM



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

SESUB-PAN-T2541

■ SHAPE & DIMENSIONS



■ 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.







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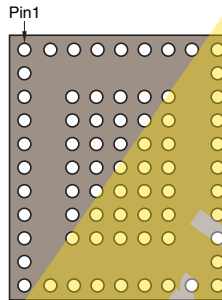
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MODULE TERMINAL

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								16
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

Module Bottom View

RF	
POWER	
Clock	
I/O	
Cont	
GND	



EVALUATION BOARD

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

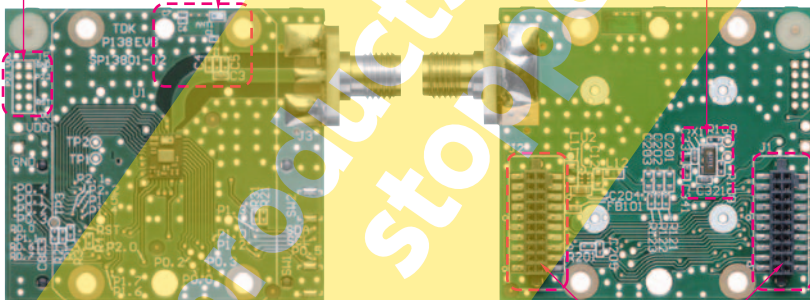
- The product is used by connecting to the IC evaluation kits of IC manufacturers.
- All software development environments and programming tools are provided by IC manufacturers.
- Various development materials of IC manufacturers are available as they are, which enables smooth development of products.
- 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