

## Bluetooth 4.0 Low Energy (single mode) SiP Module PR-BT40BLEA7

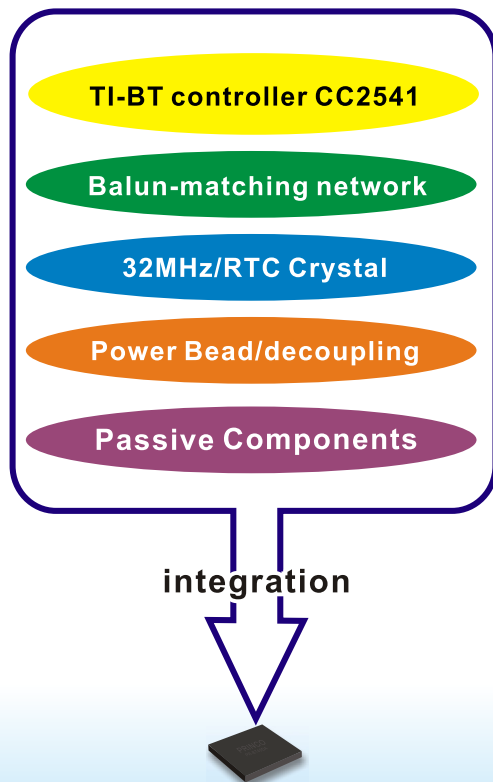
The miniature size Bluetooth 4.0 Ble single mode SiP module integrates TI-CC2541 BT controller, balun -matching network, crystal etc. Excellent RF performance ( Tx: power +0 dBm; Rx sensitivity -98 dBm @250kbps, GFSK) are realized by using Princo's patented ultra high density substrate and advance packaging technology.

By using this extremely small and low-power SiP module, system design flexibility and fast time to market could be achieved. This module is particularly suitable for space-constrained application.

Target applications include:  
2.4GHz BLE systems, Sports and fitness product, Smart phone /Tablet accessories. Data communication interface...



**Bluetooth 4.0  
Low Energy  
(single mode)  
SiP Module  
PR-BT40BLEA7**



### Features and Benefits

#### High Performance with Low System Cost

- TI-CC2541 Bluetooth controller.
- TX: +0 dBm (typical), RX:-98 dBm.
- Easy-to-use. ( 46-pin, 0.6 mm peripheral pitch)
- 2L-PCB design feasible.

#### Small Form Factor with High Reliability

- 7.0mm X 7.0mm X 1.2mm
- Ideal for space-constrained handheld devices.
- Proven for industrial grade use. (-30°C to 85°C)

#### Supported Profiles and Service

- Power-optimized Single mode BLE protocol stack.
- GAP, GATT, ATT, SMP profiles are supported.
- Sample applications: Link Loss/Proximity/Find Me /Phone Status Alert...etc.

#### Electrical features

- UART, I2C, SPI interface.
- VDD: 2.0 - 3.6V.
- 23 GPIO ( with 2 \* 20mA )
- Low Power: Power Mode 3 (external interrupt): 0.5uA.
- HW/Antenna reference designs are available.

# Product Highlights and Specifications

- ★ Extremely Small size: 7.0 mm \* 7.0 mm \*1.2mm.
- ★ TI-CC2541 BT controller, crystal oscillator, balun-impedance matching, power bead... are included.
- ★ 2.4GHz Bluetooth low energy (single mode) compliant.
- ★ Output power TX: +0 dBm (CC2541 output power, typical); Receiver sensitivity Rx: -98dBm @250kbps, GFSK.
- ★ Programmable power range: 20 dB.
- ★ Matched to single-ended 50-ohm antenna.
- ★ Low power mode supported. (External interrupt: 0.5uA; Sleep Timer ON: 1uA; 4-us wake-up: 270uA)
- ★ UART /SPI/I2C interface and 23\*GPIO are supported.
- ★ 2 \* GPIO with 20mA driving capability.
- ★ Operation voltage: VDD: 2.0 V-3.6 V. (Coin battery directly connected.)
- ★ Standard BT profiles, such us GAP, GATT, ATT, SMP, are supported.
- ★ Sample applications supported: Proximity, Link loss, Find Me, Phone Status Alert, Authentication...etc. Contact Princo for details.
- ★ HW / Antenna reference design, and SW sample code are available.

Note:Specifications might be changed without notice.

## Supported Bluetooth 4.0 Low Energy profiles/services

Health Thermometer Profile/Service  
Device Information Service  
Immediate Alert Service  
Heart Rate Profile/Service  
Phone Alert Status Profile  
Alert Notification Profile  
Blood Pressure Profile/Service  
HID Service/over GATT profile  
Scan Parameters Profile/Service  
Running Speed and Cadence Profile/Service  
Cycling Speed and Cadence Profile/Service  
Find Me Profile  
Time Profile  
Battery Service  
Tx Power Service  
Link Loss Service  
Proximity Profile.....  
And more.

**Contact PRINCO for details.**

## Typical Application

