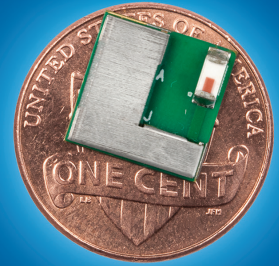


CYPRESS

EZ-BLE™ PRoC™ MODULES

FULLY INTEGRATED, FULLY CERTIFIED, PROGRAMMABLE
BLUETOOTH® SMART MODULES

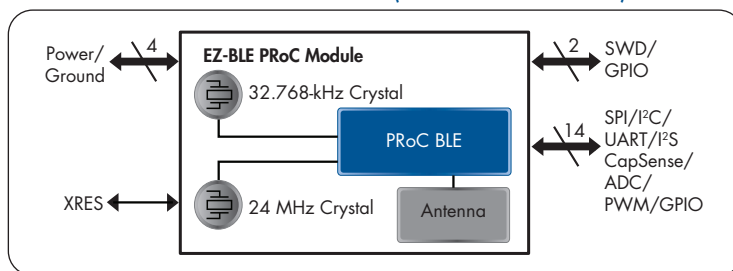


PRODUCT OVERVIEW

INTRODUCTION

EZ-BLE PRoC Modules are fully integrated, fully certified, programmable, Bluetooth Smart or Bluetooth Low Energy (BLE) module designed for ease-of-use and reducing time-to-market. They contain Cypress's PRoC Bluetooth Low Energy (BLE) chip, two crystals, shield, and passive components with both integrated and external antenna options. EZ-BLE PRoC Modules provide a simple and low cost way to add a microcontroller, CapSense® touch controller and Bluetooth Smart connectivity to any system.

EZ-BLE PRoC MODULE BLOCK DIAGRAM (CYBLE-022001-00)



PSoC CREATOR – FULLY INTEGRATED DESIGN ENVIRONMENT (IDE)

EZ-BLE PRoC Modules come with an easy-to-use IDE, PSoC Creator, to configure, develop and program a Bluetooth Smart application. PSoC Creator also provides an option to use third party IDEs such as Keil MDK, IAR or Eclipse after the initial hardware design. Cypress also provides the CySmart test and debug tool, used to emulate a host device for peer testing. CySmart is available as a Windows application, iOS app and Android app.

EZ-BLE PRoC MODULE ADVANTAGES

- Available in a footprint as small as 10 mm x 10 mm x 1.8 mm to support space-constrained applications.
- Fully certified (QDID, FCC, IC, CE, MIC/TELEC and KC) to get Bluetooth Smart products to market faster and save on certification costs.
- Fully integrated (PRoC BLE, crystals, antenna, shield and passive components).
- GUI-based configuration of BLE protocol stack and profiles to reduce design cycle time.
- Integrated CapSense touch controller to support touch-based buttons/sliders/touchpads/proximity.
- Flexible ultra-low power modes to enable longer battery life.

FEATURES

FOOTPRINT AS SMALL AS
10 MM X 10 MM X 1.8 MM

FULLY CERTIFIED

- Bluetooth 4.1/4.2 Qualified with QDID
- Fully certified for international RF regulations - FCC, IC, MIC/TELEC, CE and KC

PSoC® CREATOR™ INTEGRATED DEVELOPMENT ENVIRONMENT

48-MHZ ARM® CORTEX®-M0 MICROCONTROLLER

- 32-bit processor (0.9 DMIPS/MHz)
- 128-KB flash/16-KB SRAM or 256-KB flash/32-KB SRAM

BLUETOOTH 4.1/4.2 COMPLIANT BLUETOOTH LOW ENERGY RADIO AND PROTOCOL STACK

- -87-dBm Rx sensitivity
- -18-dBm to +7.5-dBm Tx power
- Supports Special Interest Group (SIG) adopted profiles and services
- GUI based custom profile design
- Generic Access Profile (GAP) roles

CAPSENSE™ TOUCH CONTROLLER

- Touch buttons/sliders/touchpads/proximity
- SmartSense™ Auto-Tuning

MULTIPLE INTERFACE OPTIONS

- 2 x serial communication blocks configurable as UART, I²C or SPI
- I²S for audio
- Up to 23 GPIOs

ADDITIONAL ON-BOARD RESOURCES

- 1 x 12-bit, 1 Msps SAR ADC
- 4 x Timer/Counter/PWMs

24 MHZ AND 32.768 KHZ CRYSTALS

2.4GHZ INTEGRATED OR EXTERNAL ANTENNA OPTIONS

SMT-READY

WIDE OPERATING VOLTAGE (1.9 V TO 5.5 V)

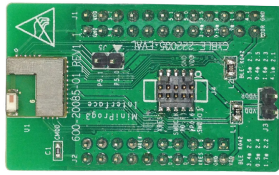
INDUSTRIAL TEMPERATURE RANGE (-40°C TO +85°C)

EZ-BLE PRoC MODULE APPLICATIONS

EZ-BLE PRoC Modules are a perfect fit for a variety of medical and industrial applications, PC accessories, toys, remote controls, gaming controllers, beacons and any other application which needs simple, Bluetooth Smart-based wireless connectivity.

EZ-BLE PRoC MODULE KITS

Cypress offers the following kits to get started with the EZ-BLE PRoC Module.



EZ-BLE PRoC Evaluation Board
(CYBLE-222005-EVAL)

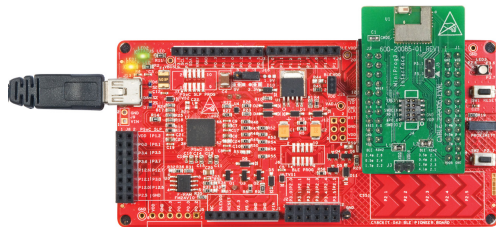


Bluetooth Low Energy Pioneer Kit
(CY8CKIT-042-BLE)

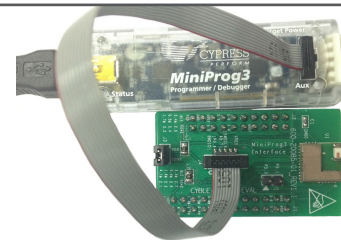


PSoC MiniProg3 Program and Debug Kit
(CY8CKIT-002)

Evaluation Boards enable application development with the EZ-BLE PRoC Module family. EZ-BLE Evaluation Boards can be used with the Bluetooth Low Energy Pioneer Kit (CY8CKIT-042-BLE) or the PSoC MiniProg3 Kit (CY8CKIT-002).



EZ-BLE PRoC Evaluation Board (CYBLE-222005-EVAL) with
BLE Pioneer Kit (CY8CKIT-042-BLE)



EZ-BLE PRoC Evaluation Board (CYBLE-222005-EVAL) with
PSoC MiniProg3 Program and Debug Kit (CY8CKIT-002)

ORDERING INFORMATION

Part Number	Flash (KB)	SRAM (KB)	BT Spec	Cap-Sense	SCB ¹	TCPWM ²	12-Bit SAR ADC	I2S	LCD	Antenna	PA/LNA ³	Operating Temperature	Package
CYBLE-022001-00	128	16	4.1	Yes	2	4	Yes	Yes	Yes	Chip	No	-40°C to +85°C	21-SMT
CYBLE-222005-00	256	32	4.1	Yes	2	4	Yes	Yes	Yes	Chip	No	-40°C to +85°C	22-SMT
CYBLE-012011-00	128	16	4.1	Yes	2	4	Yes	Yes	Yes	Trace	No	-40°C to +85°C	31-SMT
CYBLE-012012-10	128	16	N/A	Yes	2	4	Yes	Yes	Yes	Trace	No	-40°C to +85°C	31-SMT
CYBLE-212019-00	256	32	4.1	Yes	2	4	Yes	Yes	Yes	Trace	No	-40°C to +85°C	31-SMT
CYBLE-212023-10	256	32	N/A	Yes	2	4	Yes	Yes	Yes	Trace	No	-40°C to +85°C	31-SMT
CYBLE-212020-01	256	32	4.2	Yes	2	4	Yes	Yes	Yes	Trace	No	-40°C to +85°C	31-SMT
CYBLE-222014-01	256	32	4.2	Yes	2	4	Yes	Yes	Yes	Chip	No	-40°C to +85°C	22-SMT
CYBLE-212006-01	256	32	4.2	Yes	2	4	Yes	Yes	Yes	Trace	Yes	-40°C to +85°C	30-SMT
CYBLE-202007-01	256	32	4.2	Yes	2	4	Yes	Yes	Yes	External	Yes	-40°C to +85°C	30-SMT
CYBLE-202013-11	256	32	N/A	Yes	2	4	Yes	Yes	Yes	External	Yes	-40°C to +85°C	30-SMT

1. Serial communication blocks (configurable to I²C, SPI or UART)

2. Configurable timer, counter, pulse-width modulator

3. Power Amplifier/Low Noise Amplifier

To download the datasheet, buy kits and for latest information on EZ-BLE PRoC Module visit www.cypress.com/ez-blemodule

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