Please note that Cypress is an Infineon Technologies Company.
The document following this cover page is marked as “Cypress” document as this is the
company that originally developed the product. Please note that Infineon will continue to
offer the product to new and existing customers as part of the Infineon product portfolio.

Continuity of document content
The fact that Infineon offers the following product as part of the Infineon product
portfolio does not lead to any changes to this document. Future revisions will occur
when appropriate, and any changes will be set out on the document history page.

Continuity of ordering part numbers
Infineon continues to support existing part numbers. Please continue to use the
ordering part numbers listed in the datasheet for ordering.
Cypress Roadmap

Module Solutions

Q2 2020

Cypress Semiconductor Corp.
An Infineon Technologies Company
## Cypress Bluetooth Module Portfolio

<table>
<thead>
<tr>
<th>Cost</th>
<th>Size</th>
<th>External Antenna</th>
<th>XR1</th>
<th>XT2/ XR</th>
</tr>
</thead>
<tbody>
<tr>
<td>CYBLE-416045-02</td>
<td>EZ-BLE Creator BT 5.0</td>
<td>1MB Flash, 2Mbps BLE, 36 GPIOs</td>
<td>14 x 18.5 x 2.00 mm SMT</td>
<td>Mesh</td>
</tr>
<tr>
<td>CYBT-4130xx-02</td>
<td>EZ-BT WICED BT 5.0 Dual Mode</td>
<td>CYW20719/21</td>
<td>1MB Flash, 2Mbps BLE</td>
<td>12 x 16.3 x 1.70 mm SMT</td>
</tr>
<tr>
<td>CYBT-2305xx-02</td>
<td>EZ-BT WICED BT 5.0 Dual Mode</td>
<td>CYW20819</td>
<td>256KB Flash, 22 GPIOs, 2Mbps BLE</td>
<td>11 x 11 x 1.70 mm SMT</td>
</tr>
<tr>
<td>CYBT-355072-02</td>
<td>EZ-BT WICED BT 5.0 Dual Mode</td>
<td>CYW20707</td>
<td>512KB SFlash², XR</td>
<td>9 x 9 x 1.75 mm SMT</td>
</tr>
<tr>
<td>CYBLE-120xx-0x</td>
<td>EZ-BLE Creator BT 4.1/4.2</td>
<td>CYW20737</td>
<td>128/256KB Flash, 23 GPIOs</td>
<td>14 x 19 x 2.00 mm SMT</td>
</tr>
<tr>
<td>CYBLE-0130xx-00</td>
<td>EZ-BLE WICED BT 4.1</td>
<td>CYW20737</td>
<td>128KB/256KB SFlash, 16/18 GPIOs</td>
<td>14 x 19 x 2.25 mm SMT</td>
</tr>
<tr>
<td>CYBLE-430xx-02</td>
<td>EZ-BT WICED BT 5.0 Dual Mode</td>
<td>CYW20706</td>
<td>512KB SFlash, LMA³, XR</td>
<td>Ext. Antenna via RF Pad or u.FL</td>
</tr>
<tr>
<td>CYBT-260xx-02</td>
<td>EZ-BT WICED BT 5.0 Dual Mode</td>
<td>CYW20819</td>
<td>256KB Flash, PA/LNA, XR</td>
<td>Ext. Antenna via RF Pad or u.FL</td>
</tr>
<tr>
<td>CYBLE-230xx-01</td>
<td>EZ-BLE Creator BT 4.2</td>
<td>PSoC 4 BLE, 256 KB Flash, PA/LNA, XR</td>
<td>Ext. Antenna via RF Pad or u.FL</td>
<td>19 GPIOs</td>
</tr>
<tr>
<td>CYBLE-340xx-02</td>
<td>EZ-BT WICED BT 5.0 Dual Mode</td>
<td>CYW20819</td>
<td>256KB Flash, 22 GPIOs, 2Mbps BLE, XR</td>
<td>11 x 11 x 1.70 mm SMT</td>
</tr>
<tr>
<td>CYBLE-240xx-01</td>
<td>EZ-BLE WICED BT 5.0 Dual Mode</td>
<td>CYW20820</td>
<td>512KB SFlash, 24 GPIOs, XR</td>
<td>Analog MIC interface</td>
</tr>
<tr>
<td>CYBLE-21306-01</td>
<td>EZ-BLE Creator BT 4.2</td>
<td>PSoC 4 BLE</td>
<td>256 KB Flash, PAL/NA, XR</td>
<td>PCB Antenna, 19 GPIOs</td>
</tr>
</tbody>
</table>

### Features
- 1: Extended range power
- 2: Power amplifier/Low-noise amplifier
- 3: Universal digital block
- 4: Serial flash
- 5: Limited modular approval
- 6: Comparator
- 7: Timer/counter/pulse-width modulator
- 8: No shield
- 9: No certifications
- 10: Bluetooth SIG Mesh Qualified
- 11: Pre-programmed with EZ-Serial firmware

### Notes
- CYBLE modules are pre-programmed with Cypress’ EZ-Serial Firmware Platform
- CYBLE Creator Standard Features:
  - CapSense, 1MSPS ADC, LCD Driver, 4 TCPWM, DAC, 256KB
- EZ-BT/BLE WICED Standard Features:
  - Simultaneous Master/Slave, ADC, PWM, UART

### Status
- Concept
- Development
- Sampling
- Production

### Availability
- Qty
- Qty

---

**EZ-BLE/XT features include:**
- Bluetooth
- BLE/BT
- BLE creator BT 4.2
- PSoC 4 BLE
- 256 KB Flash
- PAL/NA, XR
- Opamp, CMF², UDB², 25 GPIOs
- PCB Antenna, 19 GPIOs
- 15 x 23 x 2.00 mm SMT

**XT² features include:**
- Bluetooth SIG Mesh Qualified
- Pre-programmed with EZ-Serial firmware

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### Cypress Bluetooth Module Portfolio

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<td>EZ-BLE WICED BT 4.1</td>
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<td>128KB/256KB SFlash, 16/18 GPIOs</td>
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<td>256KB Flash, PA/LNA, XR</td>
<td>Ext. Antenna via RF Pad or u.FL</td>
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<tr>
<td>CYBLE-2xx-01</td>
<td>EZ-BLE Creator BT 4.2</td>
<td>PSoC 4 BLE, 256 KB Flash, PA/LNA, XR</td>
<td>Ext. Antenna via RF Pad or u.FL</td>
<td>19 GPIOs</td>
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<td>CYBLE-3xx-02</td>
<td>EZ-BT WICED BT 5.0 Dual Mode</td>
<td>CYW20819</td>
<td>256KB Flash, 22 GPIOs, 2Mbps BLE, XR</td>
<td>11 x 11 x 1.70 mm SMT</td>
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<tr>
<td>CYBLE-24xx-01</td>
<td>EZ-BLE WICED BT 5.0 Dual Mode</td>
<td>CYW20820</td>
<td>512KB SFlash, 24 GPIOs, XR</td>
<td>Analog MIC interface</td>
</tr>
<tr>
<td>CYBLE-21xx-01</td>
<td>EZ-BLE Creator BT 4.2</td>
<td>PSoC 4 BLE</td>
<td>256 KB Flash, PAL/NA, XR</td>
<td>PCB Antenna, 19 GPIOs</td>
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### Features
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### Status
- Concept
- Development
- Sampling
- Production

### Availability
- Qty
- Qty

---

**EZ-BLE/XT features include:**
- Bluetooth
- BLE/BT
- BLE creator BT 4.2
- PSoC 4 BLE
- 256 KB Flash
- PAL/NA, XR
- Opamp, CMF², UDB², 25 GPIOs
- 9.5 x 15.4 x 1.80 mm SMT

**XT² features include:**
- Bluetooth SIG Mesh Qualified
- Pre-programmed with EZ-Serial firmware
EZ-BLE™ Creator Modules CYBLE-x220xx-0x
Space-Optimized Bluetooth Low-Energy (BLE) Modules

Applications
Connectivity, medical, industrial, PC accessories, toys, and smartphone accessories

Features

- **Qualification and Certification**
  - Bluetooth SIG QDID\(^1\), FCC, CE, KC\(^2\), MIC\(^3\), and ISED\(^4\)
- **Small Footprint**
  - 10 mm x 10 mm x 1.8 mm, 21/22-pad SMT with 16 GPIOs
- **Bluetooth Smart Connectivity with BLE 4.1 and 4.2**
  - 2.4-GHz BLE radio and baseband
  - -91-dBm Rx sensitivity, +3-dBm Tx output power
- **1.3-μA Deep Sleep, 150-nA Hibernate, 60-nA Stop Power Modes**
- **Highly Integrated Solution**
  - Two crystals, chip antenna, passives, shield
  - 128KB and 256KB flash sizes
  - Preprogrammed with EZ-Serial firmware
- **CYBLE-x220xx-EVAL Evaluation Board Interface**
  - Easy interface to CY8CKIT-042-BLE Pioneer Kit
  - Enables testing of CapSense\(^®\), buttons, GPIOs, over-the-air (OTA)

Availability
Sampling (4.1/128KB, 4.1/256KB, 4.2): Now
Production (4.1/128KB, 4.1/256KB, 4.2): Now

EZ-BLE Creator Module Family: CYBLE-x220xx-0x

<table>
<thead>
<tr>
<th>Power/Ground</th>
<th>SWD/GPIO</th>
</tr>
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<table>
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<th>Chip Antenna</th>
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<td>CYBLE-222014-01 (BT 4.2) Datasheet</td>
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<td>BLE Silicon Datasheet</td>
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<tr>
<td><strong>App Notes/Evaluation Kit User Guides</strong></td>
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<tr>
<td><em>Getting Started With EZ-BLE™ Module</em> (AN96841)</td>
</tr>
<tr>
<td>PSoC Creator</td>
</tr>
<tr>
<td>PSoC Programmer</td>
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<tr>
<td>CySmart(^7) Windows Host Emulation Tool</td>
</tr>
<tr>
<td>CySmart iOS and Android Apps</td>
</tr>
</tbody>
</table>

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\(^1\) Bluetooth Special Interest Group Qualification Design ID
\(^2\) Korea certification
\(^3\) Ministry of Internal Affairs and Communications (Japan)
\(^4\) Innovation, Science and Economic Development Canada
\(^5\) Serial wire debug communication protocol
\(^6\) VREF only available on 256KB module
\(^7\) A GUI-based software tool that installs on your PC to test and debug BLE functionality; also available in iOS and Android mobile applications
EZ-BLE Creator Modules CYBLE-x140xx-0x
BLE Modules Designed to Maximize System Integration with Integrated Analog Functionality

Applications
- Sports and fitness monitors, medical devices, wearable, electronics, home automation solutions, and game controllers

Features
- **Qualification and Certification**
  - Bluetooth SIG QDID\(^1\), FCC, CE, KC\(^2\), MIC\(^3\), and ISED\(^4\)
- **Small Footprint**
  - 11 mm x 11 mm x 1.8 mm, 32-SMT, 25 GPIOs
- **Bluetooth Smart Connectivity with Bluetooth 4.1 and 4.2**
- **Highly Integrated Solution**
  - Two crystals, trace antenna, passives, shield
  - 128KB and 256KB flash sizes, with over-the-air (OTA) firmware upgrades
  - Preprogrammed with EZ-Serial firmware
- **Programmable Analog Blocks**
  - Four opamps and one 12-bit, 1-Msps SAR\(^5\) ADC
- **Programmable Digital Blocks**
  - Four universal digital blocks (UDBs): custom digital peripherals
  - Four configurable TCPWM\(^6\) blocks: 16-bit timer, counter, or PWM
  - Two configurable serial communication blocks for I\(^2\)C/SPI/UART
- **1.3-μA Deep Sleep, 150-nA Hibernate, 60-nA Stop Power Modes**
- CYBLE-x140xx-EVAL Kit for Fast Evaluation and Development

Availability
- **Sampling (4.1/128KB, 4.1/256KB, 4.2):** Now
- **Production (4.1/128KB, 4.1/256KB, 4.2):** Now

Collateral
- **Datasheets**
  - CYBLE-014008-00 Datasheet
  - CYBLE-214009-00 Datasheet
  - CYBLE-214015-01 (BT 4.2) Datasheet
  - BLE Silicon Datasheet
- **App Notes/Evaluation Kit User Guides**
  - Getting Started With EZ-BLE™ Module (AN96841)
  - PSoC Creator
  - PSoC Programmer
  - CySmart® Windows Host Emulation Tool
  - CySmart iOS and Android Apps

---

\(^1\) Bluetooth Special Interest Group Qualification Design ID
\(^2\) Korea Certification
\(^3\) Ministry of Internal Affairs and Communications (Japan)
\(^4\) Innovation, Science and Economic Development Canada
\(^5\) Successive approximation register
\(^6\) Timer/counter/pulse-width modulator

---

PSoC4-BLE
32.768-kHz Crystal
24-MHz Crystal
Trace Antenna
SWD\(^7\)/GPIO
Analog and Digital GPIOs

---

\(^7\) Serial wire debug communication protocol
\(^8\) A GUI-based software tool that installs on your PC to test and debug BLE functionality; also available in iOS and Android mobile applications
EZ-BLE Creator Modules CYBLE-x120xx-xx
Cost-Optimized Bluetooth Low-Energy (BLE) Modules

Applications
Connectivity, medical, industrial, PC accessories, toys, and smartphone accessories

Features
- Qualification and Certification
  - Bluetooth SIG QDID\(^1\) (CYBLE-012011-00/CYBLE-212019-00), FCC, CE, KC\(^2\), MIC\(^3\), and ISED\(^4\)
- Small Footprint
  - 14.5 mm x 19.2 mm x 2.0 mm, 31-pad SMT with 23 GPIO
- Bluetooth Smart Connectivity with Bluetooth 4.1 and 4.2
  - 2.4-GHz BLE radio and baseband
  - <91-dBm Rx sensitivity, +3-dBm Tx output power
- Power Modes
  - 1.3-µA Deep Sleep, 150-nA Hibernate, and 60-nA Stop
- Highly Integrated Solution
  - Two crystals, trace antenna, passives, shield\(^5\)
  - Preprogrammed with EZ-Serial firmware
- CYBLE-x120xx-EVAL Adapter Board Interface
  - Easy interface to CY8CKIT-042-BLE Pioneer Kit
  - Enables testing of CapSense, buttons, GPIOs, over-the-air (OTA)

Availability
Sampling (4.1/128KB, 4.1/256KB, 4.2): Now
Production (4.1/128KB, 4.1/256KB, 4.2): Now

EZ-BLE Creator Module Family: CYBLE-x120xx-xx

Power/Ground

EZ-BLE Creator Module

32.768-kHz Crystal

PSOC4-BLE

24-MHz Crystal

Trace Antenna

Collateral

Datasheets
- CYBLE-012011-00 Datasheet
- CYBLE-212019-00 Datasheet
- CYBLE-212020-01 (BT 4.2) Datasheet
- BLE Silicon Datasheet

App Notes/Evaluation Kit User Guides
- Getting Started With EZ-BLE™ Module (AN96841)
- PSoC Creator
- PSoC Programmer
- CySmart™ Windows Host Emulation Tool
- CySmart iOS and Android Apps

\(^1\) Bluetooth Special Interest Group Qualification Design ID
\(^2\) Korea Certification
\(^3\) Ministry of Internal Affairs and Communications (Japan)
\(^4\) Innovation, Science and Economic Development Canada
\(^5\) CYBLE-012012-10 does not include metal shield
\(^6\) Serial wire debug communication protocol
\(^7\) A GUI-based software tool that installs on your PC to test and debug BLE functionality; also available in iOS and Android mobile applications
EZ-BLE Creator XR\textsuperscript{1} Modules CYBLE-2x20xx-x1

Cost-Optimized Bluetooth Smart Ready WICED Modules Supporting External Antenna

**Applications**
BLE connectivity, lighting, industrial, and medical

**Features**

- **Qualification and Certification**
  - Bluetooth SIG QDID\textsuperscript{2}, FCC, CE, MIC\textsuperscript{3}, KC\textsuperscript{4}, and ISED\textsuperscript{5}

- **Small Footprint**
  - 15.0 mm x 23.0 mm x 2.0 mm, 30-pad SMT with 19 GPIOs

- **Bluetooth Smart Connectivity with Bluetooth 4.2**
  - 2.4-GHz BLE radio and baseband

- **Industrial Temperature Range**
  - Operating temperature range from -40 °C to +85 °C

- **Long Range**
  - +7.5-dBm Tx output power, 400 meters line-of-sight range
  - -93-dBm Rx sensitivity

- **Highly Integrated Solution**
  - Two crystals, trace antenna (optional), power amplifier, passives
  - Preprogrammed with EZ-Serial firmware

- **CYBLE-2x20xx-EVAL Adapter Board Interface**
  - Easy interface to CY8CKIT-042-BLE Pioneer Kit
  - Enables testing of CapSense, buttons, GPIOs, over-the-air (OTA)

**Sampling:**  Now  
**Production:**  Now

**Features Diagram**

- **EZ-BLE Creator Module Family: CYBLE-2x20xx-x1**

- **Power/Ground**
- **SWD/GPIO**
- **SPI/PC/UART/ CapSense/ADC/ PWM/GPIO**

- **EZ-BLE Creator XR Module**
  - 32.768-kHz Crystal
  - 24-MHz Crystal
  - XRES
  - VREF
  - PCB Antenna

**Collateral**

**Datasheets**
- CYBLE-2x20xx-x1 (BT 4.2) Datasheet
- BLE Silicon Datasheet

**App Notes/Evaluation Kit User Guides**
- Getting Started With EZ-BLE™ Module (AN96841)
- PSoC Creator
- PSoC Programmer
- CySmart\textsuperscript{7} Windows Host Emulation Tool
- CySmart iOS and Android Apps

---

\textsuperscript{1} Extended range  
\textsuperscript{2} Bluetooth Special Interest Group Qualification Design ID  
\textsuperscript{3} Ministry of Internal Affairs and Communications (Japan)  
\textsuperscript{4} Innovation, Science and Economic Development Canada  
\textsuperscript{5} Serial wire debug communication protocol  
\textsuperscript{6} A GUI-based software tool that installs on your PC to test and debug BLE functionality; also available in iOS and Android mobile applications

Cypress Roadmap: Modules – SHNG
EZ-BLE Creator XT/XR1 Modules CYBLE-22411x-0x
Long-Range Bluetooth Low-Energy (BLE) Modules Supporting Extended Temperatures

### Applications
- Connectivity, lighting, industrial, and medical

### Features
- **Qualification and Certification**
  - Bluetooth SIG QDID\(^2\), FCC, CE, MIC\(^3\), KC\(^4\), and ISED\(^5\)
- **Small Footprint**
  - 9.5 mm x 15.4 mm x 1.8 mm, 32-pad SMT with 25 GPIOs
- **Bluetooth Smart Connectivity with Bluetooth 4.1 and 4.2**
  - 2.4-GHz BLE radio and baseband
- **Extended Industrial Temperature Range**
  - Operating temperature range from -40 °C to +105 °C
- **Long Range**
  - +9.5-dBm Tx output power, 400 meters line-of-sight range
  - -95-dBm Rx sensitivity
- **Highly Integrated Solution**
  - Two crystals, trace antenna, power amplifier, passives, shield
  - Preprogrammed with EZ-Serial firmware
- **CYBLE-22411x-EVAL Adapter Board Interface**
  - Easy interface to CY8CKIT-042-BLE Pioneer Kit
  - Enables testing of CapSense, buttons, GPIOs, over-the-air (OTA)

### Availability
- **Sampling (4.1/128KB, 4.2/256KB):** Now
- **Production (4.1/128KB, 4.2/256KB):** Now

### Collateral
- **Datasheet**
  - CYBLE-224110-00 Datasheet
  - BLE Silicon Datasheet
  - CYBLE-224116-01 (BT 4.2) Datasheet
- **App Notes/Evaluation Kit User Guides**
  - Getting Started With EZ-BLE™ Module (AN96841)
  - PSoC Creator
  - PSoC Programmer
  - CySmart
  - CySmart Windows Host Emulation Tool
  - CySmart iOS and Android Apps

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1. Extended temperature/extended range
2. Bluetooth Special Interest Group Qualification Design ID
3. Ministry of Internal Affairs and Communications (Japan)
4. Korea Certification
5. Innovation, Science and Economic Development Canada
6. Serial wire debug communication protocol
7. A GUI-based software tool that installs on your PC to test and debug BLE functionality; also available in iOS and Android mobile applications
### EZ-BLE Creator Modules CYBLE-416045-02

**Ultra-Low-Power Bluetooth Low-Energy (BLE) Module**

**Applications**

- BLE connectivity, lighting, industrial, and medical

**Features**

- **Qualification and Certification**
  - Bluetooth SIG QDID\(^1\), FCC, CE, MIC\(^2\), and ISED\(^3\)
- **Small Footprint**
  - 14.0 mm x 18.5 mm x 2.0 mm, 43-pad SMT with 36 GPIOs
- **Bluetooth Smart Connectivity with Bluetooth 5.0**
  - 2.4-GHz BLE radio and baseband
  - +4.0-dBm Tx output power, -95-dBm Rx sensitivity
- **Industrial Temperature Range**
  - Operating temperature range from -40 °C to +85 °C
- **Power Modes**
  - 5.7-mA TX (0 dBm) and 6.7-mA RX (2 Mbps) current with 3.3-V battery and internal SIMO Buck converter
  - Deep Sleep mode current with 64K SRAM retention is 7 μA with 3.3-V external supply and internal buck
  - On-chip Single-In Multiple Out (SIMO) DC-DC Buck converter, <1 μA quiescent current
- **Highly Integrated Solution**
  - One crystal, trace antenna, passives

**Availability**

- **Sampling:** Now
- **Production:** Now

---

\(^1\) Bluetooth Special Interest Group Qualification Design ID
\(^2\) Ministry of Internal Affairs and Communications (Japan)
\(^3\) Innovation, Science and Economic Development Canada

---

**Datasheets**
- CYBLE-416045-02 Datasheet
- BLE Silicon, PSoC 6 MCU: PSoC 63 with BLE Datasheet

**App Notes/Evaluation Kit User Guides**
- Getting Started With EZ-BLE™ Module (AN96841)
- PSoC Creator
- PSoC Programmer
- CySmart® Windows Host Emulation Tool
- CySmart iOS and Android Apps

---

\(^4\) Serial wire debug communication protocol
\(^5\) A GUI-based software tool that installs on your PC to test and debug BLE functionality; also available in iOS and Android mobile applications
EZ-BLE WICED Modules CYBLE-0130xx-00
Cost-Optimized Bluetooth Low-Energy (BLE) WICED Modules

Applications
Connectivity, medical, industrial, PC accessories, toys, and smartphone accessories

Features
- Qualification and Certification
  - Bluetooth SIG QDID¹, FCC, CE, MIC², and ISED³
- Small Footprint
  - 14.5 mm x 19.2 mm x 2.0 mm, 31-pad SMT with 16/18 GPIO
- Bluetooth Smart Connectivity with Bluetooth 4.1
  - 2.4-GHz BLE radio and baseband
  - -93 dBm Rx sensitivity, +4 dBm Tx output power
- Highly Integrated Solution
  - One crystal, 128KB flash (CYBLE-013025-00), PCB antenna, shield
  - Simultaneous multiple Master and Slave (1M, 3S)
  - Security engine
  - Secure over-the-air (OTA) firmware upgrade (CYBLE-013025-00)
  - Preprogrammed with EZ-Serial firmware
- CYBLE-013025-EVAL Arduino Evaluation Board

Availability
Sampling: Now
Production: Now

Collateral
Datasheets
CYBLE-0130xx-00 Datasheet
Evaluation Kit User Guide
CYBLE-013025-EVAL Evaluation Board
WICED SMART SDK (Software)
WICED SMART SDK 2.x (Quick Start Guide)

¹ Bluetooth Special Interest Group Qualification Design ID
² Ministry of Internal Affairs and Communications (Japan)
³ Innovation, Science and Economic Development Canada
EZ-BT WICED Module CYBT-343026-01
Cost-Optimized Bluetooth Smart Ready WICED Modules

**Applications**
- Bluetooth audio, POS, medical, industrial, PC accessories, toys, and smartphone accessories

**Features**
- **Qualification and Certification**
  - Bluetooth SIG QDID\(^1\), FCC, CE, MIC\(^2\), and ISED\(^3\)
- **Small Footprint**
  - 12.0 mm x 15.5 mm x 1.95 mm, 24-pad SMT with 11 GPIOs
- **Bluetooth Smart Ready with Bluetooth 5.0**
  - BR/EDR: -93.5-dBm Rx sensitivity, +12-dBm Tx output power
  - BLE: -96.5-dBm Rx Sensitivity, +9-dBm Tx output power
- **Bluetooth SIG Mesh Supported**
- **Highly Integrated Solution**
  - One crystal, 512KB flash, PCB antenna
  - Two-wire Global Coexistence Interface (GCI)
  - PCM/PS audio interface with wideband speech support
  - Secure over-the-air (OTA) firmware upgrade
  - Preprogrammed with EZ-Serial firmware

**Availability**
- Sampling: Now
- Production: Now

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\(^1\) Bluetooth Special Interest Group Qualification Design ID
\(^2\) Ministry of Internal Affairs and Communications (Japan)
\(^3\) Innovation, Science and Economic Development Canada
EZ-BT WICED Module CYBT-3330xx-02
Cost-Optimized Bluetooth Smart Ready WICED Modules Supporting External Antenna

**Applications**
Bluetooth audio, POS, medical, industrial, PC accessories, toys, and smartphone accessories

**Features**
- **Qualification and Certification**
  - Bluetooth SIG QDID\(^1\), FCC, CE, MIC\(^2\), and ISED\(^3\)
- **Small Footprint**
  - 12.0 mm x 15.5 mm x 1.95 mm, 24-pad SMT with 11 GPIOs
- **Bluetooth Smart Ready with Bluetooth 5.0**
  - BR/EDR: -93.5-dBm Rx sensitivity, +12-dBm Tx output power
  - BLE: -96.5-dBm Rx Sensitivity, +9-dBm Tx output power
- **Bluetooth SIG Mesh Supported**
- **Highly Integrated Solution**
  - One crystal, 512KB flash, PCB antenna
  - Two-wire Global Coexistence Interface (GCI)
  - PCM/PS audio interface with wideband speech support
  - Secure over-the-air (OTA) firmware upgrade
  - Preprogrammed with EZ-Serial firmware

**Availability**
- **Sampling**: Now
- **Production**: Now

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\(^1\) Bluetooth Special Interest Group Qualification Design ID
\(^2\) Ministry of Internal Affairs and Communications (Japan)
\(^3\) Innovation, Science and Economic Development Canada

**Datasheets**
- CYBT-333032-01 Datasheet
- CYBT-333047-01 Datasheet

**Evaluation Kit User Guide**
- CYBT-343047-EVAL Evaluation Board
- WICED Studio
EZ-BT WICED Module CYBT-343151-02
Cost-Optimized Bluetooth Smart Ready WICED Modules Supporting Extended Temperatures

Applications
Connectivity, lighting, industrial, and medical

Features
- Qualification and Certification
  - Bluetooth SIG QDID\(^1\), FCC, CE, MIC\(^2\), and ISED\(^3\)
- Small Footprint
  - 12.0 mm x 15.5 mm x 1.95 mm, 24-pad SMT with 11 GPIOs
  - Drop-in compatible with CYBT-343026-01
- Bluetooth Smart Ready with Bluetooth 5.0
  - BR/EDR: -93.5-dBm Rx sensitivity, +12-dBm Tx output power
  - BLE: -96.5-dBm Rx Sensitivity, +9-dBm Tx output power
- Extended Industrial Temperature Range
  - Operating temperature range from -30°C to +105°C
- Bluetooth SIG Mesh Supported
- Highly Integrated Solution
  - One crystal, 512KB flash, PCB antenna
  - Two-wire Global Coexistence Interface (GCI)
  - PCM/I\(^2\)S audio interface with wideband speech support
  - Simultaneous multiple Master and Slave
  - Secure over-the-air (OTA) firmware upgrade
  - Preprogrammed with EZ-Serial firmware

Availability
Sampling: Now
Production: Now

Datasheets
CYBT-343151-02 Datasheet
Evaluation Kit User Guide
CYBT-343026-EVAL Evaluation Board
WICED Studio

\(^1\) Bluetooth Special Interest Group Qualification Design ID
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\(^3\) Innovation, Science and Economic Development Canada
EZ-BT WICED Module CYBT-353027-02

Size-Optimized Bluetooth 5.0 WICED Module

Applications
Bluetooth speaker, POS, medical, industrial, PC accessories, toys, and smartphone accessories

Features
- Qualification and Certification
  - Bluetooth SIG QDID\(^1\), FCC, CE, MIC\(^2\), and ISED\(^3\)
- Small Footprint
  - 9 mm x 9 mm x 1.75 mm, 19-pad SMT with 8 GPIOs
- Bluetooth Smart Ready with Bluetooth 5.0
  - BR/EDR: -93.5-dBm Rx sensitivity, +12-dBm Tx output power
  - BLE: -96.5-dBm Rx sensitivity, +9-dBm Tx output power
- Bluetooth SIG Mesh Supported
- Highly Integrated Solution
  - One crystal, 512KB flash, chip antenna
  - Two-wire Global Coexistence Interface (GCI)
  - PCM/PS audio interface with wideband speech support
  - Secure over-the-air (OTA) firmware upgrade
  - Preprogrammed with EZ-Serial firmware

Availability
Sampling: Now
Production: Now

Collateral
Datasheets
CYBT-353027-02 Datasheet
Evaluation Kit User Guide
CYBT-353027-EVAL Board
WICED Studio

1 Bluetooth Special Interest Group Qualification Design ID
2 Ministry of Internal Affairs and Communications (Japan)
3 Innovation, Science and Economic Development Canada
EZ-BT WICED Module CYBT-4230xx-02
Ultra-Low-Power Size-Optimized Bluetooth 5.0 WICED Module

Applications
Bluetooth audio, mesh, sensor hubs, POS, medical, industrial, toys, and PC/smartphone accessories

Features
- **Qualification and Certification**
  - Bluetooth SIG QDID\(^1\), FCC, CE, MIC\(^2\), and ISED\(^3\)
- **Small Footprint**
  - 11 mm x 11 mm x 1.70 mm, 28-pad SMT with 17 GPIOs
- **Bluetooth Smart Ready with Bluetooth 5.0**
  - BR/EDR: -92.0-dBm Rx sensitivity, 0-dBm Tx output power
  - BLE: -95.5-dBm Rx sensitivity, 4-dBm Tx output power
- **Bluetooth SIG Mesh Supported**
- **Highly Integrated Solution**
  - One crystal, 1MB flash, chip antenna
  - Two-wire Global Coexistence Interface (GCI)
  - Simultaneous multiple Master and Slave
  - PCM/PS audio interface with wideband speech support
  - Secure over-the-air (OTA) firmware upgrade
  - Preprogrammed with EZ-Serial firmware

Availability
- **Sampling:** Now
- **Production:** Now

Collateral
- **Datasheets**
  - CYBT-4230xx-02 Datasheet
- **Evaluation Kit User Guide**
  - CYBT-423028-EVAL Board
- **WICED Studio**

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\(^1\) Bluetooth Special Interest Group Qualification Design ID
\(^2\) Ministry of Internal Affairs and Communications (Japan)
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EZ-BT WICED Module CYBT-4130xx-02
Ultra-Low-Power Cost-Optimized Bluetooth 5.0 WICED Module

Applications
Bluetooth audio, mesh, sensor hubs, POS, medical, industrial, toys, and PC/smartphone accessories

Features
- Qualification and Certification
  - Bluetooth SIG QDID\(^1\), FCC, CE, MIC\(^2\), and ISED\(^3\)
- Small Footprint
  - 12 mm x 16.3 mm x 1.70 mm, 30-pad SMT with 17 GPIOs
- Bluetooth Smart Ready with Bluetooth 5.0
  - BR/EDR: -92.0-dBm Rx sensitivity, 0-dBm Tx output power
  - BLE: -95.5-dBm Rx sensitivity, 4-dBm Tx output power
- Bluetooth SIG Mesh Supported
- Highly Integrated Solution
  - One crystal, 1MB flash, PCB antenna
  - Two-wire Global Coexistence Interface (GCI)
  - Simultaneous multiple Master and Slave
  - PCM/FS audio interface with wideband speech support
  - Secure over-the-air (OTA) firmware upgrade
  - Preprogrammed with EZ-Serial firmware

Availability
Sampling: Now
Production: Now

Collateral
Datasheets
CYBT-4130xx-02 Datasheet
Evaluation Kit User Guide
CYBT-413034-EVAL Board
WICED Studio

1 Bluetooth Special Interest Group Qualification Design ID
2 Ministry of Internal Affairs and Communications (Japan)
3 Innovation, Science and Economic Development Canada
**EZ-BT WICED Module CYBT-213043-02**

**Ultra-Low-Power Cost-Optimized Bluetooth 5.0 WICED Module**

### Applications
- Bluetooth audio, mesh, sensor hubs, POS, medical, industrial, toys, and PC/smartphone accessories

### Features
- **Qualification and Certification**
  - Bluetooth SIG QDID\(^1\), FCC, CE, MIC\(^2\), and ISED\(^3\)
- **Small Footprint**
  - 12 mm x 16.61 mm x 1.70 mm, 35-pad SMT with 22 GPIOs
- **Bluetooth Smart Ready with Bluetooth 5.0**
  - BR/EDR: -92.0-dBm Rx sensitivity, 0-dBm Tx output power
  - BLE: -95.5-dBm Rx sensitivity, 4-dBm Tx output power
- **Bluetooth SIG Mesh Supported**
- **Highly Integrated Solution**
  - One crystal, 256KB flash, PCB antenna
  - Two-wire Global Coexistence Interface (GCI)
  - Simultaneous multiple Master and Slave
  - PCM/I\(^2\)S audio interface with wideband speech support
  - Secure over-the-air (OTA) firmware upgrade
  - Preprogrammed with EZ-Serial firmware (Q4 2020)

### Availability
- **Sampling:** Now
- **Production:** Q3 2020

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\(^1\) Bluetooth Special Interest Group Qualification Design ID
\(^2\) Ministry of Internal Affairs and Communications (Japan)
\(^3\) Innovation, Science and Economic Development Canada

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**Collateral**

- **Datasheets**
  - CYBT-213043-02 Datasheet
- **Evaluation Kit User Guide**
  - CYBT-213043-MESH Kit
- **WICED Studio**
EZ-BT WICED Module CYBT-4830xx-02
Ultra-Long Range Bluetooth 5.0 WICED Module

Applications
- Bluetooth audio, mesh, sensor hubs, and industrial

Features
- Qualification and Certification
  - Bluetooth SIG QDID\(^1\), FCC, CE, MIC\(^2\), and ISED\(^3\)
- Small Footprint
  - 12.75 mm x 18.59 mm x 1.8 mm, 34-pad SMT with 15 GPIOs
- Bluetooth Smart Ready with Bluetooth 5.0
  - BLE Tx output power up to 20 dBm for U.S. (FCC)
- Bluetooth SIG Mesh Supported
- Highly Integrated Solution
  - One crystal, 1MB flash, chip antenna
  - Two-wire Global Coexistence Interface (GCI)
  - Simultaneous multiple Master and Slave
  - PCM/PS audio interface with wideband speech support
  - Secure over-the-air (OTA) firmware upgrade
  - Preprogrammed with EZ-Serial firmware

Availability
- Sampling: Now
- Production: Now

Collateral
- Datasheets
  CYBT-4830xx-02 Datasheet
- Evaluation Kit User Guide
  CYBT-483039-EVAL Board
  WICED Studio

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\(^1\) Bluetooth Special Interest Group Qualification Design ID
\(^2\) Ministry of Internal Affairs and Communications (Japan)
\(^3\) Innovation, Science and Economic Development Canada
EZ-BT WICED Module CYBT-343052-02
Long Range Low Power Bluetooth 5.0 WICED Modules

Applications
Remote, keyboard, Bluetooth audio, POS, medical, industrial, PC accessories, toys, and smartphone accessories

Features
- Qualification and Certification
  - Bluetooth SIG QDID\(^1\), FCC, CE, MIC\(^2\), and ISED\(^3\)
- Small Footprint
  - 13.31 mm x 22.4 mm x 1.95 mm, 42-pad SMT with 24 GPIOs
- Bluetooth Smart Ready with Bluetooth 5.0
  - BR: -91.5-dBm Rx sensitivity, +1-dBm Tx output power
  - BLE: -94.5-dBm Rx Sensitivity, +12-dBm Tx output power
- Bluetooth SIG Mesh Supported
- Highly Integrated Solution
  - One crystal, 512KB flash, PCB antenna
  - 1x Microphone interface
  - Programmable key-scan matrix interface, up to 8 × 20 key scanning matrix
  - 6x 16-bit PWMs
  - Simultaneous multiple Master and Slave
  - Secure over-the-air (OTA) firmware upgrade

Availability
Sampling: Now
Production: Q3 2020

1 Bluetooth Special Interest Group Qualification Design ID
2 Ministry of Internal Affairs and Communications (Japan)
3 Innovation, Science and Economic Development Canada

Datasheets
CYBT-343052-01 Datasheet
Evaluation Kit User Guide
CYBT-343052-EVAL Evaluation Board
WICED Studio
EZ-BT WICED Module CYBT-243053-02
Ultra-Low-Power Cost-Optimized Long Range Bluetooth 5.0 WICED Module

**Applications**

- Bluetooth audio, mesh, sensor hubs, POS, medical, industrial, toys, and PC/smartphone accessories

**Features**

- **Qualification and Certification**
  - Bluetooth SIG QDID\(^1\), FCC, CE, MIC\(^2\), and ISED\(^3\)
- **Small Footprint**
  - 12 mm x 16.61 mm x 1.70 mm, 35-pad SMT with 22 GPIOs
- **Bluetooth Smart Ready with Bluetooth 5.0**
  - -94.5-dBm Rx sensitivity, 10.5-dBm Tx output power
- **Bluetooth SIG Mesh Supported**
- **Highly Integrated Solution**
  - One crystal, 256KB flash, PCB antenna
  - Two-wire Global Coexistence Interface (GCI)
  - Simultaneous multiple Master and Slave
  - PCM/I\(^2\)S audio interface with wideband speech support
  - Secure over-the-air (OTA) firmware upgrade
  - Preprogrammed with EZ-Serial firmware (Q4 2020)

**Availability**

- **Sampling:** Now
- **Production:** Q3 2020

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\(^1\) Bluetooth Special Interest Group Qualification Design ID

\(^2\) Ministry of Internal Affairs and Communications (Japan)

\(^3\) Innovation, Science and Economic Development Canada
### EZ-BLE/EZ-BT Module Product Selector Guide

#### EZ-BLE Module Part Numbering Decoder

<table>
<thead>
<tr>
<th>CY</th>
<th>BT</th>
<th>X</th>
<th>X</th>
<th>X</th>
<th>X</th>
<th>X</th>
<th>N</th>
<th>X</th>
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</thead>
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- **Bluetooth Version:**
  - 0 = Bluetooth 4.1
  - 1 = Bluetooth 4.2
  - 2 = Bluetooth 5.0

- **Integration Type:**
  - 0 = Full Integration with Shield
  - 1 = No Shield

- **Device Identification #:** Unique sequential product number for each module

- **Temperature Range:**
  - 0 = Industrial
  - 1 = Extended Industrial

- **EZ-BT Module Type:**
  - 2/4 = PSoC 4 Module
  - 3 = WICED Module
  - 6 = PSoC 6 Module

- **Antenna Type:**
  - 0 = No Antenna, Standard Range
  - 1 = PCB Antenna, Standard Range
  - 2 = Chip Antenna, Standard Range
  - 3 = No Antenna, Long Range (internal PA)
  - 4 = PCB Antenna, Long Range (internal PA)
  - 5 = Chip Antenna, Long Range (internal PA)
  - 6 = No Antenna, Long Range (external PA/LNA)
  - 7 = PCB Antenna, Long Range (external PA/LNA)
  - 8 = Chip Antenna, Long Range (external PA/LNA)

- **Flash Size:**
  - 0 = 128KB
  - 2 = 256KB
  - 3 = 512KB
  - 4 = 1024KB

- **Marketing Code:**
  - BLE = BLE Only Product
  - BT = Dual-Mode BT/LE Product

- **Company ID:**
  - CY = Cypress