Wireless Modules

CONTENTS

■ROHM Wireless Modules Technology .......... P. F6
■Wi-SUN Communication Modules (Specified Low Power Radio Modules) .......... P. F6
■Wireless LAN Modules ................................ P. F6
■Bluetooth® Modules (LAPIS Semiconductor products) .......... P. F7
■IEEE802.15.4 Communication Module (LAPIS Semiconductor products) .......... P. F7
■EnOcean® Communication Modules .......... P. F8
ROHM Wireless Modules Technology

Wireless Communication

The correspondence of various wireless specifications

Wireless LAN Modules

- IEEE 802.11b/g/n compliant Wireless LAN Module
- Built-in baseband IC that made in ROHM
- Transmission power is already adjusted
- Japan radio law certified

Wi-SUN Communication Modules
(Specified Low Power Radio Modules)

- 920MHz specified low-power wireless module
- Excellent receiver sensitivity
- Built-in antenna eliminates the need for high-frequency designs
- Transmitting power pre-adjusted
- MAC address included
- Japan radio law certified

Wireless LAN Modules

- ROHM group is developing Wireless Communication devices in a broad range of fields.

Wi-SUN Communication Modules (Specified Low Power Radio Modules)

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Supply Voltage (V)</th>
<th>Operating Temperature (°C)</th>
<th>Host I/F</th>
<th>Terminal Standards</th>
<th>Onboard System LSI</th>
<th>Dimensions (mm)</th>
<th>Package</th>
</tr>
</thead>
<tbody>
<tr>
<td>BP35A1</td>
<td>2.7 to 3.6</td>
<td>−20 to +80</td>
<td>UART</td>
<td>Wi-SUN ML7396B</td>
<td></td>
<td>22.0×33.5×4.0</td>
<td>Connector joint type 0.5mm pitch, 20pin</td>
</tr>
<tr>
<td>BP35C0</td>
<td>2.6 to 3.6</td>
<td>−30 to +85</td>
<td>UART</td>
<td>Wi-SUN ML7410N</td>
<td></td>
<td>15.0×19.0×3.0</td>
<td>SMD 1.27mm pitch, 28pin</td>
</tr>
<tr>
<td>BP35C2</td>
<td>5.0 (Single power)</td>
<td>−20 to +50</td>
<td>USB</td>
<td>Wi-SUN ML7410N</td>
<td></td>
<td>21.4×40.7×8.5</td>
<td>USB Dongle</td>
</tr>
</tbody>
</table>

Wireless LAN Modules

- ROHM Wireless Modules Technology
- Wi-SUN Communication Modules (Specified Low Power Radio Modules)
- Wireless LAN Modules

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Supply Voltage (V)</th>
<th>Operating Temperature (°C)</th>
<th>Host I/F</th>
<th>Terminal Standards</th>
<th>Onboard IC</th>
<th>Dimensions (mm)</th>
<th>Package</th>
</tr>
</thead>
<tbody>
<tr>
<td>BP3580</td>
<td>3.1 to 3.5</td>
<td>−40 to +85</td>
<td>USB/SDIO/UART</td>
<td>IEEE802.11b/g/n</td>
<td>BU1805GU</td>
<td>17.0×19.0×2.3</td>
<td>Surface mount type End face through hole 1.27mm pitch, 48pin</td>
</tr>
<tr>
<td>BP3591</td>
<td>3.1 to 3.5</td>
<td>−40 to +85</td>
<td>USB/SDIO/UART</td>
<td>IEEE802.11b/g/n</td>
<td>BU1805GU</td>
<td>24.0×33.1×4.7</td>
<td>Connector joint type 0.5mm pitch, 34pin</td>
</tr>
<tr>
<td>BP3595</td>
<td>3.1 to 3.5</td>
<td>−40 to +85</td>
<td>USB/SDIO/UART</td>
<td>IEEE802.11b/g/n</td>
<td>BU1805GU</td>
<td>15.3×27.6×2.6</td>
<td>Connector joint type 0.4mm pitch, 30pin</td>
</tr>
<tr>
<td>BP3599</td>
<td>3.1 to 3.5</td>
<td>−40 to +85</td>
<td>USB/SDIO/UART</td>
<td>IEEE802.11b/g/n</td>
<td>BU1805GU</td>
<td>24.0×33.1×4.7</td>
<td>Connector joint type 0.5mm pitch, 34pin</td>
</tr>
<tr>
<td>BP359B</td>
<td>3.1 to 3.5</td>
<td>−40 to +70</td>
<td>USB/UART/SPI</td>
<td>IEEE802.11b/g/n</td>
<td>BU1805GU</td>
<td>24.0×33.1×4.7</td>
<td>Connector joint type 0.5mm pitch, 34pin</td>
</tr>
</tbody>
</table>

*Original ROHM package used.
**Bluetooth® Modules**

- Bluetooth Low Energy single mode module
- Low power consumption and the best solution for the instruments using coin type/button battery
  - TX: 6.7mA, RX: 6.2mA (MK71251 series)
- Built-in pattern antenna and RF characteristic adjusted before shipment
- Certified radio regulation: TELEC, FCC, ISED(IC), CE

---

**IEEE802.15.4 Communication Module**

- IEEE802.15.4 compliant wireless communication module
- IEEE802.15.4-2003PHY/MAC integrated (MAC is not full function)
- LAPIS Semiconductor’s RF LSI mounted
- RF characteristic adjusted before shipment
- Built-in antenna and certified TELEC

---

**Bluetooth® Low Energy Modules**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Supply Voltage(V)</th>
<th>Operating Temperature(°C)</th>
<th>Host I/F</th>
<th>Supported Standard</th>
<th>Certification</th>
<th>Module Specification</th>
<th>Flash/RAM</th>
<th>Dimension (mm)</th>
<th>Package</th>
</tr>
</thead>
<tbody>
<tr>
<td>MK71251-01</td>
<td>2.0 to 3.6</td>
<td>−20 to +75</td>
<td>UART</td>
<td>Bluetooth® core spec v4.1 (Single mode)</td>
<td>Bluetooth certification QDID:77987 (End Product) Radio law certification TELEC/FCC/R/CE</td>
<td>Role: Master/Slave</td>
<td>Flash: − RAM : 28KB</td>
<td>8.0×11.0×2.00</td>
<td>M-FG3A33-6311-0-1.05-0Y</td>
</tr>
<tr>
<td>MK71251-02</td>
<td>2.0 to 3.6</td>
<td>−20 to +75</td>
<td>UART</td>
<td>Bluetooth® core spec v4.1 (Single mode)</td>
<td>Bluetooth certification QDID:77987 (End Product) Radio law certification TELEC/FCC/R/CE</td>
<td>Role: Slave only Application: Blank</td>
<td>Flash: − RAM : 28KB</td>
<td>8.0×11.0×2.00</td>
<td>M-FG3A33-6311-0-1.05-0Y</td>
</tr>
<tr>
<td>MK71251-02A</td>
<td>2.0 to 3.6</td>
<td>−20 to +75</td>
<td>UART</td>
<td>Bluetooth® core spec v4.1 (Single mode)</td>
<td>Bluetooth certification QDID:77987 (End Product) Radio law certification TELEC/FCC/R/CE</td>
<td>Role: Slave only Application: Blank</td>
<td>Flash: − RAM : 28KB</td>
<td>8.0×11.0×2.00</td>
<td>M-FG3A33-6311-0-1.05-0Y</td>
</tr>
<tr>
<td>MK71251-02B</td>
<td>2.0 to 3.6</td>
<td>−20 to +75</td>
<td>UART</td>
<td>Bluetooth® core spec v4.1 (Single mode)</td>
<td>Bluetooth certification QDID:77987 (End Product) Radio law certification TELEC/FCC/R/CE</td>
<td>Role: Slave only Application: Blank</td>
<td>Flash: − RAM : 28KB</td>
<td>8.0×11.0×2.00</td>
<td>M-FG3A33-6311-0-1.05-0Y</td>
</tr>
</tbody>
</table>

---

**IEEE802.15.4 Communication Modules**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Supply Voltage(V)</th>
<th>Operating Temperature(°C)</th>
<th>Host I/F</th>
<th>Supported Standard</th>
<th>Certification</th>
<th>Module Specification</th>
<th>LSI</th>
<th>Dimension (mm)</th>
<th>Package</th>
</tr>
</thead>
<tbody>
<tr>
<td>MK72750A-01</td>
<td>1.8 to 3.6</td>
<td>−40 to +85</td>
<td>UART</td>
<td>IEEE802.15.4</td>
<td>Radio law certification: TELEC</td>
<td>IEEE802.15.4-2003 PHY/MAC (Not full MAC function)</td>
<td>ML7275 (LAPIS Semiconductor)</td>
<td>20.0×31.0×2.7</td>
<td>9pin Connector</td>
</tr>
</tbody>
</table>
EnOcean® Communication Modules

EnOcean® products are based on energy harvesting battery-less/wireless telecommunication technology. ROHM has become a member of EnOcean alliance which promote next generation radio telecommunication standard since 2012, and we contribute to the expansion of EnOcean® communication method.

*EnOcean® is a registered trademark of EnOcean GmbH.

**Feature**
- EnOcean® Wireless Standard (ISO/IEC 14543-3-10/11)
- Built-in antenna eliminates the need for high-frequency designs
- Japan radio law certified
- This product (928MHz frequency band) is permitted as “specified low-power radio station” in Japanese radio law.

### EnOcean® Communication Modules/Devices

<table>
<thead>
<tr>
<th>Frequency Band</th>
<th>Use Target Area</th>
<th>Products</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Energy converter for motion energy harvesting for the switch module</td>
</tr>
<tr>
<td>928MHz</td>
<td>Japan</td>
<td>ECO 200 (Switch Module) / PTM 430J (Circuit Board for Switch Module) / STM 400J (Energy Harvesting Wireless Module) / STM 431J (Temperature Sensor Module) / STM 429J / USB Cable</td>
</tr>
<tr>
<td>868MHz</td>
<td>Europe / China</td>
<td>ECO 200 (Switch Module) / PTM 430J (Circuit Board for Switch Module) / STM 400J (Energy Harvesting Wireless Module) / STM 431J (Temperature Sensor Module) / USB 400J</td>
</tr>
</tbody>
</table>


- Please choose your region products by frequency band.
- Please contact a ROHM sales representative for purchase and inquiry.
- Please refer to our EnOcean® introduction page (https://www.rohm.com/enocean) for detail.