



Modules

Wireless Modules

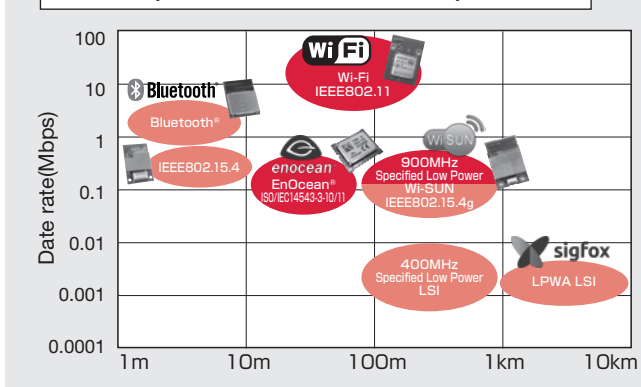
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ROHM Wireless Modules Technology

■ Wireless Communication

The correspondence of various wireless specifications



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

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

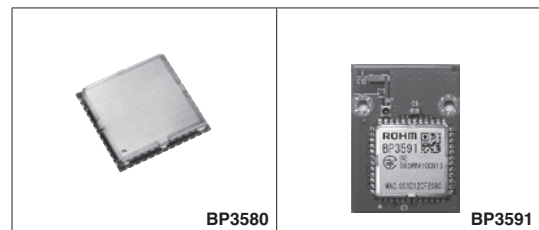


Wi-SUN Communication Modules (Specified Low Power Radio Modules)

Part No.	Supply Voltage (V)	Operating Temperature(°C)	Host I/F	Terminal Standards	Onboard System LSI	Dimensions (mm)	Package
BP35A1	2.7 to 3.6 (Single power)	-20 to +80	UART	Wi-SUN	ML7396B (LAPIS Semiconductor)	22.0×33.5×4.0	Connector joint type 0.5mm pitch, 20pin
BP35C0	2.6 to 3.6 (Single power)	-30 to +85	UART	Wi-SUN	ML7416N (LAPIS Semiconductor)	15.0×19.0×3.0	SMD 1.27mm pitch, 28pin
BP35C2	5.0 (Single power)	-20 to +50	USB	Wi-SUN	ML7416N (LAPIS Semiconductor)	21.4×49.7×8.5	USB Dongle

Wireless LAN Modules

- IEEE802.11b/g/n compliant Wireless LAN Module
- Built-in baseband IC that made in ROHM
- Transmission power is already adjusted
- Japan radio law certified



Wireless LAN Modules

Part No.	Supply Voltage (V)	Operating Temperature (°C)	Host I/F	Terminal Standards	Onboard IC	Dimensions (mm)	Package*
BP3580	3.1 to 3.5 (Single power)	-40 to +85	USB/SDIO/UART	•IEEE802.11b/g/n	BU1805GU	17.0×17.0×2.3	Surface mount type End face through hole 1.27mm pitch, 48pin
BP3591	3.1 to 3.5 (Single power)	-40 to +85	USB/SDIO/UART	•IEEE802.11b/g/n •BP3580 and chip-antenna into 1 module	BU1805GU	24.0×33.1×4.7	Connector joint type 0.5mm pitch, 34pin
BP3595	3.1 to 3.5 (Single power)	-40 to +85	USB/SDIO/UART	•IEEE802.11b/g/n •The small size type of BP3591	BU1805GU	15.3×27.6×2.6	Connector joint type 0.4mm pitch, 30pin
BP3599	3.1 to 3.5 (Single power)	-40 to +85	USB/SDIO/UART	•IEEE802.11b/g/n •Type with flash memory mounted on BP3591 •Firmware is written in a flash memory	BU1805GU	24.0×33.1×4.7	Connector joint type 0.5mm pitch, 34pin
BP359B	3.1 to 3.5 (Single power)	-40 to +70	USB/UART/SPI	•IEEE802.11b/g/n •Type with MCU and flash memory mounted on BP3591 •Firmware is written in a flash memory	BU1805GU	24.0×33.1×4.7	Connector joint type 0.5mm pitch, 34pin

*Original ROHM package used.

Bluetooth® Modules Bluetooth®

- 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

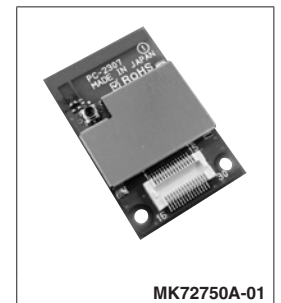


Bluetooth® Low Energy Modules (LAPIS Semiconductor products)									
Part No.	Supply Voltage(V)	Operating Temperature(°C)	Host I/F	Supported Standard	Certification	Module Specification	Flash/RAM	Dimension (mm)	Package
MK71251-01	2.0 to 3.6	-20 to +75	(BACI ^{*1})SPI (HCI ^{*2})UART	Bluetooth® core spec v4.1 (Single mode)	Bluetooth® certification QDID:77987 (End Product) Radio law certification TELEC/FCC/IC/CE	Role: Master/Slave	Flash : — RAM : 28KB	8.0×11.0×2.00	M-FLGA33-8.0X11.0-0.65-9Y
MK71251-02	2.0 to 3.6	-20 to +75	UART	Bluetooth® core spec v4.1 (Single mode)	Bluetooth® certification QDID:77987 (End Product) Radio law certification TELEC/FCC/IC/CE	Role: Slave only Application: Blank	Flash : — RAM : 28KB	8.0×11.0×2.00	M-FLGA33-8.0X11.0-0.65-9Y
MK71251-02A						Role: Slave only Application: Serial communication			
MK71251-02B						Role: Slave only Application: Beacon			
☆MK71351-01	2.0 to 3.6	-40 to +85	UART	Bluetooth® core spec v4.2 (Single mode)	Bluetooth® certification Radio law certification TELEC/FCC/ISED/CE	Role:Master/Slave Application: Blank	Flash : 128KB RAM : 128KB	9.7×11.95×2.00	TBD

*1:BACI(Bluetooth Application Controller Interface);Lapis Semiconductor proprietary host interface *2:HCI(Host Control Interface);Bluetooth standard interface ☆: Under Development(Provisional Specification)
Note: User need a confirmation and an agreement on an application and usage environment before using Bluetooth modules.
Note: Bluetooth® is a registered trademark of Bluetooth®SIG.

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



IEEE802.15.4 Communication Modules (LAPIS Semiconductor products)									
Part No.	Supply Voltage(V)	Operating Temperature(°C)	Host I/F	Supported Standard	Certification	Module Specification	LSI	Dimension (mm)	Package
MK72750A-01	1.8 to 3.6	-40 to +85	UART	IEEE802.15.4	Radio law certification: TELEC	IEEE802.15.4-2003 PHY/MAC (Not full MAC function)	ML7275 (LAPIS Semiconductor)	20.0×31.0×2.7	30pin Connector

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											
Frequency Band	Use Target Area	Products									
											
		Energy converter for motion energy harvesting (for the switch module)	Transmitter module (for switch module)	Push button multi-channel switch module	Energy harvesting wireless transceiver module	Programmable transceiver module	Energy harvesting magnet contact module	Energy harvesting temperature sensor module	Humidity sensor module	Receiver USB module	Development kit
928MHz	Japan	ECO 200	PTM 430J	PTM 210J	STM 400J	TCM 410J	STM 429J	STM 431J	HSM 100	USB 400J	EDK 400J*
868MHz	Europe·China	ECO 200	PTM 330	PTM 210	STM 300	TCM 310	STM 320	STM 331	HSM 100	USB 300	EDK 350

*Contents: PTM 210J (Switch Module) / USB 400J (USB Dongle) / PTM 430J (Circuit Board for Switch Module) / ECO 200 (Electromagnetic Induction Generator for Switch Module) / STM 431J (Temperature Sensor Module) / STM 400J (Energy Harvesting Wireless Module) / EOP 350 (Programming Board : it's for rewriting of STM 431J, STM 400J) / USB Cable ... Connection cable of EOP 350 and PC
 ●STM 400J in EDK 400J is mounted on the exclusive Substrate to connect to EOP 350

- 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/enoclean>) for detail.