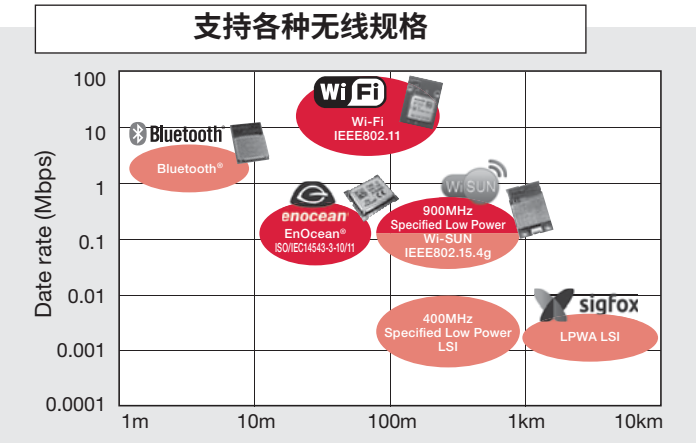
关于罗姆的无线通信技术

■无线通信



・罗姆集团进行广泛的无线通信元器件研发。

Wi-SUN通信模块 (特定小功率通信模块)

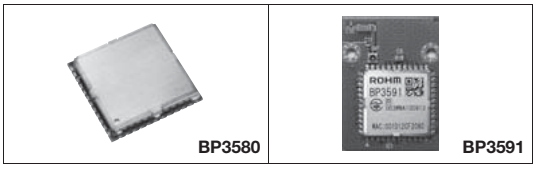
・920MHz频段 特定小功率无线模块
・业界顶级接收灵敏度
・内置天线无需高频设计
・发送功率已调整完毕
・MAC地址已写入完毕
・已获得日本电波法认证

Wi-SUN通信模块(特定小功率通信模块)

Part No.	Supply Voltage (V)	Operating Temperature (°C)	Host I/F	Terminal Standards	Onboard System LSI	Dimensions (mm)	Pakcage
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
New BP35C0-J11	2.6 to 3.6 (Single power)	−30 to +85	UART	Wi-SUN B route/Enhanced HUNcompatible	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

无线LAN模块

・IEEE802.11b/g/n对应无线LAN模块
・配备罗姆自制基带IC
・发送功率已调整
・已获得日本无线电波法认证



无线LAN模块

Part No.	Supply Voltage (V)	Operating Temperature (°C)	Host I/F	Terminal Standards	Onboard IC	Dimensions (mm)	Pakcage*
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

* 使用独创的电源模块封装。

Bluetooth®模块

- 超低消耗电流，适用于需要延长硬币电池和纽扣电池寿命的设备
  发送时：6.7mA，接收时：6.2mA(MK71251系列)
- 支持Bluetooth® low energy单通道的模块
- 内置图形天线，出货时已调整无线特性
- 已通过的电波法认证：日本电波法认证、FCC、IC、CE
- 已获得Bluetooth认证

MK71251-01/-02A

Bluetooth®模块 (LAPIS Semiconductor产品)

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	SPI (BACI*1) UART (HCI*2)	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	8.0×11.0×2.0	M-FLGA33-8.0X11.0-0.65-9Y
MK71251-02A			UART			Role: Slave only Application: Serial communication			M-FLGA33-8.0X11.0-0.65-9Y
☆MK71511-NNN	1.7 to 3.6	−40 to +85	UART SPI	Bluetooth® core spec v5.1 (Single mode)	Bluetooth® certification QDID: TBD Radio law certification TELEC/FCC/ISED/CE	Role: Master/Slave Application: Blank	Flash: 192KB RAM: 24KB	9.7×13.96×2.1	T.B.D.
☆MK71521-NNN				Bluetooth® core spec v5.0 (Single mode)	Bluetooth® certification QDID: TBD Radio law certification TELEC/FCC/ISED/CE		Flash: 512KB RAM: 64KB		

*1 BACI(Bluetooth® Application Controller Interface)：LAPIS Semiconductor独有的主机接口 *2 HCI(Host Control Interface)：Bluetooth®标准接口。 ★：研发中(暂行规格)
注1) 购买MK71251系列产品，需要进行使用设备、操作环境等的确认和协商。
注2) Bluetooth®是Bluetooth SIG的注册商标。

EnOcean®通信模块

EnOcean®通信模块是利用环境发电的无需电池的无线通信模块。
2012年罗姆半导体集团成为新一代无线通信标准推进团体“EnOcean Alliance”的发起人，
为扩大EnOcean®通信方式作出贡献。

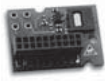
* EnOcean®是EnOcean GmbH的注册商标。

■特点

- 支持EnOcean®通信标准(ISO/IEC14543-3-10/11)
- 内置天线无需高频设计
- 已获得日本电波法认证

* 本产品已获得日本电波法认证，可作为928MHz频带特定小功率无线电台使用。

EnOcean®通信模块、元器件

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 329	STM 331	HSM 100	USB 300	EDK 350

* EDK 400J包装内物品：PTM 210J(开关模块)/USB 400J(接收用USB模块)/PTM 430J(开关模块用电路板)/ECO 200(开关模块用电磁感应发电元件)/STM 431J(温度传感器模块)/STM 400J(能量采集无线模块)/EOP 350(编程板：置换STM 431J、STM400J等固件时使用)/USB电缆(连接EOP 350和PC的电缆)
●EDK 400J内的STM 400J贴装于用于连接EOP 350的专用电路板上。

- 请选择符合该地区频段的产品。
- 关于本产品的购买、咨询，请联系本公司销售窗口。
- 关于本产品的详细内容，请浏览罗姆的EnOcean®产品介绍网页(https://www.rohm.com/enocean)。