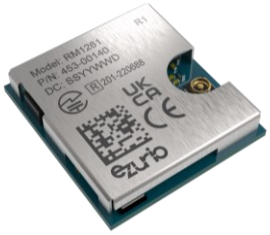
Revolutionize your LoRaWAN Design: Minimal Power Usage, Exceptional Range

The Ezurio RM126x series of modules (RM1261 and RM1262) is based on **Silicon Labs EFR32 series SoC** and the **Semtech SX126x radio.** They provide a low power, long range solution for you to easily develop your LoRaWAN implementation. The RM126x series supports LoRaWAN classes A, B and C for secure, scalable, and bi-directional communication and leverages the advantages of Silicon Labs hardware, software, and tools.
The RM126x module also includes a **LoRa Point to Point (LoRa P2P)** capability which enables you to create your own private ultra-long range radio network between two RM126x modules.

The RM126x series modules are small form factor PCB modules with a built in MHF4 connector, TCXO and a DC-DC converter.

The module is designed to operate in hosted and hostless modes:

- **Hosted Mode** – When connected to an external microcontroller, it can be simply and easily programmed with our AT command set.
- **Hostless Mode** – Utilizing the powerful **Cortex-M33** core which includes **512kB flash** and **32K of RAM**. Full support is offered by Silicon Labs' Simplicity Studio for development purposes with a range of sample applications being offered by Ezurio to simplify customer development.



- **Designed for IoT Devices –** Small 14mm x 13mm PCB module for smaller end device design.
- **Based on the EFR32 series SoC –** First LoRaWAN module based on Silicon Labs SoC, allowing Silicon Labs tools for development.
- **Powerful Core Cortex-M33**: 512 kB Flash, 32 kB RAM
- **Ultra-low power consumption –** Years of use on a single battery
- **Supported Regions:**
  - RM1261 – Europe, UK, Taiwan, Japan, India
  - RM1262 – USA, Canada, Australia, New Zealand
- **LoRa P2P Communication –C**reate your own proprietary radio.
- **Easy to use AT command set for hosted operations. -** Fully featured and extensible to suit any developer's needs
- **C Development for hostless operation –** Use Silicon Labs Simplicity Studio to write your own application using C, utilizing our radio certifications.
- **Fully featured development kits -** Everything needed to start your LoRaWAN device development.

Key Features

Based on Silicon Labs EFR32/Semtech SX126X

Our first module based on the Silicon Labs EFR32 series and Semtech SX126x radio, enabling development with Silicon Labs tools.

Ultra-Low Power Consumption

By messaging infrequently, devices can last for over a year of use on a single battery without charging or replacement.

LoRa P2P Communication

Peer-to-peer architecture allows nodes to communicate with other nodes, creating a self-contained network without a traditional gateway.

Develop Your Way – Hosted and Hostless Options

Fully featured and extensible AT command set makes it easy to write wireless applications in a familiar format and use Silicon Labs Simplicity Studio to write your own application using C, utilizing radio certifications.

Broad Regulatory Support

Support for USA, Canada, Australia, and New Zealand (RM1262) as well as Europe, UK, Taiwan, Japan, and India (RM1261).

Personal Support from Design to Manufacture

Our industry-renowned support is passionate about helping you speed your design to market.

Application Areas

- **Agriculture and Forestry**
- **Smart Cities, Utilities Monitoring, Building and Infrastructure**
- **Transportation, Supply Chain and Logistics**
- **Healthcare Monitoring**
- **Retail**

Interested in our RM126x modules?
Visit www.ezurio.com/rm126x-series

Specifications

Category	Feature	Specification
LoRa	**Specification**	Version V1.0.4 LoRa MAC Class A,B & C
	LoRaWAN® Regional Parameters	Version RP002-1.0.3
	RF Connector	MHF4
	Frequency	863 - 870 MHz, 902 – 928MHz
	LoRaWAN® Regional Parameters	US902-928, AU915-928, AS923, EU863-868, IN865-867
	Max Tx Power conducted	RM1262 – Up to 22dBm RM1261 – Up to 14dBm
	Receiver Sensitivity conducted	-125.6dBm (SF7, LoRa 125kHz, 903.0MHz) -139.2.6dBm (SF12, LoRa 125kHz, 863.1MHz) -122.7dBm (SF7, LoRa 250kHz, 869.9MHz) -130.8dBm (SF12, LoRa 500kHz, 923.3MHz) TBD dBm (FSK 50kbps, TBD MHz)
	Modulation	LoRa – Chirp Spread Spectrum and FSK 50kps
	Data Rate (bandwidths)	LoRa 125kHz, LoRa 250kHz, LoRa 500kHz, FSK 50kbps (as per RP002-1.0.3)
	TCXO High Accuracy	32MHz ±1ppm (at 25°C) Stable Frequency over temperature and duration of the LoRa, FSK packet
Host Interfaces	**Total**	16 GPIOs: SWD (3 pins), EUART (4pins), Boot pin (1 pin), GPIO, I2C, UART, SPI, Analog, Freq, PWM (8 pins)
	UART Description	Tx, Rx, CTS, RTS lines. Default: 115200, N, ,8, 1. Baud from 9,600 to 1,000000 bps
Software	**Programming**	Hosted - AT Command set Hostless – C development using Simplicity Studio
Supply Voltage	**Operating Voltage (Internally regulated DCDC or LDO)**	RM1261: 2.1V-3.6V (for 14dBm) RM1262: 3.0V-3.6V (for 22dBm); RM1262: 2.7V 20dBm (22dBm – 2dB); RM1262: 2.4V 19dBm (22dBm – 3dB); RM1262: 2.1V 16dBm (22dBm – 6dB);
Power	**Peak Current**	RM1261 LoRa TX : 25mA 14dBm RM1262 LoRa TX : 50.7mA 14dBm RM1262 LoRa TX : 107mA 22dBm RM1262, RM1261 LoRa Receive: 8.1mA (LoRa); 7.6mA (FSK); RM1262/ RM1261 Sleep: 2.6uA (EM2, Full RAM retention, RTC(LXFO)) RM1262/ RM1261 Sleep: 2.2uA (EM3, Full RAM retention, RTC(ULFRCO)) RM1262/ RM1261 Sleep: 2.1uA (EM2, Full RAM retention, RTC(LFXO), no SoC Radio RAM retention, BURTC enabled)
Physical	**Dimensions**	14mm x 13mmx 2mm
Environmental	**Operating Temperature**	-40° to +85°C
Approvals	**Regulatory**	RM1262: FCC, ISED, AS/NZS RM1261: EU, UKCA, NCC, MIC, IN
	LoRa™ Alliance	LoRa Alliance Certified

For full specifications on the RM126x modules, please see the appropriate Datasheet.

Ordering Information

Part	Description	Availability
453-00139R	Module, RM1262, SX1262, MHF4 - Tape / Reel	August 2023
453-00139C	Module, RM1262, SX1262, MHF4 – Cut Tape	August 2023
453-00139-K1	Development Kit, RM1262, SX1262, MHF4	August 2023
453-00140R	Module, RM1261, SX1261, MHF4 - Tape / Reel	August 2023
453-00140C	Module, RM1261, SX1261, MHF4 – Cut Tape	August 2023
453-00140-K1	Development Kit, RM1261, SX1261, MHF4	August 2023