

# Secure LoRa Module

## eLR100

### eLR100

eLR100 is the ultra low power secure LoRa Module. eLR100 is powered by the company own-designed IoT security MCU, MS500\*. The module provides extended security features over the conventional LoRaWAN by utilizing the secure key management, secure boot and secure storage functions.



eLR100-UL-00

### eLR100 Key Features

#### Various Regional LoRaWAN® Certified

eLR100 LoRaWAN® module is certified in four different regions such as North America, Asia/Japan, Europe, and Korea. With LoRaWAN® regional certification, eLR100 is one of a few products to cover world. As a result, eWBM eLR100 has interoperability with already deployed LoRaWAN® modules in these different regions.

#### Enhanced Security & Fast Encryption Processing Speed

eLR100 uses a hardware-based security engine to securely store sensitive user data and keys used by LoRa in secure storage inside the MCU. eLR100 has hardware-based encryption architecture that has processing speed is over 16,000 times faster than other software-based encryption architecture.

#### Easy Implementation and Control

eLR100 provides AT commands where user can easily control the module. The developer can easily implement eLR100 without changing the existing development environment such as PC or MCU.

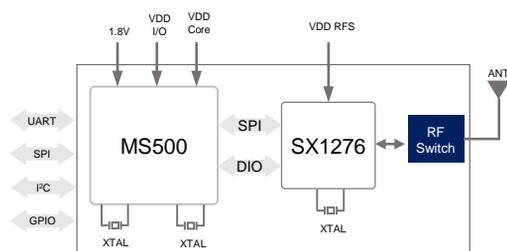
#### Large Capacity Flash Memory

eLR100 has 4MB of flash memory that can accommodate large size applications and software. eLR100 can also store user data in flash memory.

#### PKI Over LoRa

eLR100 can ensure device authentication, data integrity using Public Key Infrastructure (PKI) and increase confidentiality of data by using real-time key exchange mechanisms.

### Block Diagram



### Technical Specification

Frequency	860 ~ 930 MHz
Operating Temp. Range	-40 ~ 85 °C
Chipset	SX1276 (Semtech) + MS500* (eWBM**)
Modulation	FSK, LoRa Modulation
Antenna	External
Transmit Power	Up to +14.0 dBm
Dimension	15.3 x 22.15 x 2.5 mm
Supply Voltage(Vdc)	3.3 Vdc
Receiver Sensitivity	-135.5 dBm @1% PER, 125KHz BW, SF=12
Transmit Mode Current	47mA @14dBm Setting
Receive Mode Current	18mA @125kHz BW
Sleep Mode Current	5.2 µA
Host Interface	I <sup>2</sup> C, UART, SPI, GPIO
RF Certification	KC, CE, CB, FCC
LoRaWAN® Certification	EU 863-870MHz, US902-928MHz, KR 920-923MHz, AS 923MHz
RoHS Compliant	Yes

\*MS500 : eWBM's own security System-on-Chip(SoC). For more information, please visit <https://en.ewbm.co.kr>

\*\*eWBM is a member of the LoRa Alliance®

For more information, please contact us through [sales@ewbm.com](mailto:sales@ewbm.com)

### eLR100 Development Kit



eLR100-UL-EB

eLR100-UL-EB is a LoRa development kit using eLR100. And eLR100-UL-EB provides a variety of communication interfaces to user for a flexible use environment (SPI, I<sup>2</sup>C, UART, GPIO).