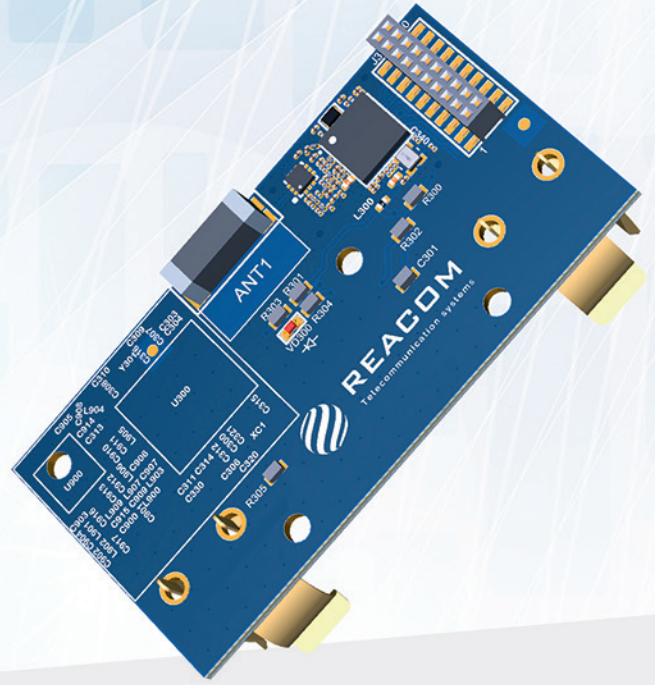


DIY BOARD



■ MAIN PURPOSE

DIY Board allow the developers to construct their own LoRaWAN endnodes.

■ PRINCIPLE OF OPERATION

DIY Board based on universal MCU. Board can get numerous of peripheral signals, process them, compose payload and send it via LoRaWAN to server.

ADVANTAGES

1. Ultra-low power usage: a fraction compared to other connected micro controllers
2. Main processor is entirely free to run the user defined small application
3. Integrated LoRa modem and antenna
4. Small and flexible PCB design to fit in customer own device

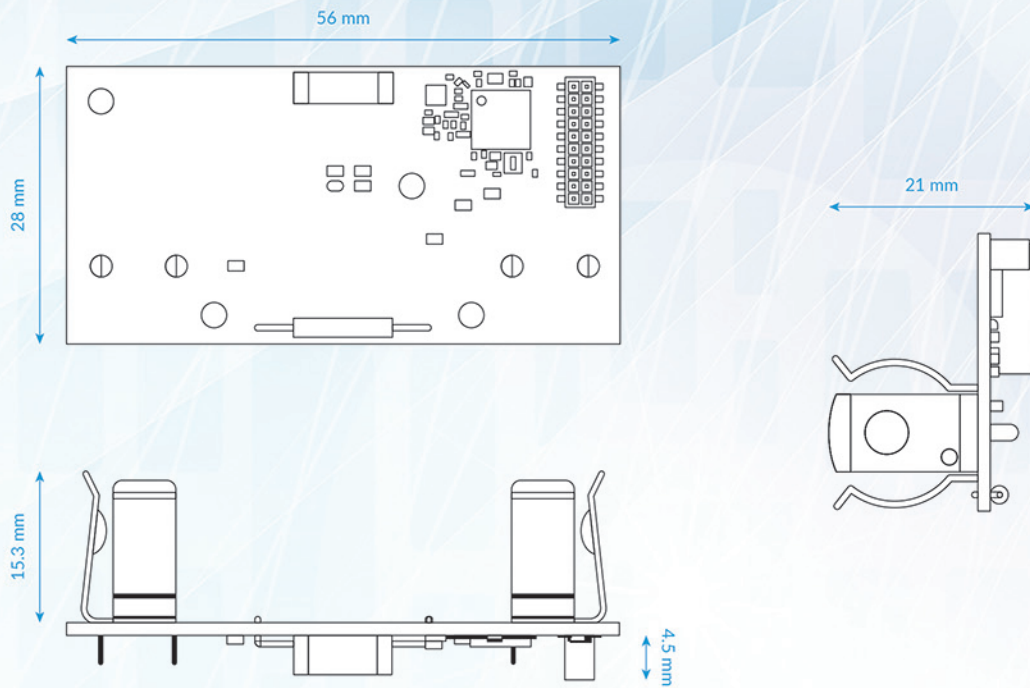
BOARD FEATURES

1. Wireless range up to 10 km*
2. LoRaWANTM Class A and Class C compatible
3. Improved interference immunity
4. Encrypt-RF™ Security (Diffie-Hellman Key Exchange+ AES-128 CBC for sensor data messages)

INTERFACES

- USART
- USB 2.0
- SPI
- I2C
- Analog ADC channels: 4, 12 bit
- Analog comparator channels: 2
- Three 16-bit Timer/Counters
- Two 24-bit and one 16-bit Timer/Counters for Control
- DMA on all peripherals
- GPIO: Up to 18
- 32-bit Real Time Counter (RTC)

*Conditions: no obstacles, direct line-of-sight.



TECHNICAL SPECIFICATIONS

ELECTRIC

Input Power.....	1x3.6V Li-SOCI 2 battery
Working Voltage.....	DC 2.4V~3.6V
Active current.....	33 mA / 3.0V
Standby Current.....	2uA/3.0V
Transmitting Current (max)....	120 mA / 3.0V
Receiving Current (max).....	11 mA / 3.0V
Low Voltage Threshold	2.4V
Battery Voltage/	
Measurement Accuracy.....	±0.1V

FREQUENCY

TX Power.....	19 dBm ± 1d Bm
Rx Sensitivity.....	-136 dBm (LoRa, Spreading Factor=7-12 Bit Rate=5470-293 bps) -121 dBm
Antenna Type.....	Build-in antenna
Data Transfer Rate.....	0.3 kbps~50 kbps

PHYSICAL

Dimension.....	56x28x21mm
Weight.....	43.8 g
Operating Temperature.....	-20° C ~ 55° C
Environment Humidity Range....	<90% RH (No condensation)
Storage Temperature.....	-40° C ~ 85° C

Communication Range.....	Up to 10 km (line-of-sight, the actual transmission distance depends on the environment)
Spread Technique.....	LoRa/FSK
Available Frequency.....	EU863-870 Other regional bands can be configured before shipment