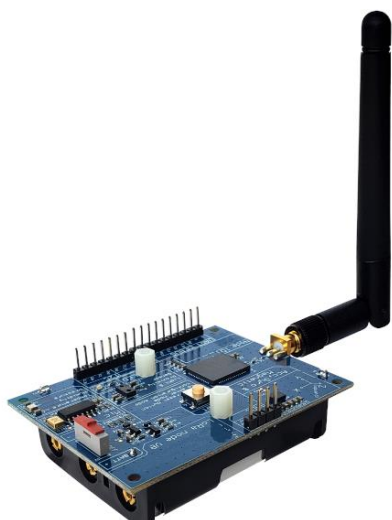


DESCRIPTION

TESNLTB is a LoRA® / LoRaWan™ sensor board endpoint designed for schools, education centres and laboratories to quickly develop proof of concepts IoT sensing applications.

The board integrates a complete RF hardware and software LoRaWan system SMA connector for antenna connection, long range external antenna, high performance low power application MCU, many controllable mems and ambient environmental sensors.



FEATURES

- Connect to LoRaWan Class A gateway
- Integrated SoC with Semtech SX1276 LORA chip, RF frontend and STM32L073Z application MCU
- Powered by 3 x AA batteries
- Accelerometer & Gyroscope sensors
- Magnetometer sensor
- Temperature & Humidity sensor
- Ambient audio noise level microphone
- Ambient light & Proximity sensor
- Pressure & Altitude sensor
- 4 x GPIOs & 2 x ADC inputs
- LED indicator controllable from gateway
- Dimension: 80mm x 53mm x 32mm (excluding antenna)

ORDERING INFORMATION

Model	Description	Region
TESNLTB-AS	LoRa / LoRaWan IoT Sensor Node, 923-925Mhz	Asia
TESNLTB-EU	LoRa / LoRaWan IoT Sensor Node, 868Mhz	Europe
TESNLTB-US	LoRa / LoRaWan IoT Sensor Node, 915Mhz	USA
TESNLTB-CN	LoRa / LoRaWan IoT Sensor Node, 479Mhz	China

PACKAGE CONTENTS

- TESNLTB LoRA® / LoRaWan™ sensor board endpoint with external antenna
- Quick Start Guide

SPECIFICATIONS

Function	Specification detail
LoRaWan	LoRaWan class A protocol Frequency: <i>(see ordering information based on model number)</i>
Accelerometer Measure Acceleration	Axis: 3 (x, y, z) Range: $\pm 2/\pm 4/\pm 8/\pm 16$ (g) Sensitivity: 0.061 – 0.732 (mg) according to selected range
Gyroscope Measure angular rate	Axis: 3 (x, y, z) Range: $\pm 245/\pm 500/\pm 2000$ (dps) Sensitivity: 8.75 – 70 (mdps) according to selected range
Magnetic Measure magnetic field	Axis: 3 (x, y, z) Range: $\pm 4/\pm 8/\pm 12/\pm 16$ (gauss) Sensitivity: 0.14 – 0.58 (mgauss) according to selected range
Temperature Measure ambient temperature	Range: 40 to +85°C Resolution: 0.01°C Accuracy: $\pm 1^\circ\text{C}$
Humidity Measure ambient humidity	Range: 0 to 100%RH Resolution: 0.008%RH Accuracy: $\pm 3\%$ RH
Mic Measure ambient noise	Range: 45dBA to 80 dBA Average noise level over sampling period Noise level trigger
Pressure & Altitude Measure pressure & Altitude	Range: 300 to 1100hPa Resolution: 0.18Pa Accuracy: $\pm 1\text{Pa}$
Ambient light Measure ambient light	Range: Up to 128klx Resolution: <100mlx
Proximity sensing Detect object proximity	1cm to 50cm
LED LED indication	Controllable from gateway
ADC x2 Analogue to digital convertor	Readable from gateway
GPIO x4 General Purpose Digital IO	Controllable from gateway
Antenna	SMA connector for external antenna connection 108mm length, 10mm diameter
Battery	3xAA, with 1 years autonomous upon agreed usage profile (example profile: LoRa uplink with measured temperature and humidity every 15minutes) *Battery not included

PIN ASSIGNMENT
