CO_2 Lora Sensor

LoraSensor CO_2

Description:

LoraSensor CO_2 1.0 is a long range LoRa Sensor. It is projected to be used in private and industrial sector and measures CO_2 with 2xAA battery power and micro USB 5V 1A power supply that ensures long duration, easy replacement and secure transmision of data.

LoraSensor CO_2 is ready to plug and play inserted in smart Italtronic Thermo 120 box, with easy wall mounting, in domestic, industrial and public environment, with elegant design.

Data transmission and management of sensor is entrusted to Dragino LoraST module, tested for any required world frequency.

Measured data are:

- CO_2 concentration (ppm) and TVOC concentration (ppb) (Ams CCS811)

LoraSensor CO_2 is ready to use, just linking a LG01 or LG02 LoRa gateway and a IoT platform (www.thethingsnetwork.org or www.creatio-control.com) and data are immediately available. It helps users to convert an idea into practical application and render Internet of Things as a reality.

It provides ultra-long range spread spectrum communication and high interference immunity, reducing to a minimum the consumption of power. It satisfied proffesional applications for wireless sensors networks as enviroment measures, smart metering, smart city, building automation.

LoraSensor CO_2 uses microprocessor STM3210x, contained in LoraST module, taking advantage of all characteristics of low comsuption and easy programming of processor Cortex. LoraSensor CO_2 is a open source product based on controller STM32Cube HAL and a lot of libraries are available for a quick development of the product.

Creatio supplies source code to customize it and a complete list of precompiled codes ready to use.

Characteristics:

- CO_2 concentration (ppm) and TVOC concentration (ppb) (Ams CCS811)
- Slot for Dragino LoraST board
- All standard frequencies 433/868/915/920 Mhz
- Open Software and hardware, development kit STM32CubeMX, compiler IAR 8.20
- Source code download from www.creatio-control.com
- BOX Thermo 120 Italtronic, best design ready to use.
- Parameters programmable from RS232 through AT commands (ABP, OTAA, KEYs, device operation mode ecc)
- Quick programmation with DIP switch for transmision intervals in operation mode.
- Battery 2xAA di long duration and easy replacement
- Micro USB 5V 1A external power supply.
- Low consumption.
- Customizable logo for big quantities.

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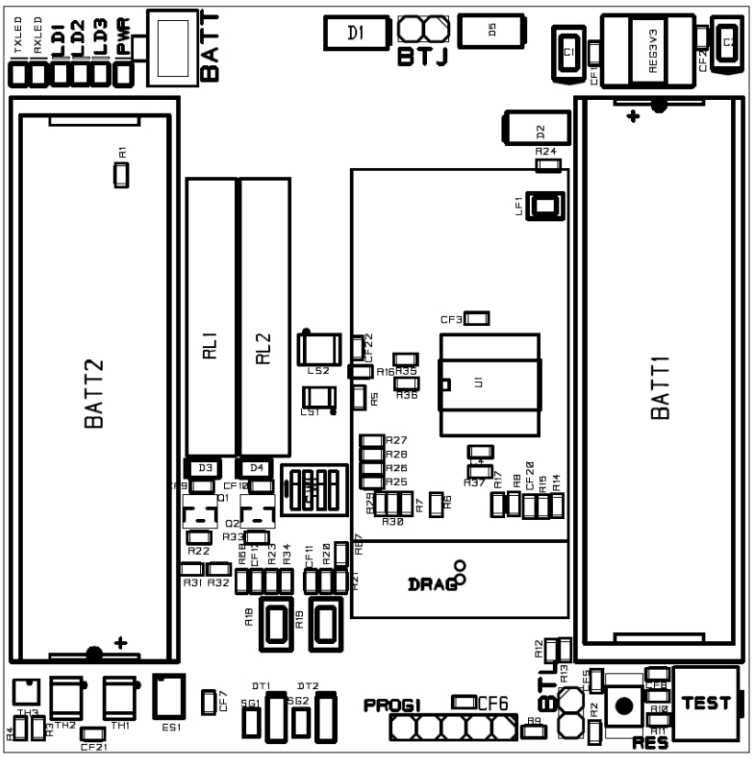
Design



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Specifications:

MCU:

· Dragino LoraST board
· MCU: STM32L072CZT6
· Flash: 192 KB
· RAM: 20KB
· EEPROM: 6 KB
· Clock speed: 32MHz

LoRa:

· LoRa Chip: SX1276/SX1278
· 68 dB maximum link budget.
· Constant RF output +20 dBm - 100mW
· +14 dBm maximum efficiency PA
· Bit rate programmable upto 300 kbps.
· High sensibility: upto -148 dBm
· Dynamic range RSSi 127 dB
· Specifications LoRaWAN 1.0.2

Characteristics DC:

· External battery: range 2.1 v - 3.6 v
· Internal battery 2xAA
· MicroUSB: 5V 1A standard AC/DC power supply
· Operation Temperature: -40ºC +85ºC

Consumption:

· Mode STOP: 3.1 uA @ 3.3v
· Mode transmision LoRa:
125mA @ 20 dBm
44mA @ 14 dBm

Battery

· Internal battery 2xAA
· Capacity: LR6 1800-2600 mAh
FR6 2700-3400 mAH
· Autodownload: < 1% / year @ 25ºC

Applications:

· Environmental conditions measurement system.
· Domotics and building automation
· Industrial control and monitoring

Dimensions:

· PCB: 75.3 x 75.3 x 15.0 mm
· Thermo 120 CSF (External power): 80.0 x 80.0 x 34.2 mm
· Thermo 120 CSF (Battery power): 80.0 x 80.0 x 25.0 mm
· Net weight: 140 g

Order Info

· LRS10-C0200-USB External Power Supply MicroUSB 5V 1A

Note: power supply AC/DC 5V 1A and batteries not included

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