Lora 2 click

From MikroElektonika Documentation

LoRa 2 click carries Microchip's RN2903 915 MHz Radio Modem compliant with regulations for use in the United States, Canada, Australia and New Zealand.

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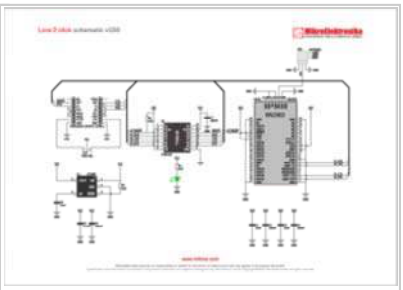
IC/Module	RN2903 (http://ww1.microchip.com/downloads/en/DeviceDoc/50002390B.pdf)
Interface	UART
Power supply	3.3V, 5V
Website	www.mikroe.com/click/lora-2 (http://www.mikroe.com/click/lora-2)

Features and usage notes



Schematic also available in PDF (http://cdn-docs.mikroe.com/images/d/d5/Lora_2_click_schemat

Study the data sheet before applying either Lora or Lora 2 click in your designs. It is your responsibility to get acquinted with relevant regulations of radio frequency use.

For example, here's what the official data sheet states about compliance with USA regulations: "the RN2903 module has received Federal Communications Commission (FCC) CFR47 Telecommunications, Part 15 Subpart C "Intentional Radiators" modular approval in accordance with Part 15.212 Modular Transmitter approval. Modular approval allows the end user to integrate the RN2903 module into a finished product without obtaining subsequent and separate FCC approvals for intentional radiation, provided no changes or modifications are made to the module circuitry."

On the other hand, in New Zealand, it would be your responsibility to prove the device is compliant. To quote from the data sheet: "RN2903 module RF transmitter test reports can be used in part to demonstrate compliance against the New Zealand "General User Radio License for Short Range Devices". New Zealand Radio communications (Radio Standards) Notice 2010 calls up the AS / NZS 4268:2008 industry standard. The RN2903 module test reports can be used as part of the product certification and compliance folder."

You can find all the relevant data on page 13 of the official data sheet.

The RN2903 module on Lora 2 click has a specified range of >15km in rural and suburban settings, and >5km coverage in urban areas. A LoRaWAN™ Class A protocol stack is embedded (bidirectional end devices), as well as an ASCII command interface accessible through UART. The high receiver sensitivity can go down to -146 dBm. LoRa click communicates with the target board MCU through the mikroBUS™ UART interface (CTS, TXD, RXD), with the addition of a Reset pin (RST) and RTS. The board is designed to use either a 3.3V or a 5V power supply. NOTE: antenna sold separately.

A version of Lora click compliant with European wireless regulations is also available. See Lora click (http://www.mikroe.com/click/lora)

Programming

LoRa process must be kept inside an infinite loop

```
while( 1 )
{
     lora_rf_process();
}
```

Code examples that demonstrate the usage of Lora 2 click with MikroElektronika hardware, written for MikroE compilers are available on Libstock (http://libstock.mikroe.com/projects/view/1861/mcp25625-click).

Resources

- Vendor's data sheet (http://ww1.microchip.com/downloads/en/DeviceDoc/50002390B.pdf)

- Learn article about Lora 2 click (http://learn.mikroe.com/lora-2)

- mikroBUS™ standard specifications (http://download.mikroe.com/documents/standards/mikrobus/mikrobus-standard-specification-v200.pdf)