Wireless protocols:

<https://www.postscapes.com/long-range-wireless-iot-protocol-lora/> - lora

<https://www.open-electronics.org/top-5-wireless-ways-to-communicate-with-your-controller/> - other options

<https://www.electronicdesign.com/industrial-automation/11-myths-about-lorawan> - why lora

<https://www.rs-online.com/designspark/5-things-to-know-about-working-with-lora>

Transmitter chip

<https://www.d6labs.com/products> - <https://www.digikey.com/product-detail/en/digital-six-labs/OEM-900-TE/1661-1003-ND/5981725> - lora chip

<https://www.multitech.com/brands/multiconnect-mdot> - lora chip

<https://www.microchip.com/wwwproducts/en/ATA8520> - sigfox chip

<https://www.microchip.com/wwwproducts/en/RN2903> - lora chip

<https://www.cooking-hacks.com/blog/send-data-at-extreme-long-range-using-lora-with-arduino-raspberry-pi-and-intel-galileo/> - lora breakout

<https://store.open-electronics.org/LoRa_SX1278>

<https://www.aliexpress.com/premium/sx1278.html>

<https://www.tindie.com/products/DORJI_COM/semtech-lora-sx1278-data-radio-modem-drf1278dm/>

<https://www.tindie.com/products/DORJI_COM/semtech-lora-sx1278-data-radio-modem-drf1278dm/>

<https://www.adafruit.com/product/3073>

Fave: <https://www.cooking-hacks.com/sx1272-lora-module-for-arduino-raspberry-pi-intel-galileo-868-mhz>

<https://www.rfsolutions.co.uk/radio-modules-c10/rf-lora-transceiver-module-915mhz-dip-package-p646>

Brain:

<https://www.raspberrypi.org/forums/viewtopic.php?t=174462> -rpi lora

<https://github.com/ttn-zh/ic880a-gateway> - rpi host

<https://www.mobilefish.com/developer/lorawan/lorawan_quickguide_tutorial.html> - lora tutorials

Tutorial:

<https://www.thethingsnetwork.org/docs/gateways/start/build.html>

Real-time clock:

<https://www.adafruit.com/product/3386>

Thailand LoRa:

AS923-925

Used in Brunei, Cambodia, Hong Kong, Indonesia, Laos, Taiwan, Thailand, Vietnam

Uplink:

923.2 - SF7BW125 to SF12BW125

923.4 - SF7BW125 to SF12BW125

923.6 - SF7BW125 to SF12BW125

923.8 - SF7BW125 to SF12BW125

924.0 - SF7BW125 to SF12BW125

924.2 - SF7BW125 to SF12BW125

924.4 - SF7BW125 to SF12BW125

924.6 - SF7BW125 to SF12BW125

924.5 - SF7BW250

924.8 - FSK

Downlink:

Uplink channels 1-10 (RX1)

923.2 - SF10BW125 (RX2)

Okay to use in US too!

902 928 This band is used in the Amateur Radio Service and the Location and Monitoring Service (LMS). Operation of unlicensed Part 15 Devices is permitted between 902 and 928 MHz.

<https://fccid.io/frequency-explorer.php?lower=923&upper=923>