Remote I/O Protocol
Client Library
Alire Crate for GNAT Ada

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Remote I/O Protocol

The **Remote I/O Protocol** is a lightweight message protocol for performing remote I/O operations. The protocol is implemented using a request/reply pattern, where the master device (*e.g.* a Linux computer) transmits an I/O request in a 64-byte message to the slave device (*e.g.* a single chip microcontroller). The slave device performs the requested I/O operation and returns an I/O response in a 64-byte message back to the master device.

The protocol is kept as simple as possible (exactly one 64-byte request message and one 64-byte response message) to allow using low end single chip microcontrollers such as the **PIC16F1455** for the slave device. Although particularly suited for USB raw HID devices, this protocol can use any transport mechanism that can reliably transmit and receive 64-byte messages.

See the **Remote I/O Protocol Specification** document for more details.

About this Crate

This crate contains a subset of the **Linux Simple I/O Library** Ada packages that are relevant for building **Remote I/O Protocol** client programs.

This crate can be built for Linux, MacOS, or Windows targets.

Web Links

Linux Simple I/O Library:
https://github.com/pmunts/libsimpleio

Remote I/O Protocol Specification:
http://git.munts.com/libsimpleio/doc/RemoteIOProtocol.pdf

Remote I/O Protocol Ada example programs:
http://git.munts.com/libsimpleio/ada/programs/remoteio

Stream Framing Protocol Specification:
http://git.munts.com/libsimpleio/doc/StreamFramingProtocol.pdf

MuntsOS Embedded Linux:
https://github.com/pmunts/muntsos

MuntsOS Embedded Linux Thin Servers (the GPIO servers include Remote I/O Protocol support):
http://repo.munts.com/muntsos/thinservers

Buy a dedicated Remote I/O Server:
https://www.tindie.com/products/pmunts/usb-flexible-io-adapter
https://www.tindie.com/products/pmunts/usb-grove-adapter

HIDAPI library for HID (Human Interface Device) device access:
https://github.com/libusb/hidapi

libusb library for USB device access:
https://github.com/libusb/libusb