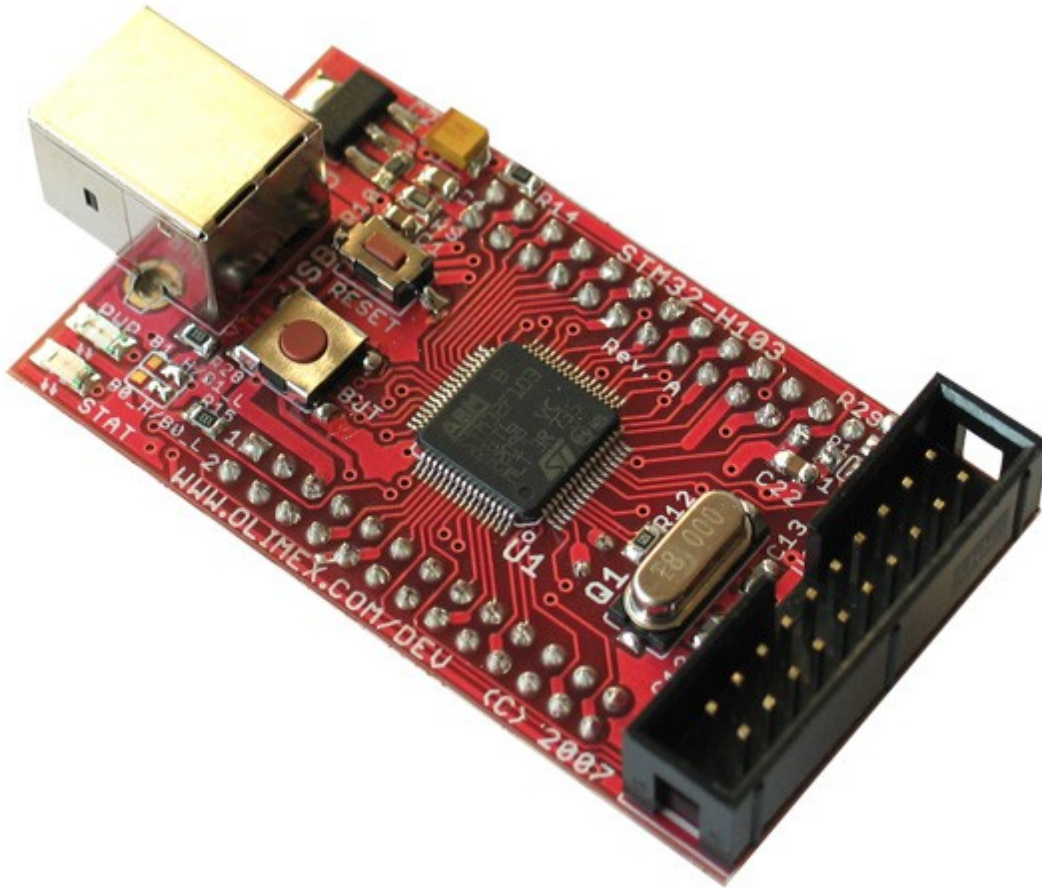# Olimex STM32-H103 board Custom HID Demo

based on STM32CubeMX generated project and LibUSB

Features:

- Simple send data from MCU and get it on PC software and visa versa
- LibUSB based PC example
- STM32CubeMX generated project. Easy to port on any STM32 MCU

What you will need

Hardware:

- STM32-H103 Board. You can buy it <u>here</u>
- Any JTAG/SWD programmer

Software:

- TrueSTUDIO for ARM Development. You can download if from <u>here</u> for free
- ST Visual Programmer, and ST-Link driver, in case of ST-Link. Also free from <u>here</u>
- MinGW GCC Compiler. From <u>here</u>. Make sure to add GCC "bin" folder in PATH

How to run demo

1. Flash "**MCU.hex**" to board
2. Connect USB and PC will detect it as HID device
3. Wait for Windows message "Your hardware is installed and ready to use" and run "**Run.bat**" from "**Binary\PC**" folder and appears window about sent and received bytes (received is the same as sent except start ID byte).

How to use in your own project

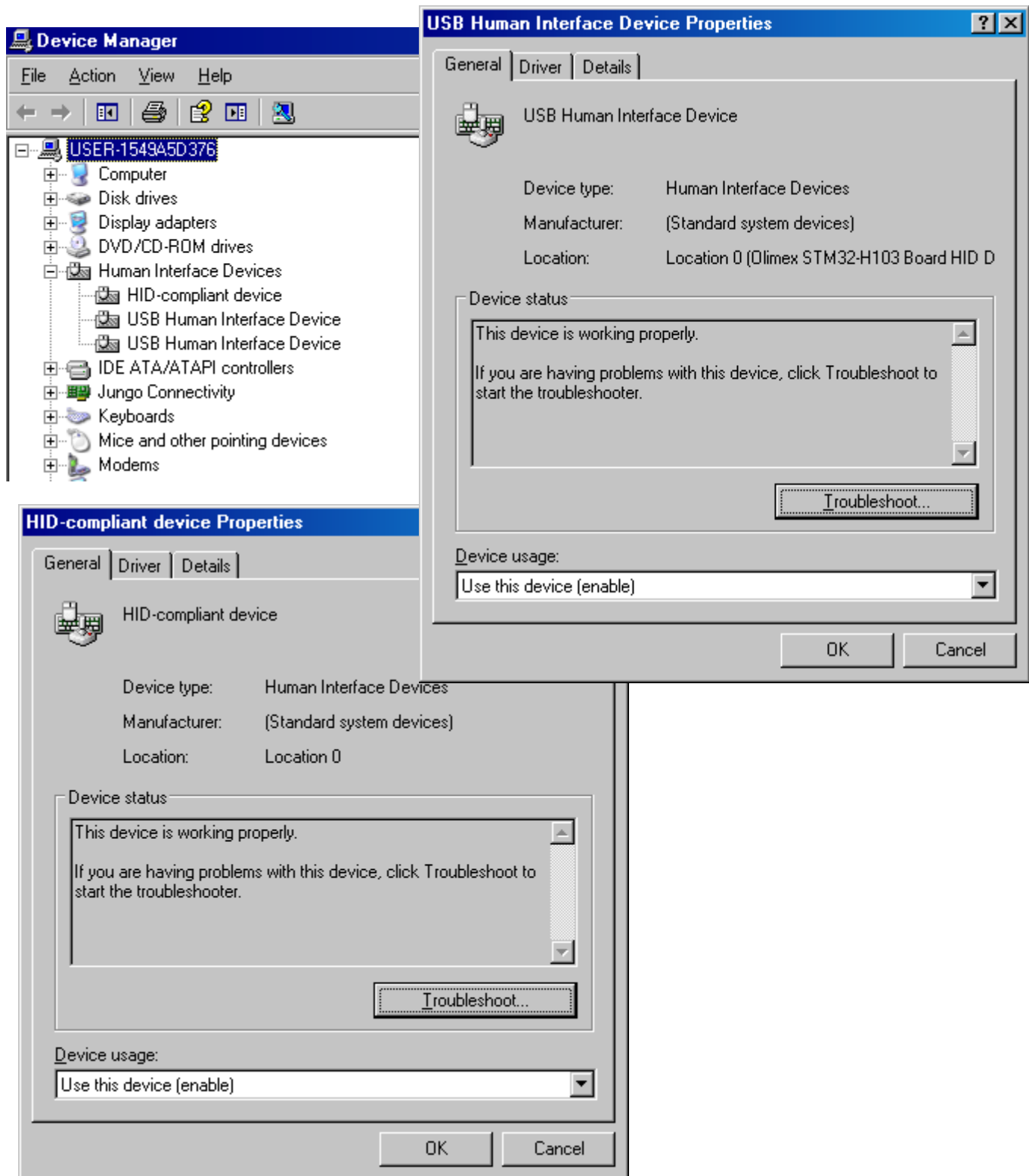## *MCU side*

1. Upon packet receive, 8byte of data and 1 byte of address (0x02 by default) is copied in "**Receive_Buffer**" array and function "**process_data**" is called. Modify this function in "**main.c**" to do what you want with received from PC bytes.
2. Use function "**USBD_CUSTOM_HID_SendReport_FS**" anywhere to send data to PC. Sent data array must be 9 bytes length in total and has 0x01 as first byte.

You probably want to modify manufacturer and device description strings, "**USBD_MANUFACTURER_STRING**" and "**USBD_PRODUCT_STRING_FS**" in "**Source\MCU\Src\usbd_desc.c**" also.

PC side

See comments in "**Source\PC\main.c**" for data sending and receiving example. Function "**exchange_input_and_output_reports_via_interrupt_transfers**" sends 9 bytes from "**data_out**" array and stores received bytes in "**data_in**" array.

Device Manager

File   Action   View   Help

- 🖥️ USER-1549A5D376
  - 🖥️ Computer
  - 💾 Disk drives
  - 🖥️ Display adapters
  - 💿 DVD/CD-ROM drives
  - 🖥️ Human Interface Devices
    - HID-compliant device
    - USB Human Interface Device
    - USB Human Interface Device
  - 🖴 IDE ATA/ATAPI controllers
  - 🖧 Jungo Connectivity
  - ⌨️ Keyboards
  - 🖱️ Mice and other pointing devices
  - 📠 Modems

USB Human Interface Device Properties   ? ✕

General | Driver | Details

USB Human Interface Device

Device type: Human Interface Devices
Manufacturer: (Standard system devices)
Location: Location 0 (Olimex STM32-H103 Board HID D

Device status

This device is working properly.

If you are having problems with this device, click Troubleshoot to start the troubleshooter.

Troubleshoot...

Device usage:

Use this device (enable)

OK   Cancel

HID-compliant device Properties

General | Driver | Details

HID-compliant device

Device type: Human Interface Devices
Manufacturer: (Standard system devices)
Location: Location 0

Device status

This device is working properly.

If you are having problems with this device, click Troubleshoot to start the troubleshooter.

Troubleshoot...

Device usage:

Use this device (enable)

OK   Cancel

This is how it appears in Device Manager

Successfull data exchange message