NE-USB USB Communication Sample Program (Linux C++)

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1. Overview

This is an outline of sample programming to control NE-USB via USB communication.

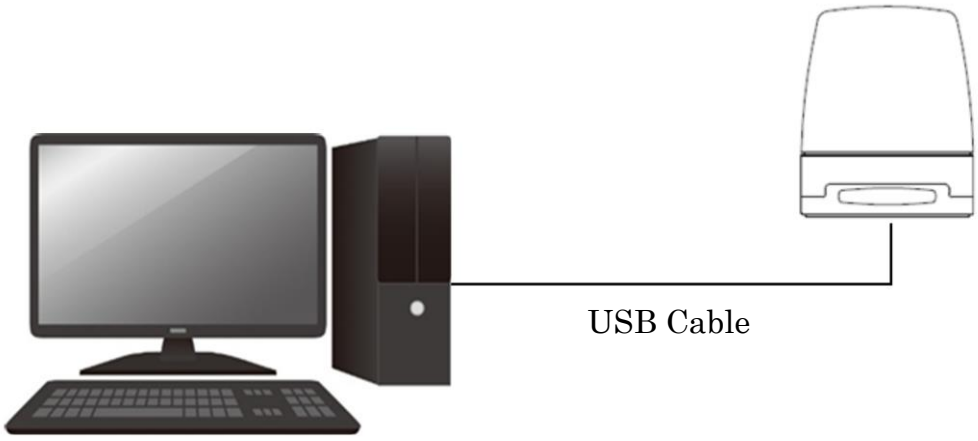
The programs are intended to control the unit using C++ without the use of DLLs provided by PATLITE.

This program is only a sample and additional design for abnormalities are necessary.。

1.1. System Overview

The system configuration diagram of this program is as follows.

This program controls one NE-USB by USB communication.



2. Development Environment

The development environment of the sample program is shown below.

2.1. Linux Environment

Development Environment		Remarks
Development OS	Ubuntu	18.04
Development Lanaguage	C++	
App Type	CUI application	
Development Tools	g++	7.5.0
Library	libusb	1.0.21-2

2.1.1. Environment Construction

・Installation of libusb

It is installed as a standard-package in Ubunut (18.04). If, it is not installed for some reason, install it with apt-get command.

```
$ sudo apt-get update
$ sudo apt-get install libusb-1.0.0
```

・Compile the sample program

Compile with the Make command using the Makefile in the project folder of the sample program.

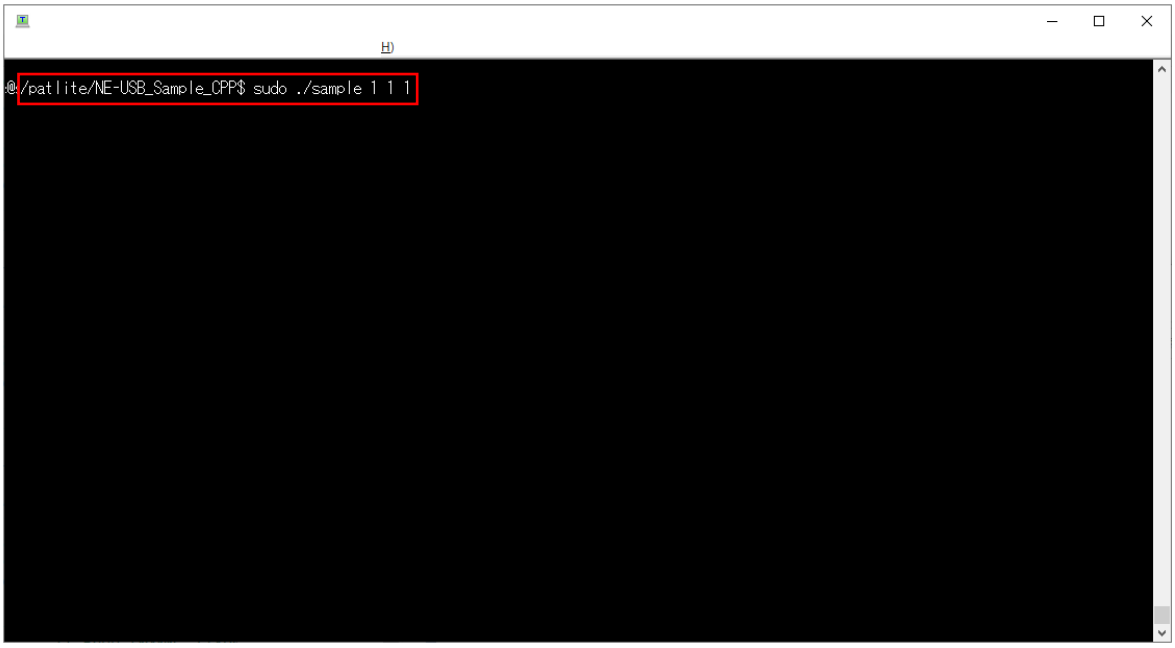
If the compilation is successful, a sample object will be created.

```
$ make
g++ main.cpp -o sample `pkg-config libusb-1.0 --libs`
$ ls
$ Makefile  main.cpp  sample
```

3. Sample Source Overview

3.1. Command Operation

At the Command Prompt, specify the command line arguments to execute commands for each operation.



3.1.1. Command List

Command Name	Description
LED control	Set LED color and LED pattern to display and activate it.
Control Alarm Pattern	Set the alarm pattern and the number of cycles
Control Alarm Volume	Set alarm volume and activate it.
Control Alarm Pattern and Volume	Set alarm pattern, number of times, and volume and activate it.
Connection Display Settings	Change the display settings when connecting.
Acquire input status of Touch sensor (Only for NE-ST-USB/NE-WT-USB)	Message display the input status of the touch sensor.
Reset	Turn off all LED units and stop the alarm.

3.1.2. LED Contro

Execute the command with the following command line arguments

No.	Commnad Line Arguments	Value
1	Command Identifier	1
2	LED Color	Off: 0 Red: 1 Green: 2 Amber: 3 Blue: 4 Purple: 5 Sky Blue: 6 White: 7 No change: 15
3	LED Pattern	Off: 0 Lit: 1 LED pattern 1: 2 LED pattern 2: 3 LED pattern 3: 4 LED pattern 4: 5 LED pattern 5: 6 LED pattern 6: 7 No change: 15

Example：sudo ./sample 1 1 1

3.1.3. Control Alarm Pattern

Execute the command with the following command line arguments.

No.	Command Line Arguments	Value
1	Command Identifier	2
2	Alarm Pattern	Stop: 0 Sounding (Continuous): 1 Sweep sound: 2 Intermittent sound: 3 Weak warning sound: 4 Strong warning sound: 5 Twinkle, Twinkle Little Star: 6 London Bridge: 7 No change: 15
3	Alarm Continuous Operation and Number of Cycles	Continuous operation: 0 Number of cycles: 1 to 1 4 No change: 15

Example: sudo ./sample 2 1 1

3.1.4. Control Alarm Volume

4. Execute the command with the following command line arguments.

No.	Command Line Arguments	Value
1	Command Identifier	3
2	Alarm Volume	Mute: 0 Volume: 1-9 Maximum volume: 10 No change: 15

Example: sudo ./sample 3 1

3.1.5 Control Alarm Pattern

Execute the command with the following command line arguments.

No.	Command Line Arguments	Value
1	Command Identifier	4
2	Alarm Pattern	Stop: 0 Sounding (Continuous): 1 Sweep sound: 2 Intermittent sound: 3 Weak warning sound: 4 Strong warning sound: 5 Twinkle, Twinkle Little Star: 6 London Bridge: 7 No change: 15
3	Alarm Continuous Operation and Number of Cycles	Continuous operation: 0 Number of cycles: 1 to 1 4 No change: 15
4	Alarm Volume	Mute: 0 Volume: 1-9 Maximum volume: 10 No change: 15

Example : sudo ./sample 4 1 3 5

3.1.6. Connection display settings

Execute the command with the following command line arguments.

No.	Command Line Arguments	Value
1	Command Identifier	5
2	Connection Display Settings	OFF: 0 ON: 1

Example : sudo ./sample 5 0

3.1.7. Acquire input status of Touch sensor（only for NE-ST-USB/NE-WT-USB）

Execute the command with the following command line arguments.

No.	Command Line Argument	Value
1	Command Identifier	6

Example：sudo ./sample 6

Output the status to Command Prompt.

・When touch sensor input status is OFF：touch sensor input = OFF

・When touch sensor input status is ON：touch sensor input = ON

3.1.8. Reset

Execute the command with the following command line arguments.

No.	Command Line Argument	Value
1	Command Identifier	7

Example：sudo ./sample 7