LR-USB USB Communication

Sample Program

(Linux Java)
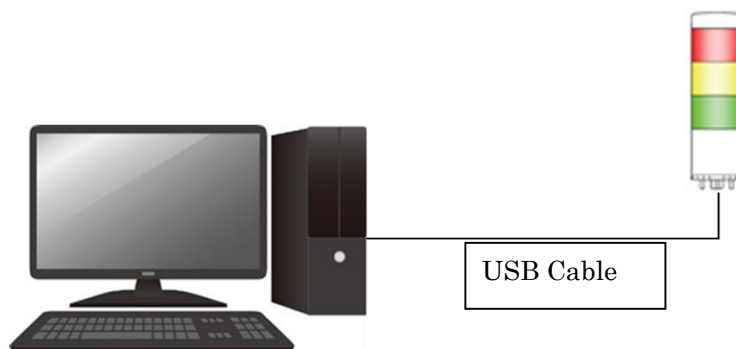
PATLITE

Contents

1. Overview

This is an outline of sample programming to control LR-USB via USB communication.
The programs are intended to control the unit using Linux Java without the use of DLLs provided by PATLITE.

1.1. System Overview

The system configuration diagram of this program is as follows.
This program controls one LR-USB by USB communication. .

USB Cable

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 Language	Java	11.0 or later
Package	usb4java	1.3.0 or later
Library	libusb,	1.0.21-2

2.1.1.　Environment

・Installation of libusb

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

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

・Java Installation

　　Install with the apt-get command.

```
$ sudo apt-get update
$ sudo apt-get install default-jdk
```

・Installation of usb4java

　　Download the package.

　　https://github.com/us b 4java/usb4java/releases

　　Place the three files in the compressed file, commons-lang3-3.8.1.jar, libusb4java-1.3.0-linux-x86-64.jar and usb4java-1.3.0.jar in the Main.java folder.

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
Control LED Unit	Set LED color and LED pattern to display and activate it.
Control Multiple LED Units	Set multiple LED colors and LED patterns to display and activate them.
Alarm Control by Alarm Pattern	Set alarm pattern and activate it.
Alarm Control by Alarm Pattern and Scale	Set alarm scale and pattern and activate it.
Reset	Turn off all LED units and stop the alarm.

3.1.2. Control LED Unit

Execute command with the following command line arguments

No.	Command Line Arguments	Value
1	Command ID	1
2	LED Unit Color	Red: 0 Amber: 1 Green: 2 Blue: 3 White: 4
3	LED Pattern	Off: 0 Lit: 1 LED pattern 1: 2 LED pattern 2: 3 LED pattern 3: 4 LED pattern 4: 5 No change: 15

Example: sudo java -cp ″commons-lang3-3.8.1.jar:libusb4java-1.3.0-linux-x86-64.jar:usb4java-1.3.0.jar″ Main.java 1 0 1

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3.1.3. Control Multiple LED Units

Execute the command with the following command line arguments

No.	Command Line Arguments	Value
1	Command ID	2
2	Red LED Pattern	Off: 0
3	Amber LED Pattern	Lit: 1
4	Green LED Pattern	LED pattern 1: 2
5	Blue LED Pattern	LED pattern 2: 3
6	White LED Pattern	LED pattern 3: 4
		LED pattern 4: 5
		Keep current settings: 15

Example: sudo java -cp "commons-lang3-3.8.1.jar:libusb4java-1.3.0-linux-x86-64.jar:usb4java-1.3.0.jar" Main.java 2 1 2 3 4 5

3.1.4. Control Alarm Pattern

Execute the command with the following command line arguments

No.	Command Line Arguments	Value
1	Command ID	3
2	Alarm Pattern	Stop: 0
		Sounding (Continuous): 1
		Alarm Pattern 1: 2
		Alarm r Pattern 2: 3
		Alarm r Pattern 3: 4
		Alarm Pattern 4: 5
		No change: 15
3	Alarm Continuous Operation and Number of Cycles	Continuous operation: 0
		Number of cycles: 1 to 15

Example: sudo java -cp "commons-lang3-3.8.1.jar:libusb4java-1.3.0-linux-x86-64.jar:usb4java-1.3.0.jar" Main.java 3 1 15

3.1.5. Control Alarm Pattern and Scale

Execute the command with the following command line arguments

No.	Command Line Arguments	Value
1	Command ID	4
2	Alarm Pattern	Stop: 0
		Sounding (Continuous): 1
		Alarm Pattern 1: 2
		Alarm Pattern 2: 3
		Alarm Pattern 3: 4

		Alarm Pattern 4: 5
		No change: 15
3	Alarm Continuous Operation and Number of Cycles	Continuous operation: 0
		Number of cycles: 1 to 15
4	Sound A Alarm Scale	Stop: 0
5	Sound B Alarm Scale	A6: 1
		B♭6: 2
		B6: 3
		C7: 4
		D♭7: 5
		D7: 6
		E♭7: 7
		E7: 8
		F7: 9
		G♭7: 10
		G7: 11
		A♭7: 12
		A7: 13
		Default value of sound A: D7: 14
		Default value of sound B: (Stop): 15

Example: sudo java –cp ″commons–lang3–3.8.1.jar:libusb4java–1.3.0–linux–x86–64.jar:usb4java–1.3.0.jar″ Main.java 4 1 15 1 13

3.1.6.　Reset

Execute the command with the following command line arguments

No.	Command Line Arguments	Value
1	Command ID	5

Example: sudo java –cp ″commons–lang3–3.8.1.jar:libusb4java–1.3.0–linux–x86–64.jar:usb4java–1.3.0.jar″ Main.java 5