LR-USB USB Communication

Sample Program

(Excel Macro VBA)
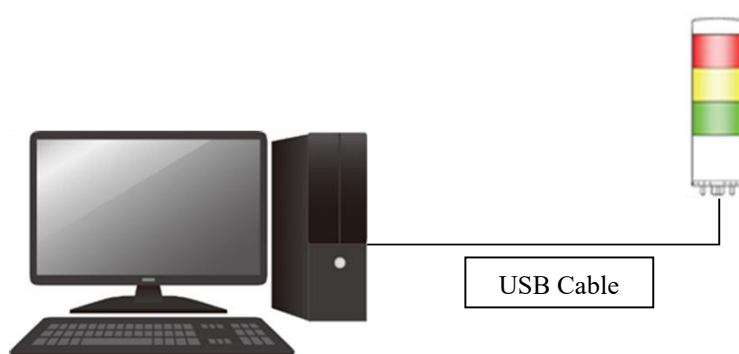
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Description

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 Excel Macro VBA without the use of DLLs provided by PATLITE.

1.1. System Overview

The system configuration diagram of this program is as follows.

The sample program controls one LR-USB by USB communication.

USB Cable

2．Development environment

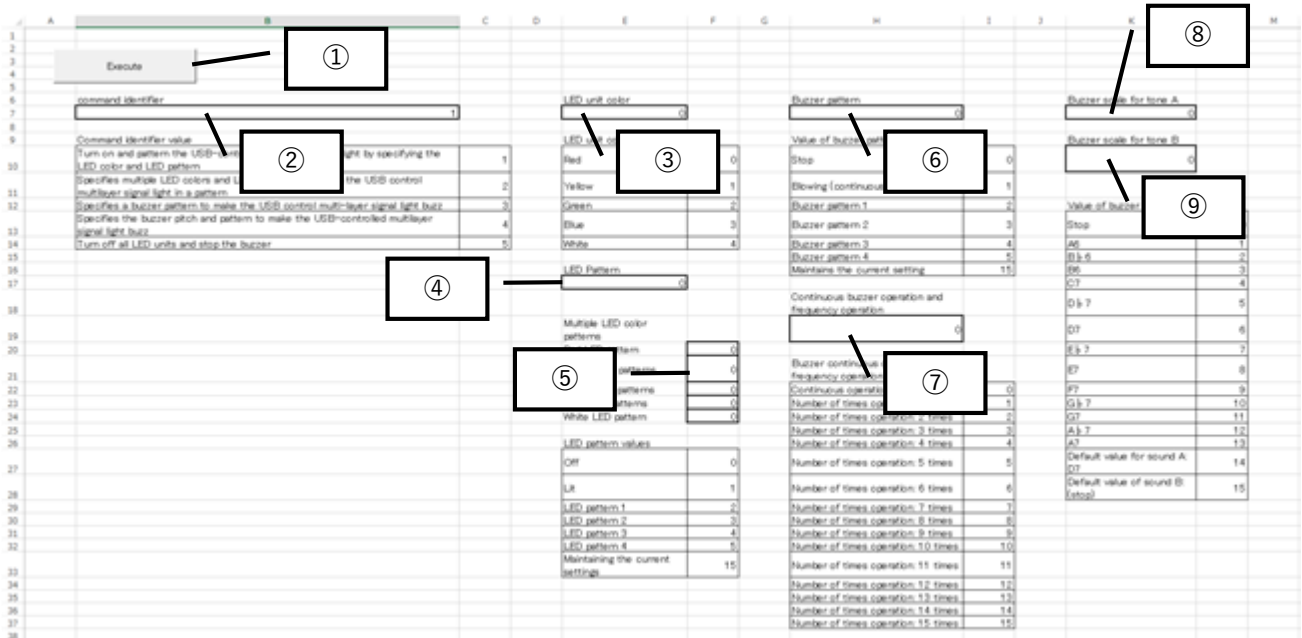The development environment of the sample program is shown below.

2.1. Windows Requirements

Development Environment		Remarks
Development OS	Windows 10	
Development Language	VBA	Excel 2013

3. Sample Source Overview

3.1. Screen Operation

In Excel, the command for each action is executed by clicking the Execute button with the identifier of the command to be executed and the parameters to be used are specified.

No.	Item Name	Description
①	Execute Button	Executes a command with the specified command identifier
②	Command Identifier	Select the command identifier to execute
③	LED Unit Color	Set the LED color to be controlled
④	LED Pattern	Set Continuous On Patterns for LEDs
⑤	Multiple LED Color Patterns	Set Continuous On Pattern for Red, Amber, Green, Blue, and White LEDs
⑥	Alarm Pattern	Set the alarm sounding pattern
⑦	Alarm Continuous Operation and Number of Cycles	Set the number of times the alarm sounds
⑧	Sound A Alarm Scale	Set Alarm scale for Sound A
⑨	Sound B Alarm Scale	Set Alarm scale for Sound B

3.1.1. Command List

Command Name	Description
Controls LED Unit	Set LED color and LED pattern to display and activate it.
Controls Several LED Units	Set multiple LED colors and LED patterns to display and activate them.
Alarm Controlled by Alarm Pattern	Set alarm pattern and activate it.

Alarm Controlled 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. LED Unit Control

Set the following values in Excel and then press the Execute button to execute the command.

No.	Configuration Parameters	Value
1	Command ID	1
2	LED Unit Color	Red: 0 Amber: 1 Green: 2 Blue: 3 White: 4
3	LED Pattern	Off: 0 Continuous On: 1 LED Pattern1: 2 LED Pattern2: 3 LED Pattern3: 4 LED Pattern4: 5 No change: 15

3.1.3. Control Several LED Units

Set the following values in Excel and then press the Execute button to execute the command.

No.	Configuration Parameters	Value
1	Command ID	2
2	Red LED Pattern	Off: 0
3	Amber LED Pattern	Continuous On: 1
4	Green LED Pattern	LED Pattern1: 2
5	Blue LED Pattern	LED Pattern2: 3
6	White LED Pattern	LED Pattern3: 4 LED Pattern4: 5 No change: 15

3.1.4. Alarm Controlled by Alarm Pattern

Set the following values in Excel and then press the Execute button to execute the command.

No.	Configuration Parameters	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

3.1.5. Alarm Control by Alarm Pattern and Scale

Set the following values in Excel and then press the Execute button to execute the command.

No.	Configuration Parameters	Value
1	Command ID	4
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
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

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3.1.6. Reset

Set the following values in Excel and then press the Execute button to execute the command.

No.	Configuration Parameters	Value
1	Command ID	5