PocketMiku Controller

1. Outline

This is a controller treating Pocket Miku as a GM sound module & playing with USB MIDI keyboard by Raspberry Pi.

Main functions are change instrument sound, set Pocket Miku voice code from Japanese Hiragana text file and change effects (reverb, chorus and variation).
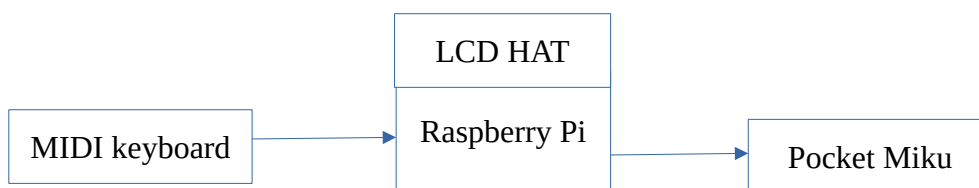
2. Hardware

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                    ┌──────────────┐
                    │   LCD HAT    │
 ┌──────────────┐   ├──────────────┤   ┌──────────────┐
 │ MIDI keyboard │──▶│ Raspberry Pi │──▶│  Pocket Miku │
 └──────────────┘   └──────────────┘   └──────────────┘
```

Figure 1

・MIDI keyboard : micro KEY [KORG]

・LCD HAT : 3.2inch RPi LCD (B) [Waveshare] : with touch interface

・Raspberry Pi : Raspberry Pi 2 Model B

・Pocket Miku : nsx-39 [GAKKEN]

3. Software

3.1 Setting

- Raspberry Pi setting by GUI through VNC

- LCD HAT setting refer to https://www.waveshare.com/wiki/3.2inch_RPi_LCD_(B)

- Python3

- pip (sudo pip3 install xxx) and other setting (sudo apt-get install, etc)

  mido, python-rtmidi, python3-tk, tkinter

- /home/pi/PocketMiku : refer to /PocketMiku

  pocketmiku_controllerXX.py :main

  mikucode_translate01.py : translate Japanese Hiragana text file to Pocket Miku voice code sub

  pocketmiku_data_set.py : data set of instruments sound, effects parameters of Pocket Miku

pocketmiku_control.sh : used Main menu of Raspberry Pi

→ Make symbolic link of pocketmiku_controller.py

as /PocketMiku/pocketmiku_controllerXX.py

- /home/pi/PocketMiku/lyric : refer to /PocketMiku/lyric

Set *.txt to sing by Pocket Miku.

3.2 Usage

1) Python

$cd PocketMiku

$chmod +x *.py (*.sh) # when only files copy

$python3 pocketmiku_controllerXX.py

* When error happened, some pip or apt install executed more.

2) shell script

$cd PocketMiku

After make symbolic link pocketmiku_controller.py from pocketmiku_controllerXX.py

$./pocketmiku_control.sh

4. Operation

After start pocketmiku_controllerXX.py (python3), "PocketMiku Controller" Window (300 x 200) appears on LCD HAT.

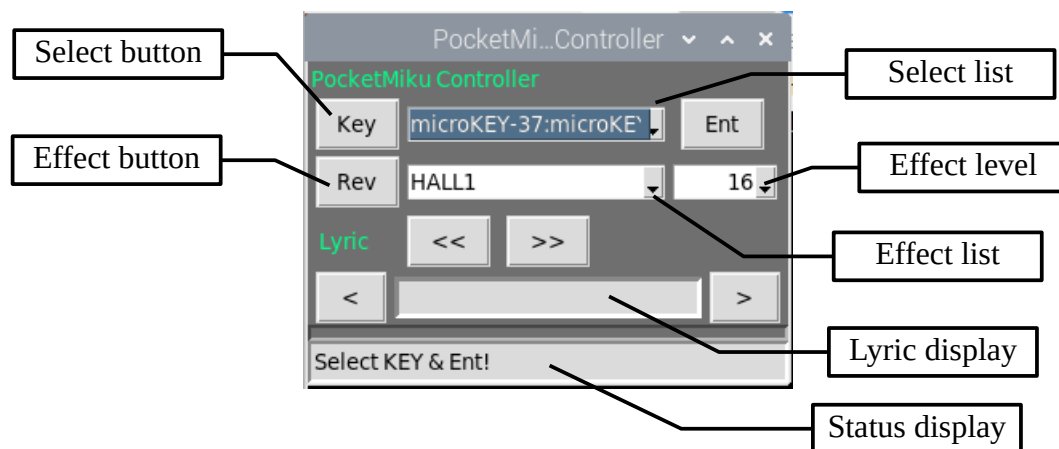GUI can operate each item (Keyboard/Instrument/Lyric, Reverb/Chorus/Variation).

Figure 4

4.1 Key/Inst/Lyr (switched by Select button)

Choose [KEY]MIDI keyboard / [Inst]Instrument sound / [Lyr] Lyric and enable the choice by [Ent].

[Select button] can switch like [Key] → [Inst] → [Lyr] → [Key] … by each click.

4.1.1 Key

Choose & enable MIDI keyboard

- Choose connected MIDI keyboard with [Select list] combo box.
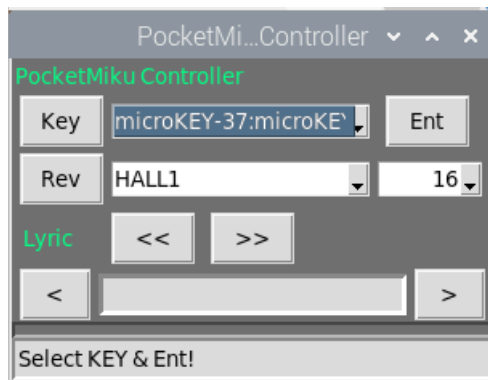
- Enable the choice with [Ent] button.

Figure 4.1.1

4.1.2 Inst

Choose & enable instrument sound

- Choose instrument sound with [Select list] combo box.

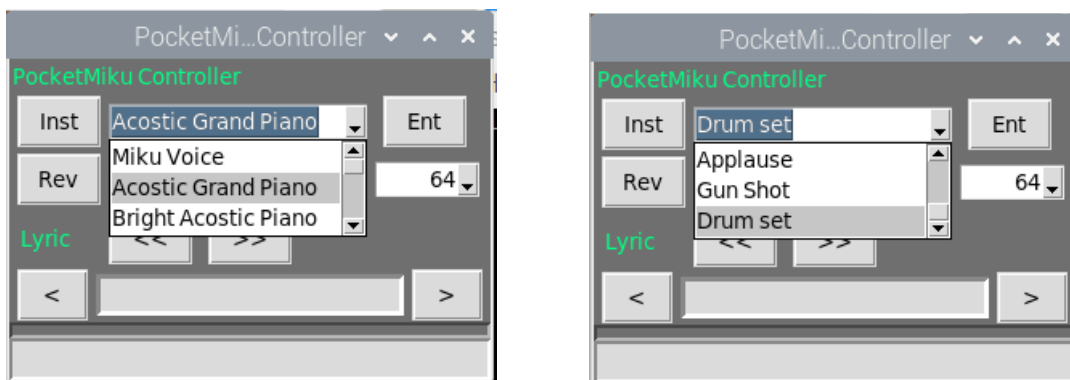- Enable the choice with [Ent] button.

Figure 4.1.2

4.1.3 Lyr

Choose & enable lyric for Miku Voice. Lyric is effective on Miku Voice selected.

- Choose lyric file in /home/pi/PocketMiku/lyric with [Select list] combo box.
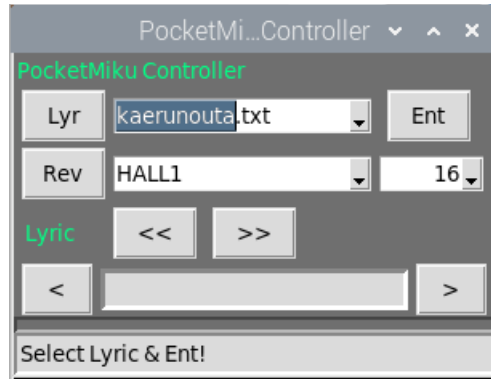
- Enable the choice with [Ent] button.

Figure 4.1.3

4.2 Rev/Cho/Var (switched by Effect button)

Choose [Rev]Reverb / [Cho]Chorus / [Var]Variation and enable the choice by [Ent].

[Effect button] can switch like [Rev] → [Cho] → [Var] → [Rev] … by each click.

4.2.1 Rev

Choose Reverb type and set effect level.

- Choose Reverb type with [Effect list] combo box.

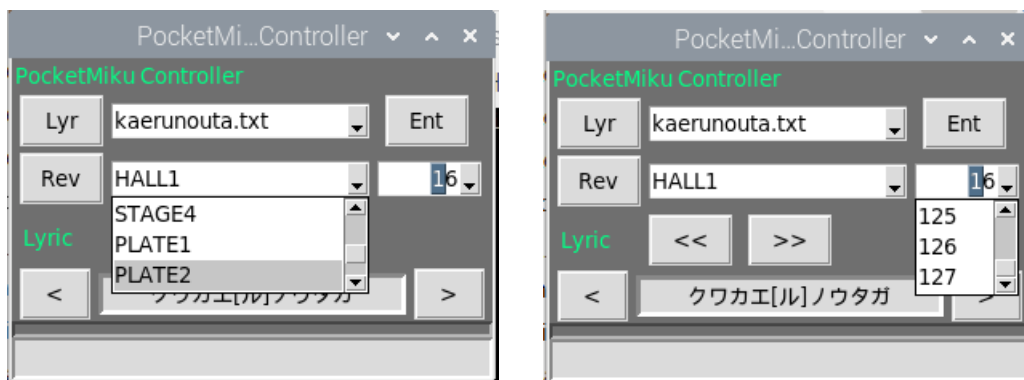- Choose effect level with [Effect level] combo box.

Figure 4.2.1

4.2.2 Cho

Choose Chorus type and set effect level.

- Choose Chorus type with [Effect list] combo box.

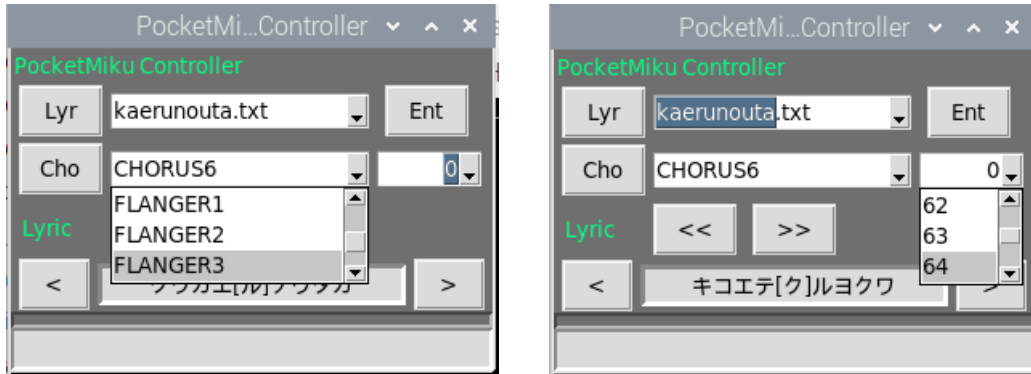- Choose effect level with [Effect level] combo box.

Figure 4.2.2

4.2.3 Var

Choose Variation type and set effect level.

- Choose Variation type with [Effect list] combo box.
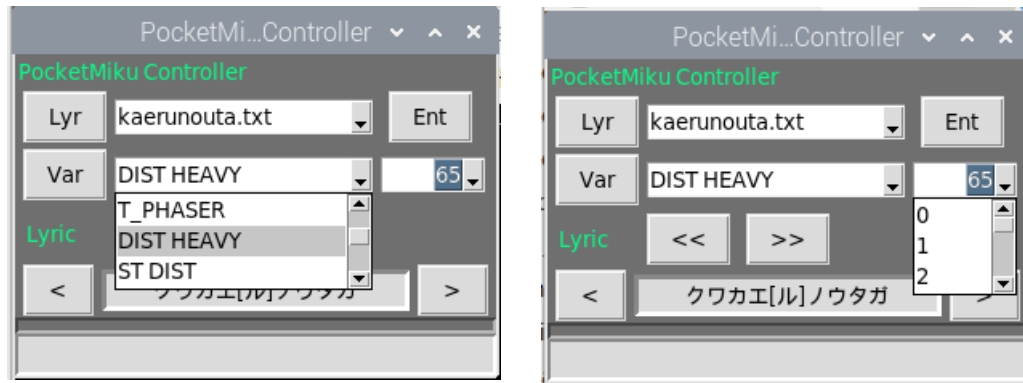
- Choose effect level with [Effect level] combo box.

Figure 4.2.3

4.3 Lyric

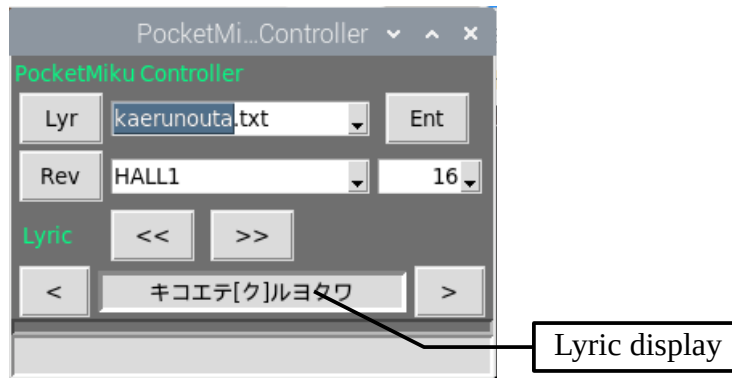Lyric area is effective on Miku Voice selected.

Figure 4.3

4.3.1 Lyric display

Display lyric along playing with MIDI keyboard. The character enclosed in [] is sounded next.

4.3.2 [<] button

[<] button moves next character back by one character in the lyric.

4.3.3 [>] button

[>] button moves next character forward by one character in the lyric.

4.3.4 [<<] button

[<<] button moves next character back to top of the line or the previous line in the lyric.

4.3.5 [>>] button

[>>] button moves next character forward to the next line in the lyric.

4.4 Status display

Display status.

5. Reference

- 歌うキーボード　ポケット・ミク　公式ブック [学研プラス]

- YMW820 アプリケーションノート YMW820(NSX-1) MIDI 仕様書 Rev.1.0

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