



# MAmidiMEmo

## The Virtual S/W Synthesizer

User's Manual - Rev 0.5.1

# Install & Basic Settings

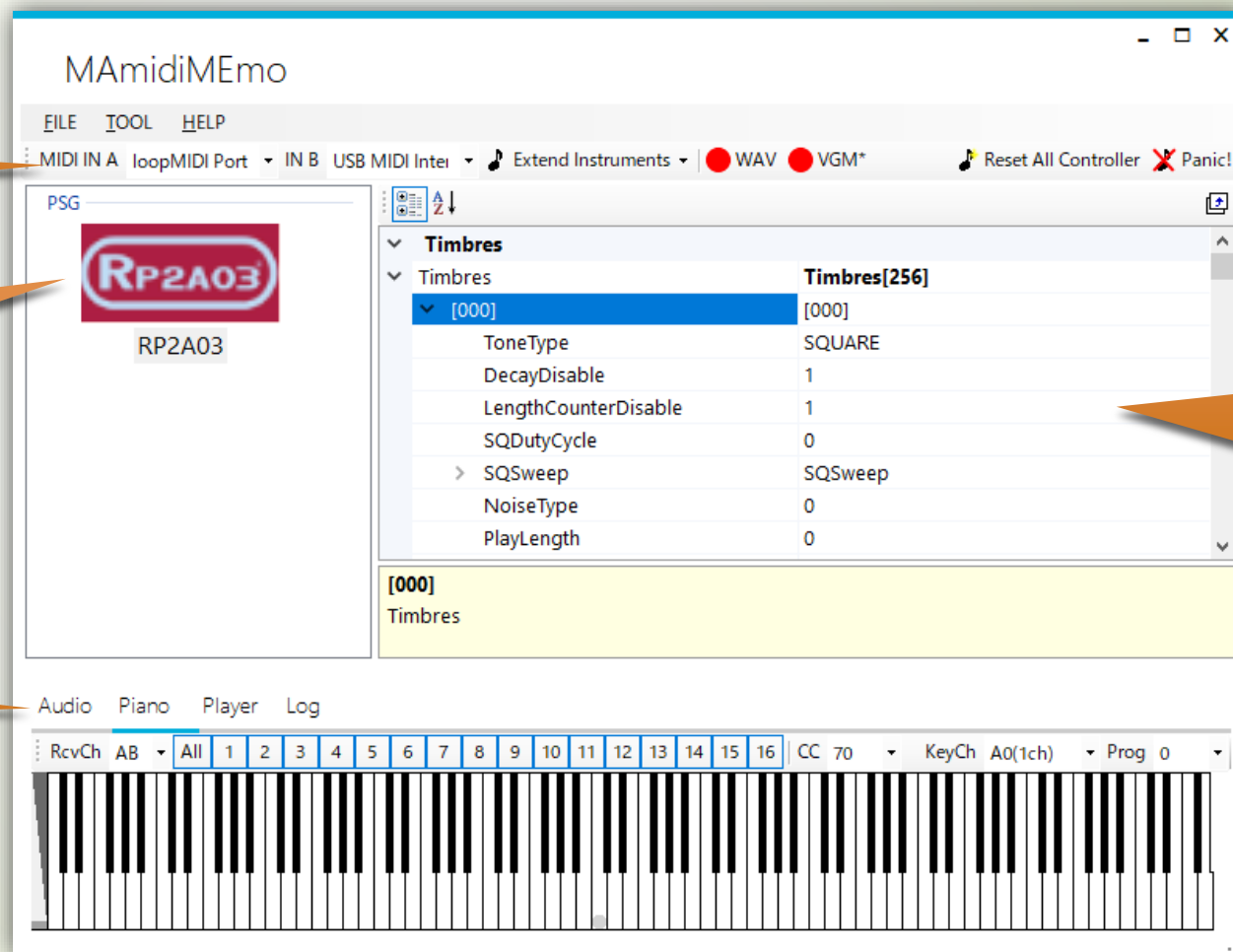
- Install
  - Extract the downloaded zip file.
  - Click MAmidiMEmo.exe
  - Will open the MAmidiMEmo. If not, please check the followings.
    - **.NET Framework 4.7 or later** installed on your PC.
    - **VC++ 2012 Runtime** installed on your PC.
    - (Execute "DelZoneID.ps1 " to remove "Zone.Identifier" flag.)

# Window Overview

MIDI IN A,B  
Selector

Active  
Chips  
(see next)

Tools

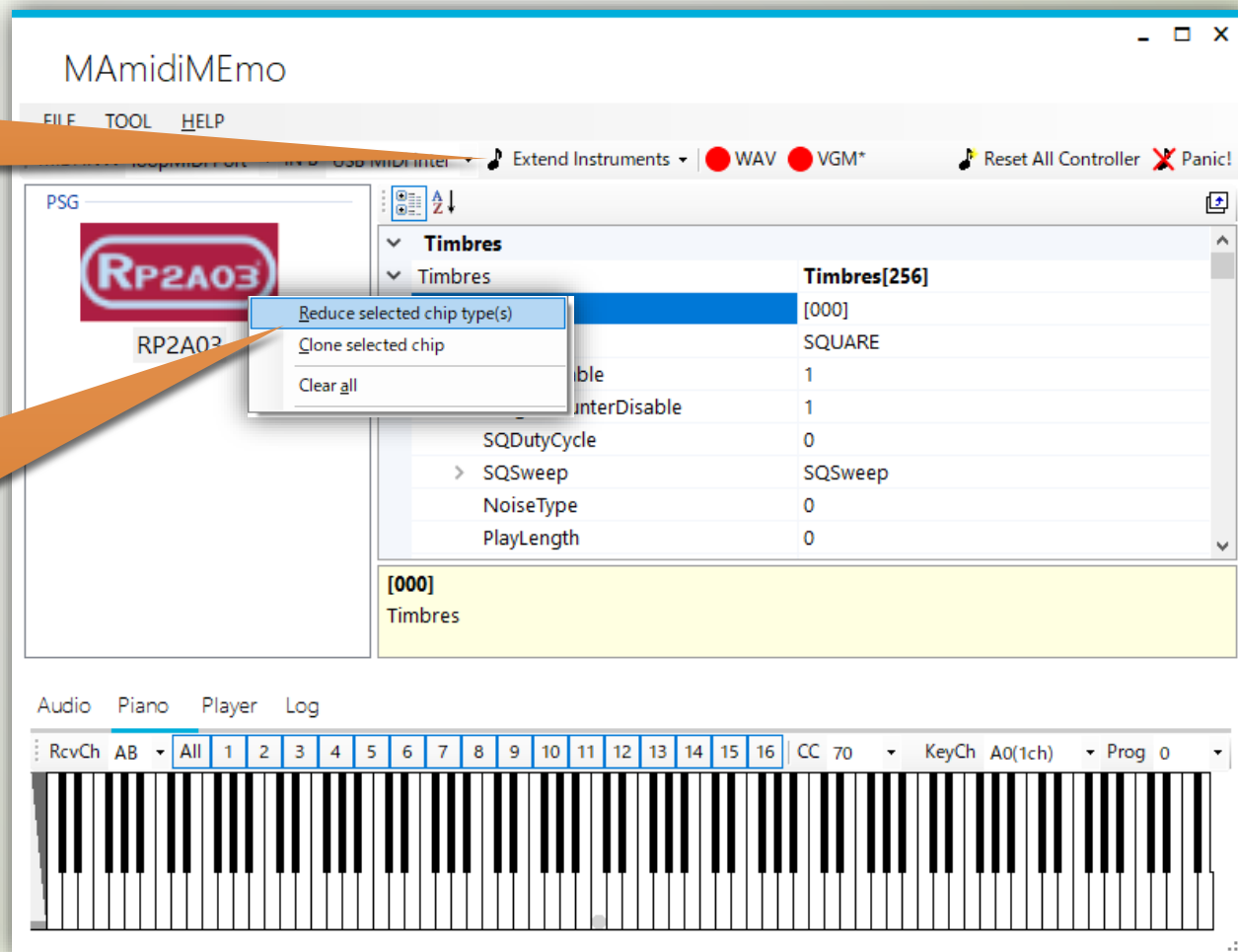


Chip  
Parameter  
Editor  
(see next)

# Add and Remove a Chip

To add  
Select the chip  
from this menu.

To remove  
Open a context  
menu and  
select.

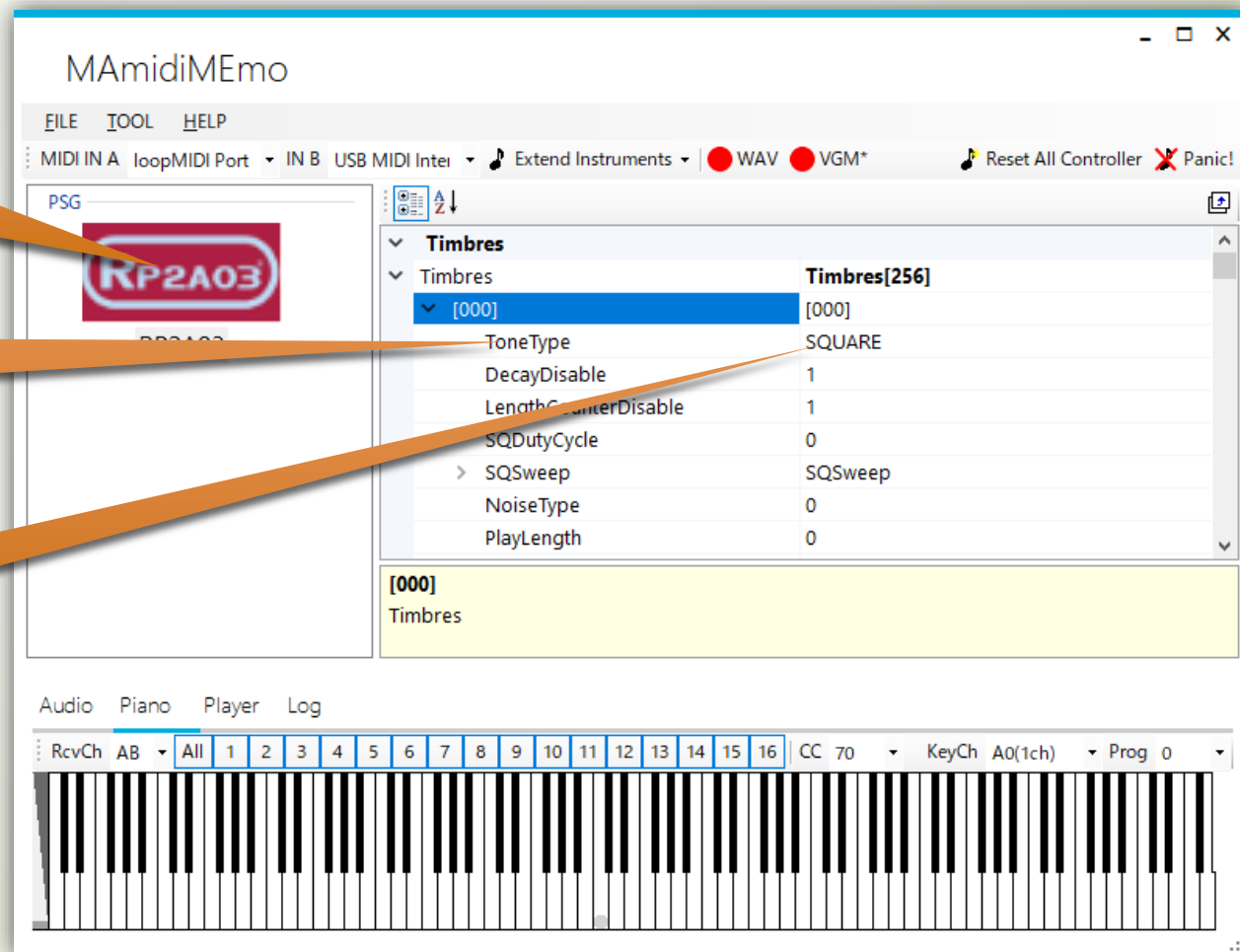


# Edit chip and sound parameters

1. Click chip

2. Click parameter

3. Change value



# Between MIDI ch and Chip ch Relation.

- You don't need to concern the Chip ch. , generally.  
MAmidiMEMo will assign suitable Chip ch. automatically.  
However, you need to concern a max ch. number of the Chip.
- MAmidiMEMo will assign oldest sounding ch. to sound the new sounds.

MAmidiMEMo will assign  
empty ch. or oldest  
sounding ch. , generally.

Note On  
Msg from  
MIDI ch. X

MAmidiMEMo

Chip A

FM ch. 1

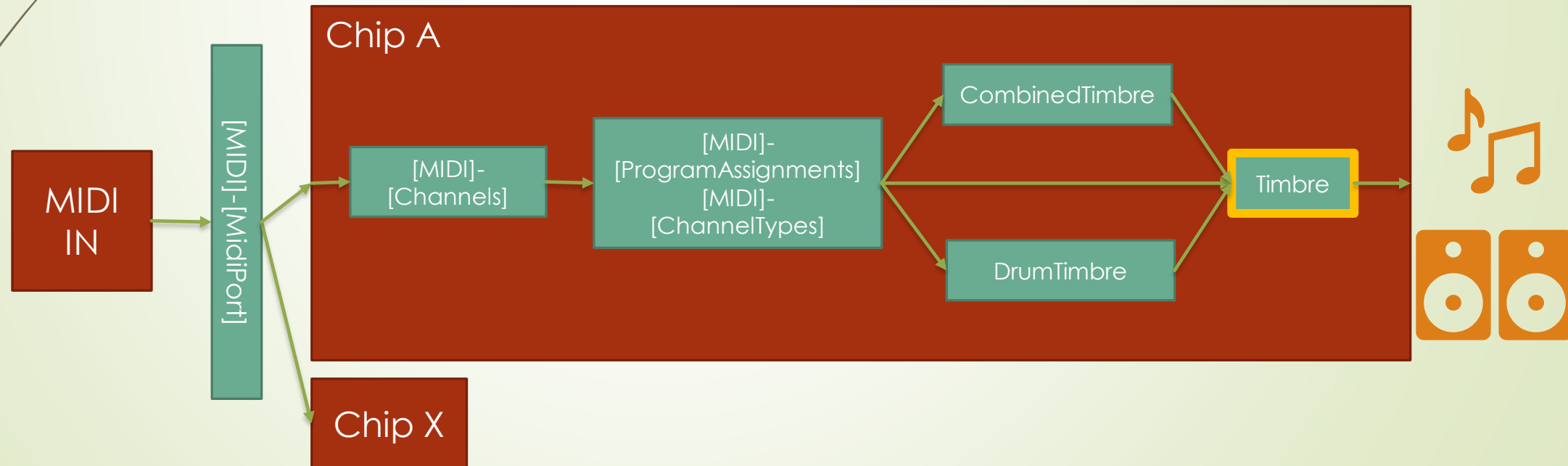
FM ch. 2

FM ch. 3



# Sounding Structure

- MAmidiMEmo outputs a sound from MIDI message along with the following structure.  
So, at least, you need to edit the **Timbre** parameters to sound something.

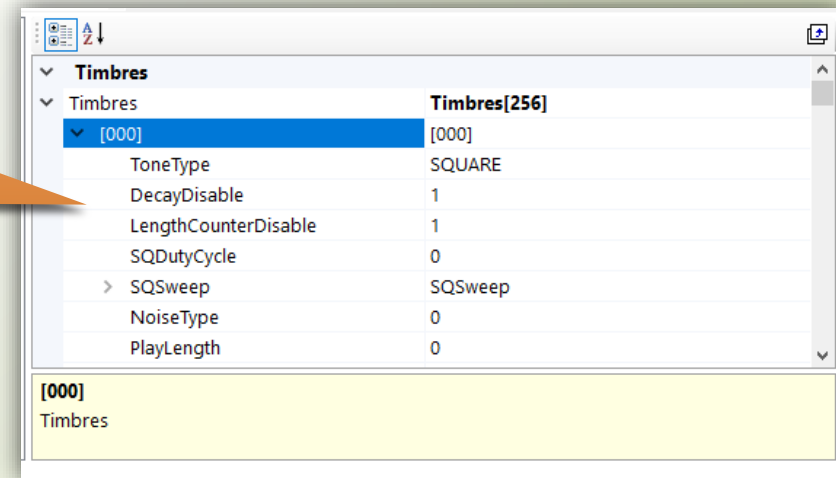




# Timbre

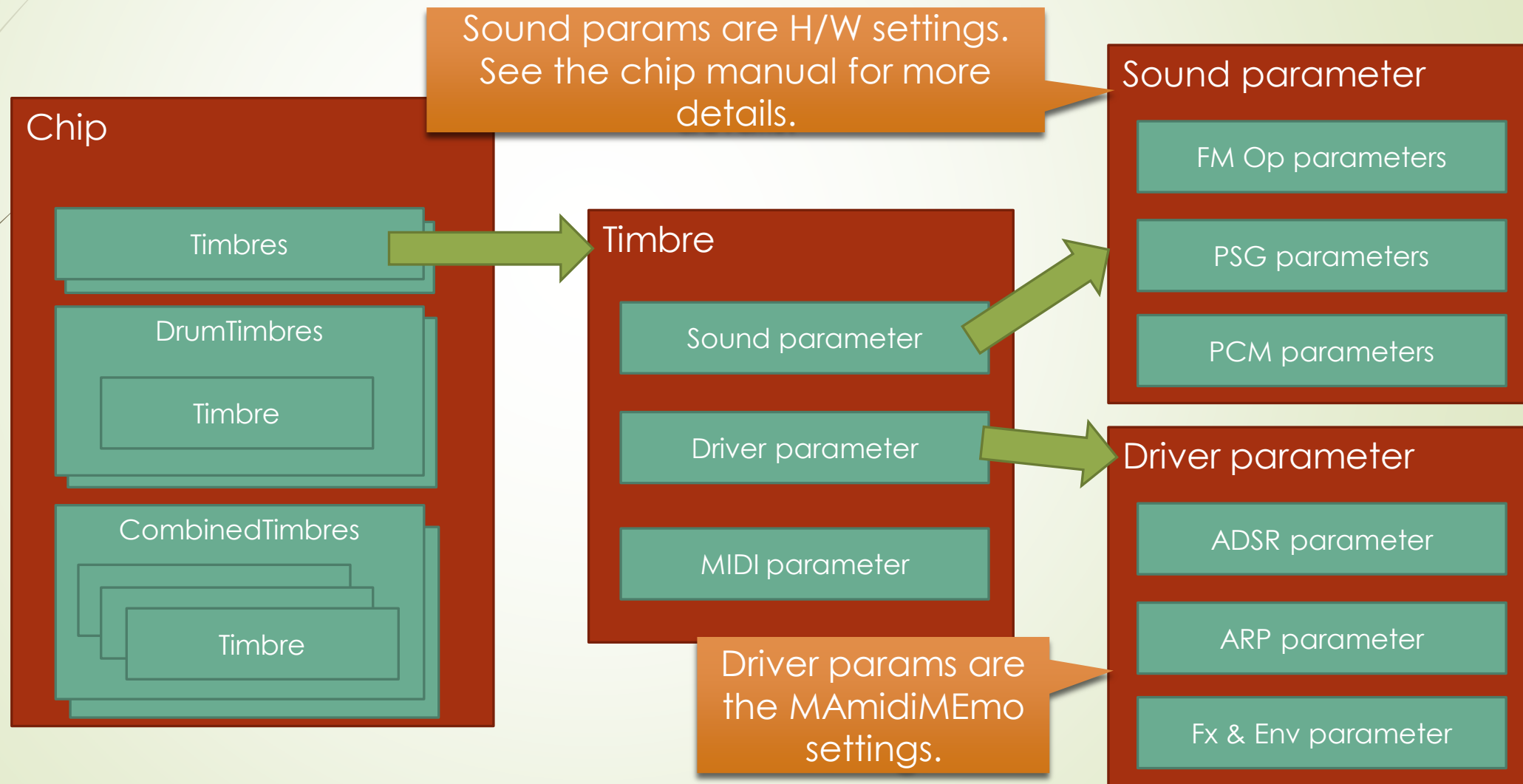
- Generally, a chip has 256 Timbres, 256 CombinedTimbres, 128 DrumTimbres.
- CombinedTimbre can sound multiple Timbers at the same time (up to 4)
- DrumTimbre can sound Timbes as a Drum sounds (Ignoring Note Off msg).
- You can change the Timbre parameters on the Chip Parameter Editor. Generally, you need to learn the chip specification to edit the chip parameters.

Chip  
Parameter  
Editor





# Timbre Structure



# Driver parameters - Fx & Env Structure

- You can make for a rich sound by using driver params. Especially, FxS can do it.

## Fx & Env parameter

Volume Env



Pitch Env



Arp Env



Dedicated Env

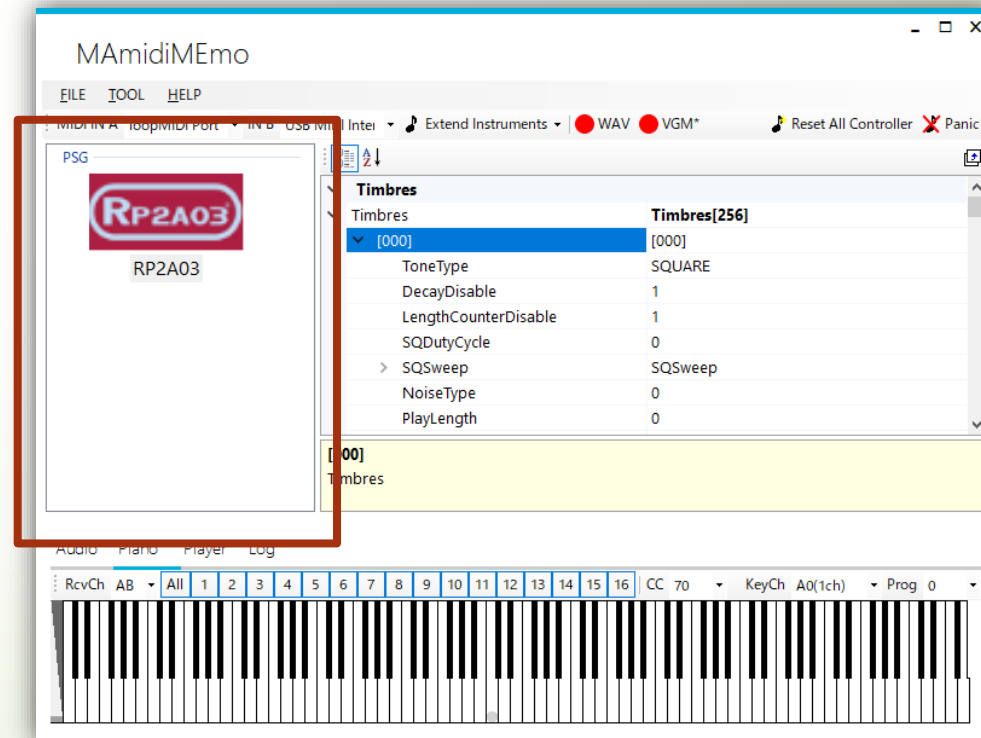


| FxS                |          |
|--------------------|----------|
| Enable             | False    |
| DutyEnvelopes      |          |
| VolumeEnvelopes    |          |
| PitchEnvelopes     |          |
| PitchStepType      | Relative |
| PitchEnvelopeRange | 2        |
| ArpEnvelopes       |          |
| ArpStepType        | Absolute |
| EnvelopeInterval   | 50       |
| Memo               |          |
| SerializeData      |          |

Click here to open the GUI Editor.

# Sample sounds

- There are sample sound files in the “Samples” folder. You can drop a sample file “\*.MAmi” to the left pane.



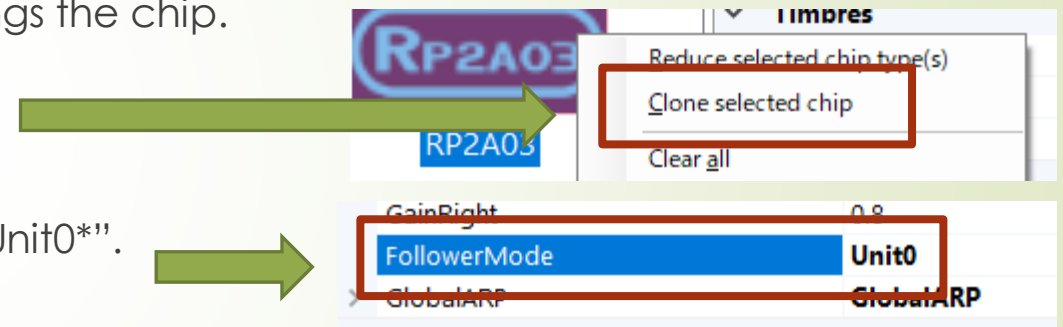
# Additional files

- YM2608
  - Place legitimate “ym2608\_adpcm\_rom.bin” file in the MAmidiMEmo directory to sound ADPCM rhythm sounds.
- MT-32
  - Place legitimate “MT32\_CONTROL.ROM” and “MT32\_PCM.ROM” in the MAmidiMEmo directory to sound ADPCM sounds.

# Limit Break

- Any chip can output only a few voices. However, MAmidiMEmo can break this limitation by the following steps.

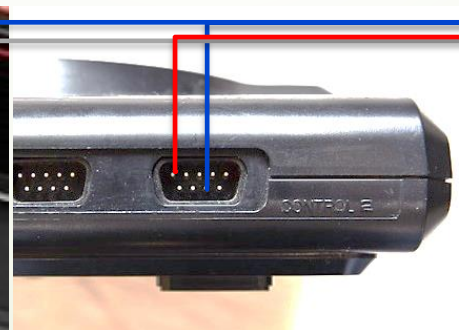
1. Add a chip and complete all settings the chip.
2. Select the [Clone selected chip]  
Cloned chip added.
3. Select the cloned chip and set the [Follower Mode] value to "Unit0\*".  
\* If clone source chip ID is 0.



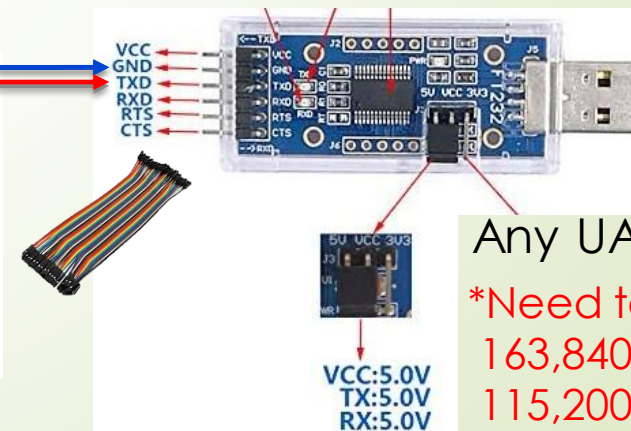
- When the clone source chip consumed all voices, the cloned chip sound for the chip.
- If you want to extend max voices more, select the [Clone selected chip] of the cloned chip. And set the [Follower Mode] value to "Unit0".

# VGM Sound Interface(VSIF - UART) for Genesis/SMS

- MAmidiMEmo and VGMPlayer can drive real machine chips. Currently supports NTSC SMS(2, Mk *III*) for SN76489, OPLL and NTSC Genesis(MD) for SN76489, OPN2.
- How to
  1. Buy the following parts.
    - 1x UART dongle (Note: FT232R and so on. CH340 and CP2102 **may not work 163,840bps**, only 115,200bps.)
    - 1x FLASH Cart for SMS or Genesis and 1x D-SUB 9 pin female connector and DuPont wires
  2. Solder like the following.

SMS/2 or Mk *III*

Genesis/MD



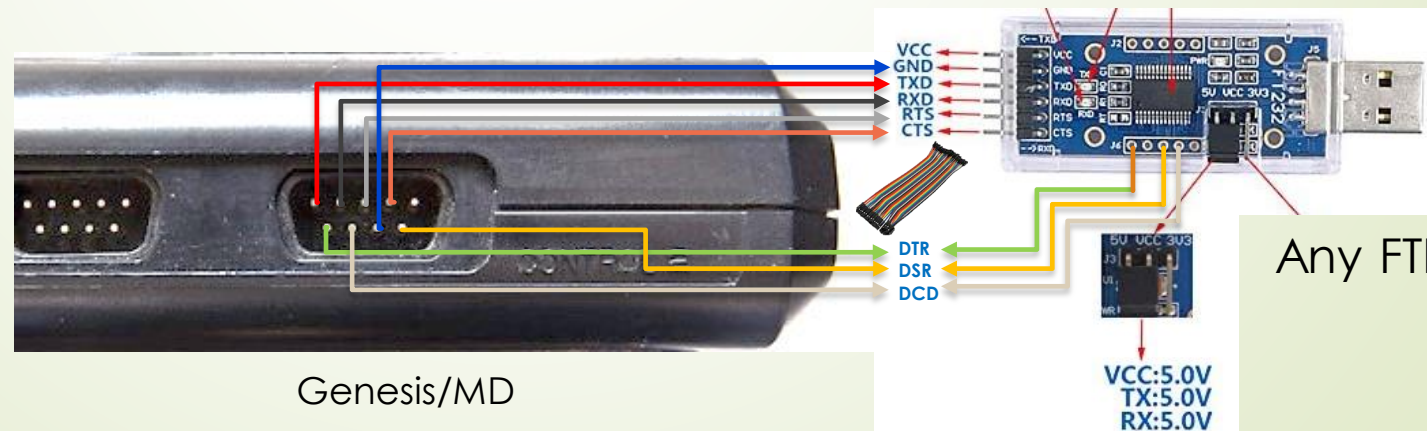
Any UART dongle

**\*Need to support**  
**163,840bps for MD**  
**115,200bps for MD, SMS**



# VGM Sound Interface(VSIF - FTDI) for Genesis

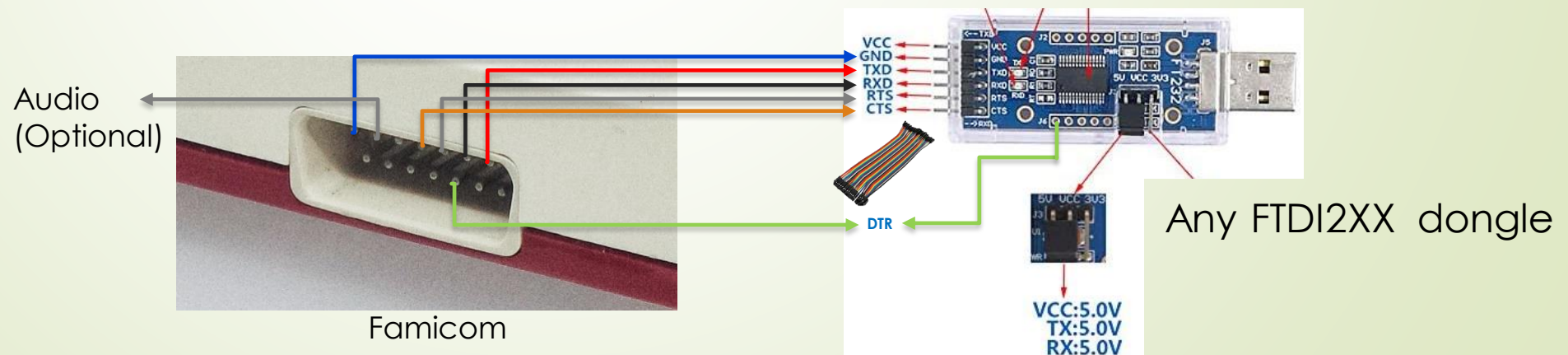
- MAmidiMEmo and VGMPlayer can drive real machine chips more faster if you use FTDI2xx(232R, 232H and so on). Currently supports NTSC Genesis(MD) for SN76489, OPN2.
- How to
  1. Buy the following parts.
    - 1x FTDI2XX dongle (FT232R and so on. Need to support 5V.)
    - 1x FLASH Cart for Genesis and 1x D-SUB 9 pin female connector and DuPont wires
  2. Solder like the following.





# VGM Sound Interface(VSIF - FTDI) for Famicom

- MAmidiMEmo can drive real machine chips more faster if you use FTDI2xx(232R, 232H and so on). Currently supports NTSC Famicom and RP2A03(No DAC)/FDS/VRC6.
- How to
  1. Buy the following parts.
    - 1x FTDI2XX dongle (FT232R and so on. Need to support 5V.)
    - 1x FLASH Cart for Famicom and 1x D-SUB 15 pin female connector for FC and DuPont wires
  2. Solder like the following.



# VGM Sound Interface(VSIF) Settings

3. Burn VGMPlay\_md.bin(for Genesis) or VGMPlay\_sms.sms(for SMS) or VGMPlay\_nes\*.\* (for Famicom) to your FLASH Cart.

\*VGMPlay\_nes\_vrc6/fds/mmc5 ROM does not show any screen but same UI with VGMPlay\_nes.nes UI

4. Set the COMPort/FTDI ID and select "VSIF \*\*\*" you wish.

|                    |                    |
|--------------------|--------------------|
| Chip(Dedicated)    |                    |
| COMPort            | COM4               |
| SoundEngine        | Real(VSIF Genesis) |
| CurrentSoundEngine | Real(VSIF Genesis) |
| Filter             |                    |

5. Reset your console and push [Panic!] button
6. (Famicom only)Re-send DPCM data.
7. Done!
8. If you can not sound sounds, make sure soldering and COMPort name. Or, please contact me.

\*Some UART dongles may not work properly.  
\*Compatible consoles may not work properly.

# VGM Sound Interface(VSIF) for Famicom spec

| Sound        | Normal ROM<br>(Mapper 0) | FDS IMAGE <sup>*2</sup> | VRC6 ROM <sup>*2</sup><br>(Mapper 24) | MMC5 ROM <sup>*2*3</sup><br>(Mapper 5) |
|--------------|--------------------------|-------------------------|---------------------------------------|--|
| Square       | OK                       | OK                      | OK                                    | OK                                     |
| Tri          | OK                       | OK                      | OK                                    | OK                                     |
| Noise        | OK                       | OK                      | OK                                    | OK                                     |
| DPCM         | NO                       | OK (Up to 8KB)          | NO                                    | OK <sup>*1</sup> (Up to 64KB)          |
| Ext. Snd FDS | NO                       | OK <sup>*1</sup>        | NO                                    | NO                                     |
| Ext. Snd VRC | NO                       | NO                      | OK <sup>*1</sup>                      | NO                                     |
| Ext. Snd MMC | NO                       | NO                      | NO                                    | NO                                     |

\*1 Not Tested

\*2 China flash cart may not work properly

\*3 PRG-RAM 32x2 KB

# VGMPlayer

## 1) Select interface type

NOTE: Bandwidth of UART is narrow. So you can not play heavy track data properly.

## 2) Select interface ID

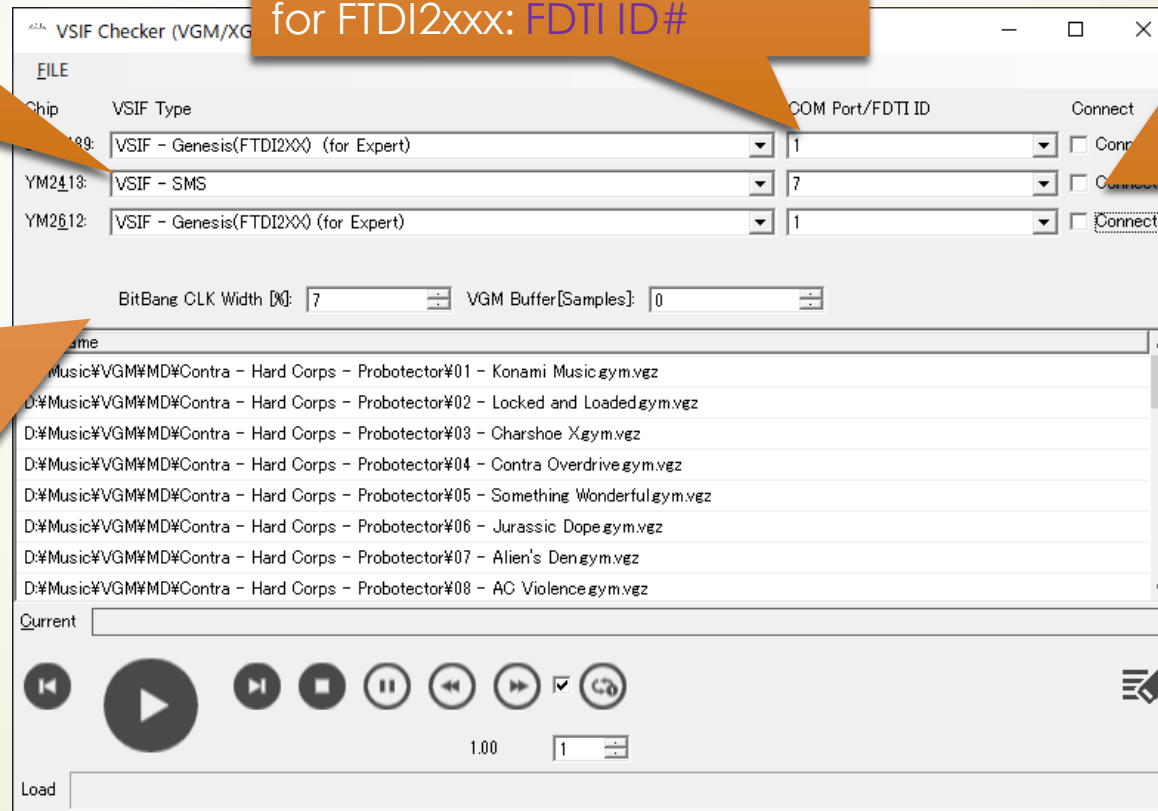
for UART: COMPort#  
for FTDI2xxx: FDTI ID#

## 3) Check to connect

NOTE: If you re-connect to FTDIxxx mode, please reset Gen/MD.

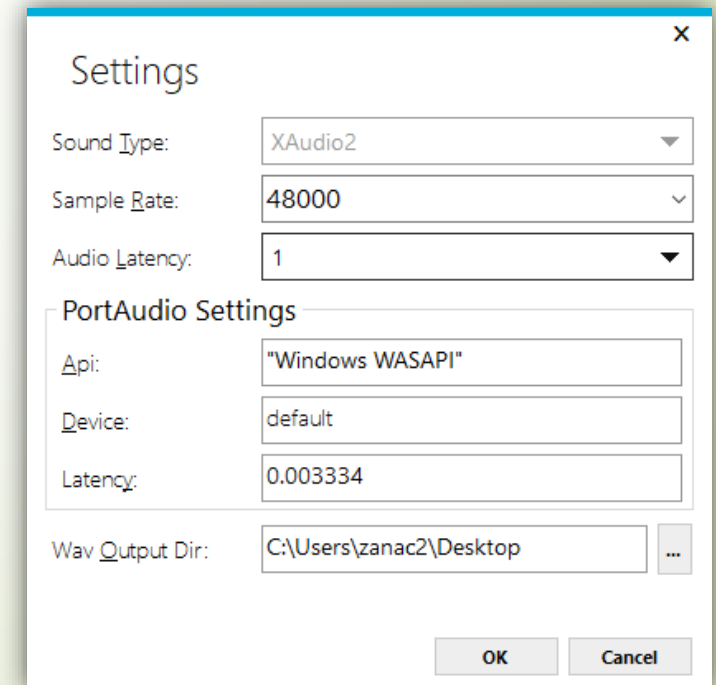
## 5) Adjust CLK speed for FTDIxxx mode for each environment (7~8% is best for normal machine)

## 6) Adjust buffer size for each files. (0 is max accuracy but so heavy.)



# Trouble Shooting for MAmi

- If you noticed “sound lag” or “stutter”, open the Settings dialog from [TOOL] menu. Check [Sound Type] and [Audio Latency] value.



# MIDI Implementation Chart 1

\*Depends on the chip

| Function       | Transmitted | Recognize                      | Remarks              |
|----------------|-------------|--------------------------------|----------------------|
| Basic Channel  | -           | 1-16: Default<br>1-16: Changed |                      |
| Note Number*   | -           | 0-127                          |                      |
| Velocity*      | -           | Yes: Note ON<br>No: Note OFF   |                      |
| After Touch    | -           | No                             |                      |
| Pitch Bend*    | -           | Yes                            | <b>8192: Default</b> |
| Program Change | -           | 0-127                          | <b>0: Default</b>    |



# MIDI Implementation Chart 2

\*Depends on the chip

| Function       | Transmitted | Recognize                        | Remarks                                   |
|----------------|-------------|----------------------------------|---|
| Control Change | -           |                                  |   |
| 1              |             | Modulation                       | <b>0: OFF</b> , 64: ON                    |
| 5              |             | Portamento Time                  | <b>0: Default</b>                         |
| 6<br>38        |             | Data Entry MSB<br>Data Entry LSB |   |
| 7              |             | Volume*                          | <b>127: Default</b>                       |
| 10             |             | Panpot*                          | <b>64: Default</b><br>0: Left, 127: Right |
| 11             |             | Expression*                      | <b>127: Default</b>                       |
| 16-19          |             | GPCS1                            | Modify params                             |
| 64             |             | Hold 1                           | <b>0: OFF</b> , 64: ON                    |
| 65             |             | Portamento                       | <b>0: OFF</b> , 64: ON                    |



# MIDI Implementation Chart 3

\*Depends on the chip

| Function                   | Transmitted | Recognize       | Remarks                      |
|----------------------------|-------------|-----------------|------------------------------|
| Control Change<br>70-75,79 | -           | SCCS            | Modify current timbre params |
| 76                         | -           | Mod. Rate       | <b>64: Default</b>           |
| 77                         | -           | Mod. Depth      | <b>64: Default</b>           |
| 78                         | -           | Mod. Delay      | <b>64: Default</b>           |
| 80-83                      | -           | GPCS2           | Modify parameters            |
| 84                         | -           | Portamento Ctrl | <b>0: OFF</b> , 64: ON       |
| 91-95                      | -           | VST Plugin Ctrl | Modify VST params            |
| 98                         | -           | NRPN LSB        |                              |
| 99                         | -           | NRPN MSB        |                              |
| 100                        | -           | RPN LSB         |                              |
| 101                        | -           | RPN MSB         |                              |

# MIDI Implementation Chart 4

\*Depends on the chip

| Function              | Transmitted | Recognize      | Remarks  |
|-----------------------|-------------|----------------|--|
| Control Change<br>121 | -           | Reset All Ctrl |  |
| 126                   | -           | Mono Mode      | <b>0: OFF</b><br>1-127: Max Voice Num.*                                  |
| 127                   | -           | Poly Mode      | <b>0: OFF</b><br>1-127: Reserve Voice Num.*<br>*Reset Mono Mode when set |

# MIDI Implementation Chart 5

| Function | MSB | LSB | Remarks  |
|----------|-----|-----|--|
| RPN      | 0   | 0   | Pitch Bend Range<br>0- <b>2</b> -127 [Half Note] |
|          | 0   | 5   | Mod Depth<br><b>0</b> -127 [Relative]            |

# MIDI Implementation Chart 6

| Function | MSB | LSB            | Remarks                                     |
|----------|-----|----------------|---|
| NRPN     | 0   | 16-19<br>80-83 | GPCS[1-4] Value<br>GPCS[5-6] Value<br>0-127 |
|          | 0   | 70-75<br>79    | SCCS[1-6] Value<br>SCCS[10] Value<br>0-127  |

# MIDI Implementation Chart 7

| Function | Change Receiving MIDI ch. dynamically.   | Remarks |
|----------|--|---------|
| NRPN     | NRPN MSB Bx 63 41 ... for MIDI ch(1-7)<br>NRPN LSB Bx 62 <Device ID> ... Specify Device ID of existing instrument.<br>DATA MSB Bx 26 <Unit No> ... Specify Unit No of the above Device ID of existing instrument.<br>DATA LSB Bx 06 <Receiving MIDI ch(1-7) bit sets. 1=On, 0=Off><br>bit 6 5 4 3 2 1 0<br>ch 7 6 5 4 3 2 1            |         |
|          | NRPN MSB Bx 63 42 ... for MIDI ch(8-14)<br>NRPN LSB Bx 62 <Device ID> ... Specify Device ID of existing instrument.<br>DATA MSB Bx 26 <Unit No> ... Specify Unit No of the above Device ID of existing instrument.<br>DATA LSB Bx 06 <Receiving MIDI ch(8-14) bit sets. 1=On, 0=Off><br>bit 6 5 4 3 2 1 0<br>ch 14 13 12 11 10 9 8     |         |
|          | NRPN MSB Bx 63 43 ... for MIDI ch(15-16)<br>NRPN LSB Bx 62 <Device ID> ... Specify Device ID of existing instrument.<br>DATA MSB Bx 26 <Unit No> ... Specify Unit No of the above Device ID of existing instrument.<br>DATA LSB Bx 06 <Receiving MIDI ch(15-16) bit sets. 1=On, 0=Off><br>bit 6 5 4 3 2 1 0<br>ch xx xx xx xx xx 16 15 |         |