

> KAIWA_

The speech synthesizer with a Japanese robot chip.



Short description

Kaiwa is made with the same hardware as Emy but it host a text to speech Japanese synthesizer on a mikroBUS daughter board.

The SD card hold songs composed with lines of rōmaji texts. The chip can vary the speed, the pitch and the accent of the speech.

It also recognizes various speech modifiers to improve the prosody.

What & when to speak

Note : when using a jack, its pot should be rotated fully CCW to let the input voltage to its full scale.

1) Gate

To trigger the sound. (see mode for details)

Remember to use various gate length when creating rhythms.

2) Function Selector

Turn the rotary to select a function and apply the choice by pressing the button.

The button can also be used to simulate a gate trigger and start the speech.

To exit a function: hold down the button **until the screen becomes black**, then immediately release it.

3) Sound

This signal is used to select the sound to be processed.

When reading the SD card, it is used to choose a line from the file being processed.

4) Busy

5 volt level that goes up when Kaiwa is busy talking.

5) Mode

Trigger mode (position: up)

in trigger mode, the speech has the priority and will complete before starting again on the new gate signal.

Gate mode (position: middle)

In gate mode, the gate has the priority and the speech is active only while the gate level is high. The speech is stopped by the gate going low.

Playing with the gate length or with its duty cycle allows creating nice rhythmic effects.

Auto mode (position: low).

The speech restart itself regardless of the gate signal.

How to speak

Note : these parameters are applied before processing the speech and are ineffective while speaking. They are applied on the next utterance. Best is to fiddle a bit with the knobs for the desired effects.

S) Speed

Adjust the speed.

P) Pitch

Adjust the pitch.

A) Accent

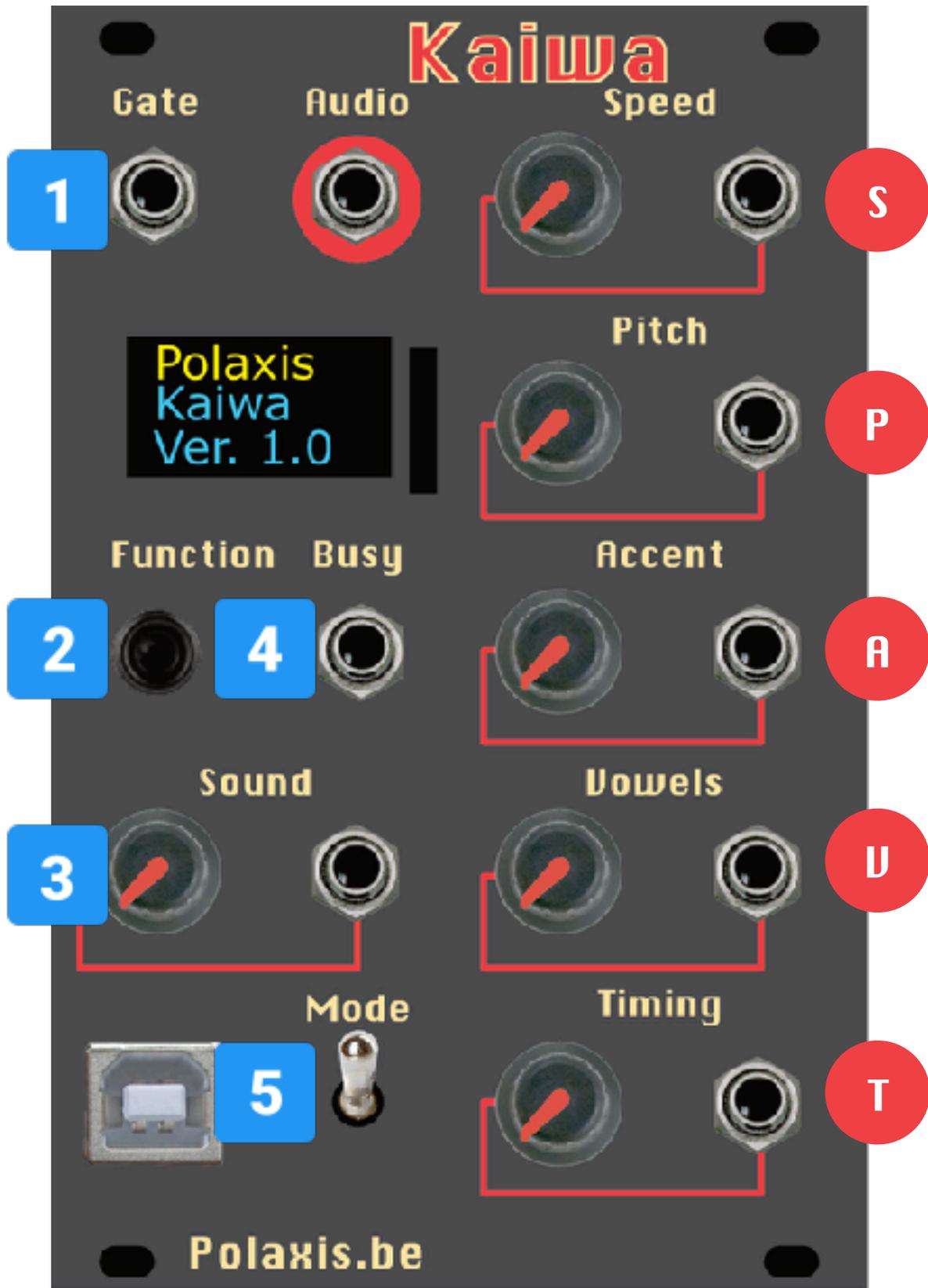
Adjust the accent. This effect is greater at high pitch.

V) Vowels

Elongate the vowels for a singing like effect.

T) Timing

Adjust the delay between the words which are separated by a space in the text files.



Main menu

SD TTS

Select a file from the SD card and use the Sound entry to pick a line within that file.

Suuji

Read numbers from the Sound entry.

Use the rotary to change the number range from 9 to 99.

The voice has the priority so the change will be effective when the speech ends.

USB TTS

Utility to help in designing custom rōmaji strings using a remote terminal software via USB.

The speech is triggered by the gate signal, so this mode can also be used to edit and play live text.

Onsei

Change and reset the master clock of the speech engine.

Use the rotary to set the frequency, then briefly press the button to test and store the new clock value.

Apply a longer press to exit.

Technical details

- 16 hp
- micro SD card reader
- Diode for reverse polarity protection
- Consumption : +12V 60mA / -12V 18 mA
- Cortex-M0 ARM processor, Arduino zero compatible
- All inputs: 100k impedance, 12-bit ADC.
- CV control designed for 0-5 V entries
- Busy out signal 5V
- OLED crisp display
- mikroBUS host with audio input.
- Trimpot to adjust the mikroBUS amplification level.
- Output level 8 Vpp
- USB port for communication and firmware updates
- Onboard mikroBUS board with ATP3011R4-PU robot voice

Online Manual & help

Kaiwa's main page : <http://www.polaxis.be/kaiwa/>

Support forum : <http://www.polaxis.be/forum>

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