Talko S.A.M. User Manual

Talko S.A.M. brings the Software Automatic Mouth voice to Talko 2. Play ten banks of speech and percussion, switch between six voices, and shape the sound while it plays.

Test version 0.6. These instructions cover the build currently being tested ahead of version 1.0.

Play your first word

1. Connect Talko’s audio output to your mixer or modular system.

2. Turn the encoder to **bank 3** for single words.

3. Turn **SOUND** to choose a word, then press **SPEAK** or send a signal to **GATE IN**.

4. Start with **SPEED** and **PITCH** near noon. Turn either knob clockwise for faster speech or higher pitch. Both respond while speech is playing.

Use the encoder and display

Decimal point	Mode	What to do
Off	Banks	Turn the encoder to select a bank. Turn SOUND to pick an item within it.

Decimal point	Mode	What to do
Steady	Effects	Tap the encoder to enter FX. Turn it to pick an effect, then use the FX knob. Tap again to return to banks with the effect still active.
Fast blink	Voices	Hold the encoder and turn to choose a preset. Trigger speech while holding it to hear the highlighted voice. Release to return to the bank.

Set the gate response

In either outer switch position, each trigger plays the selected item once. If another trigger arrives during speech, Talko keeps the most recent request and plays it after the current item.

In the middle position, speech stops when the gate goes low or you release SPEAK. That also clears any waiting trigger and cuts the delay or reverb tail. The next trigger starts a new item.

Use the ERROR button

Hold **ERROR** during speech to loop a short fragment. While you hold it, turn **SPEED** to change the loop length and **PITCH** to change the loop playback rate. Release ERROR to resume speech from where it paused. The display flickers during the stutter.

Sound banks

Bank	Contents	Items
0	Numbers zero through nine	10
1	Alphabet A to Z	26

Bank	Contents	Items
2	NATO alphabet	26
3	Single words	16
4	Commands	12
5	Computer status	12
6	Radio calls	12
7	Vowels and diphthongs	17
8	Consonants	18
9	Vocal percussion	12

Voice presets

Display	Voice
S (looks like 5)	S.A.M.
E	Elf
r	Robot
t	Stuffy
L	Little Old Lady
A	Alien

Each voice has its own Speed, Pitch, Mouth and Throat settings. The centre positions of the SPEED and PITCH knobs use the preset values. At power on, Talko starts in bank 0 with the original S.A.M. voice.

Effects

Display	Effect	FX knob
–	Off	Dry speech
o	Ring Mod / Dalek	Carrier frequency, about 30 to 1,200 Hz. Fully counterclockwise bypasses the effect.

Display	Effect	FX knob
r	Reverb	Reverb level and decay
d	Delay	Echo time, about 40 to 700 ms
E	Error / Glitch	How often short stutters interrupt speech. Fully counterclockwise switches automatic stutters off.
S	Saturation	Drive into clipping
G	Growl	Blends the voiced buzz into noise shaped by the voice’s formants.

Watch the mouth in Visual Console

1. Open the S.A.M.-compatible version of Visual Console in desktop Chrome or Edge. Close any other serial monitor using the Talko port.

2. Enable **3D Head**, or press **D** and enable **2D Mouth**.

3. In the head or mouth menu, choose **Phoneme model → S.A.M.**

4. Choose **Serial → Connect Port**, select Talko, and trigger speech. You can use the existing **Word display** at the same time.

The mouth follows the phonemes as Talko plays them across all ten banks. Try bank 7 for vowels and diphthongs, bank 8 for consonants, and bank 3 to see the shapes in a whole word.

Install or switch firmware

Use the UF2 for **Talko 2 (RP2040)** and a USB data cable. Keep a copy of the standard Talko 2 UF2 if you want to switch back.

1. Connect Talko to your computer over USB.

2. Hold **BOOTSEL**, press and release **RESET**, then release BOOTSEL after a second or two.

3. Copy the S.A.M. UF2 to the **RPI-RP2** drive. Leave USB connected until the copy finishes and the board restarts.

4. Listen for the version at startup and check the display. To return to the standard firmware, repeat the same steps with the standard Talko 2 UF2.

For board access and the standard firmware download, see the Talko 2 user manual.

Source and attribution

The speech engine is adapted from ESP8266SAM 1.1.0. The upstream license is listed as unknown.