

**Circuit Bent  
Speak & Spell  
By  
fastmatt**

**Owner's Manual 1.0**

**<http://www.fastmatt.com>**



## **Quick Reference:**

- A. 1/4" Output Jack (for Amplifier)**
- B. Pitch Bend Body Contacts**
- C. Pitch Bend Knob**
- D. Glitch Switch**
- E. Distortion Button**
- F. Tone Buttons**
- G. RELEASE Button for RHYTHM Loop**
- H. Two-Way Loop Switch\***
- I. RELEASE Button for FREEZE Loop**
- J. Main Power Switch \***

**\* Note: On Push-Button models, the Loop switch may be above the Release Buttons due to internal clearance. If this is the case, then you will also find that the UPPER release button is for releasing the FREEZE loop, and the lower button is for releasing the RHYTHM loop – i.e. exactly the opposite of the above diagram. ☺**

**Also, the Power Switch (J) may be on the left side due to different battery wiring design.**

Congratulations on your purchase of my circuit-bent Speak & Spell. Carrying on the tradition of the circuit bending community, I've taken what was once a delightful children's toy and turned it into a freakish machine that generates random alien musical sounds in response to your control inputs.

As with any circuit-bent instrument, you will not be covered under the original manufacturer's warranty. ☺

However, Please do not hesitate to contact me if you have any trouble or questions about it. If something goes wrong with it, I will provide free repair service for at least one year, if you cover shipping. If I determine a defect to be the result of my workmanship, I'll cover the shipping also.

I can be reached by emailing [silversax1@yahoo.com](mailto:silversax1@yahoo.com).

The following pages will give you a tour of your new instrument and will offer tips on getting the freaky sounds out of it. Please be sure to have 4 fresh C batteries installed in the direction pictured inside the battery compartment. I DO NOT ADVISE THE USE OF A WALL POWER ADAPTOR, following the general advise of the circuit bending community.

Let's get started...

1. Power on the unit  
The Main Power Switch (J) directly breaks the battery power circuit. I advise this be turned off when not in use (even after pressing the original OFF button) to avoid battery drain, or worse, having it wake you up in the middle of the night. Yes, it has been known to happen!  
Start by turning the switch ON (upwards). Note that this alone will not make it do anything, it just connects the batteries to the circuitry.
2. Set the Glitch Switch (D) to the down (OFF) and Loop Switch (H) to the center (OFF) positions.
3. Move the Pitch Bend Knob (C) to any position away from the stop points in either direction – to get you a normal pitch to start with. \*\* Move the Voice Modulation knob all the way to the LEFT (counter-clockwise), which is where it is off. Also make sure the volume knob on top is turned all the way UP (clockwise).
4. Hit the original ON keypad button at the top right of the keypad. You should hear the familiar sounder and see the words 'SPELL A' on the screen. YOUR SPEAK WILL BEHAVE NORMALLY AT THIS POINT. Feel free to take a moment to re-live your childhood and play all the spelling games.
5. Now let's have some fun. Get it talking, either using the letter keys or by starting up a game such as 'SAY IT' followed by 'GO' button. Now press the Distortion Button (E) to turn the voice into a demonic distorted menace. This effect can be used at any time, with all other effects. This button is momentary so as soon as you release it, the effect is off.
6. Release the distortion button. Get it talking again, and flip the Glitch Switch (D) into the UP (on) position. The speech should begin to glitch out and become a random stream of alien phonemes and words. (Remember E.T.?) Note that the glitch may not be continuous. It will stop after a few seconds, but just keep it going by hitting the letter buttons, the game buttons, the module select button, etc. You will find that different buttons will create new variations of glitch. You will surely also find that sometimes you'll push this thing a little too far and it will turn off, or lock up with no sound. This is normal – you're making it do things it was never designed to do – but it won't hurt anything. Simply try hitting the ON keypad button to get back into the game. Or you might have to cycle the power by flipping the Main Power Switch (J) off and back on, then hit the ON keypad button. \*\*\* To create a long stream of glitch that lasts for minutes on end: Turn on the glitch, then press GO, followed by the letter D or M repeatedly until the glitch starts. THIS IS THE BEST WAY TO CREATE SOUND TO FEED INTO THE RHYTHMIC LOOP, DESCRIBED BELOW.
7. Get it back to a normal state by hitting the ON key or power-cycling. Now flip the LOOP Switch (H) into its LOWER position. This activates the RHYTHMIC LOOP bend, and is in my opinion the coolest modification. You must get the device to make noise in order for the loops to start. Do this by hitting the ON keypad button, the letter keys, game keys, module select key, etc – anything to make it do something. You should begin to hear a random rhythmic sound. The frequencies and variations of this sound effect is simply amazing, and should be a great source for your sampling or live performance. Now that you have a freaky loop running, you can alter it with other controls – more on this later. If the machine suddenly powers completely off, simply turn it back on or cycle the power. \*\*\* SOME DEVICES MAY CRASH IF YOU PRESS LETTER BUTTONS WHILE THE RHYTHMIC LOOP IS ENABLED – THIS IS UNAVOIDABLE AND IS CAUSED BY VARIATIONS IN THE MANUFACTURING OF THE CIRCUIT BOARD. \*\*\* It is much more efficient to start a 'mega glitch' as described above in step 6, then use that to feed sound into the rhythmic loop.

8. You've still got that cool rhythm loop going. Now find the Momentary Release Button for the RHYTHMIC loop. This button is labeled (G) in the diagram, and is directly above the switch. Remember that the release button is the one OPPOSITE the direction of the switch. Very gently and quickly, tap this button. This releases the current loop and will usually drop you into another random loop sound. After a few of these advances, you'll stop hearing sound. Just get it talking again with the keys to get the loop started again. The advance button gives you fast access to the next loop sound without having to turn off and on the main loop switch.
9. Now that you're getting the hang of the rhythmic loop, return the Loop Switch to center, and stabilize the machine with the ON key or a power cycle. Get it talking by hitting letters. Right when it is in the middle of saying a letter, flip that Loop Switch UP. You'll freeze it right in the middle of the sound it was making. (AAAAAAAAAAy, BEEEEEEEEEEEEEEEEEE, CEEEEEEEEEEEEEEEEEE....).
10. Now leave the switch up, and hold down its Momentary Release button – the LOWER one (I). As long as you're holding this down, the loop is not active, so it will talk normally. Get the letters going again, and now you can catch the sounds by releasing the button right where you want it, and pressing it back in to let go of the sound. Sometimes you'll find this freeze loop has its own subtle rhythmic qualities as well, and it also responds well to the pitch bend controls.
11. Return the loop switch to center off, and stabilize the machine. Get it talking by hitting letters or starting the 'SAY IT' game. Reach for the Pitch Bend Knob (C) and turn it in either direction. This SHOULD raise or lower the pitch. IF IT DOESN'T, then the knob is switched off. PRESS THE KNOB INWARD UNTIL IT CLICKS, THEN RELEASE IT. This knob has a built-in switch. When off, you're hearing the factory-stock pitch. When ON, you are terrorizing the CPU by altering its clock frequency, causing the whole thing to run faster or slower than it was designed for! The lower range is a bit touchy. I have tuned it for maximum lowness without crashing, but you will find the machine gets a bit unstable in its lowest range, so just be ready to power-cycle. You can use this bend with any other effect. This will be especially fun in a few minutes...read on.
12. Return the knob to somewhere in the middle, so it sounds normal again. Now get it talking and gently touch the LEFT body contact (B). You will find that the firmer your pressure on the contact, the lower the pitch, to an extent. You can make it go even lower by touching both contacts simultaneously. You will crash him with the right amount of contact. Your fingers are providing a low current pathway – you are literally carrying electricity, merging your circuitry with its circuitry. The resistance of your fingertips is altering the CPU frequency just like that pitch knob does. This is kinda why I told you not to use an AC wall adaptor. Just in case!
13. Now try out the Tone Buttons (F). The one facing you, on the front of the device, is what I call the 'Screech'. It will produce a very loud tone, and will cause little red lines to form on the display. (I REALLY don't think the Texas Instruments engineers would approve! So far I haven't fried one though.) Now on the side, the upper button is the 'high' pitch – really more of a mid range, smooth sound. The lower button is the 'low' pitch. All three can be played during any other bend. Now you can play a little tune by pressing the buttons as you adjust the pitch with the knob or the body contacts! Practice with this – you might surprise your friends with a familiar melody.
14. Now you are ready to start making your own musical madness. Use all the bends described, in different combinations, and see what you can come up with. Once you have some practice, you might want to take it on stage if you are a musical performer. If you are, then I'm sure by now you've discovered the 1/4" Amplifier Output (A). And

you've probably plugged it into a monster amplifier and tried out all your effects pedals. If you want to capture some of this sound to your PC, note that the 1/4" the amplifier output isn't designed for your PC input. If you were to plug your 1/4" amp output jack into the PC, you probably won't hear anything at all, because the 1/4" output is attenuated with resistors to properly feed an amplifier. If you have a 'direct box' such as the 'Tube Pre' made by Presonus, or perhaps one of the USB devices made by M-Audio, you can use the 1/4" jack to plug into that box, then from the direct box into your PC, and that works great as well.

15. Recording on PC – you probably know what you're doing here, probably more so than I do. If not, I recommend a shareware program called Goldwave. It can record large sound files and save as .wav or .mp3, and also gives you lots of editing and effects capabilities. Search for it on Google. Just start up a sound recording session and jam out. Once you're done, you should have lots of raw material to take apart and use in your samplers, or directly into your music. I wish I had the time and energy to do this kind of stuff, but I'm too busy making these bent Speaks for YOU!! ☺
16. You've surely noticed the blue LEDs on the sides. These are just for show. They are positioned to light up your hands as you perform. They are ultra-brite, so try not to stare directly into them, lest you burn blue spots onto your retinas. These should give you a little 'wow' factor on stage. Don't press too hard on them or you'll knock them into the case, out of their holders.
17. Bonus: Mega-Glitch. This is an advanced trick. Set all switches to normal and turn on. Flip Glitch Switch up. Press GO button, then press D button repeatedly until it starts glitching. This should cause a glitch lasting 3-5 minutes straight, with no further prodding from you. This is a great way to feed the loop switch with a lot of varied raw sound material, for the most impressive loops. Also try activating the glitch using the M button instead of the D, or experiment with other letters in this method.

I hope you have enjoyed this step-by-step tour. Again, if you have any questions at all, or suggestions on how to make the device or this manual better for yourself or others, please let me know.

Also, if you or someone you know wants another one and don't see any on eBay, let me know. I've got a whole stack piled up on my workbench, awaiting their date with destiny.

Thanks again for your purchase, and please keep me posted on what you're up to. I'd love to hear stories about how you're using it, or pictures of you using it on stage, or be credited in your hit albums, etc. etc.

--fastmatt