PIPE

USER
MANUAL

WHAT IS THE PIPE?

The Soma PIPE adds new expressive and musical dimensions to your vocal performances and studio recordings, and expands the timbral, rhythmical and textural potential of your voice — treating it as a synthesizing musical instrument with many subtle parameters. Whether you're a conventional singer, beatboxer, noise musician or an experimental vocalist, the PIPE will add new layers to your music that you never knew existed.

The PIPE makes you a beatboxer without needing any prior skills (although some sense of rhythm will help), and you can sound like a Tibetan throat singer just as easily. Turn your voice into a synthesizer with frequency cut-off that you tweak on the fly, or connect any external sound source to the 6.3mm jack input to turn the PIPE into an external FX processor. The custom-built mic inside the PIPE is a special contact mic, which yields very interesting results when used together with acoustic instruments. Bottom-line, the PIPE is unlike anything you have ever played, because nothing like it exists.

Out of all the music instruments we can learn to use, our own voice is the most deeply connected to our innermost thoughts and emotions. This connection was born hundreds of millions of years before humanity fully evolved.

Our voice is the shortest path to the depths of our subconsciousness. In music, the human voice typically appears in the form of words, usually limited to common vocalizations, and only rarely as the means for pure emotional and timbral expression. Although the PIPE can be used for conventional singing and speaking, it is ultimately designed to offer new expressive powers for a voice beyond words and symbolic thinking. The PIPE makes it possible to create a versatile sound palette without knob tweaking, by just using the natural flexibility of the human voice box and our instinctive connection to it.

The PIPE can be used by masters of classical singing styles, as well as by experimental musicians who may not be good singers in the conventional sense. Drones and noise textures up to harsh noise, various percussive sounds, melodic leads, choirs, FX, bass — all this can be achieved using different articulation techniques and processing algorithms.

The PIPE consists of a special vocal contact microphone in a controller and processing unit that's connected by cable to a breakout box containing the power supply and audio output.

The contact mic dramatically expands the palette of vocal techniques. A unique feature of the mic is that it is highly sensitive to the position of the lips relative to the membrane, and also how tight the contact between lips and mic is. A tiny movement of a few millimeters or degrees can drastically change the timbre. The microphone picks up sounds that traditional mics never could. This sensitivity allows artists to control the sound to create a wide range of timbres. With your lips pressed tightly against it, the microphone is able to catch the most subtle sounds of breathing, along with any movements of your lips and tongue. At the same time, the microphone has a robust brass membrane that can withstand a lot of punishment. This allows for intense vocal techniques without the risk of damaging the microphone. You can beatbox or blow straight into the mic to get distinct percussive or noise sounds. Due to the way it's designed, the PIPE microphone is much more than just a receiver and transmitter of sound. It also plays an active part in the shaping of sounds. When used in certain ways, the microphone can play an even bigger role than your voice.

The heart of the processing unit is a digital signal processor equipped with unique algorithms created specifically for the PIPE. The main goal of the algorithms is to both preserve and

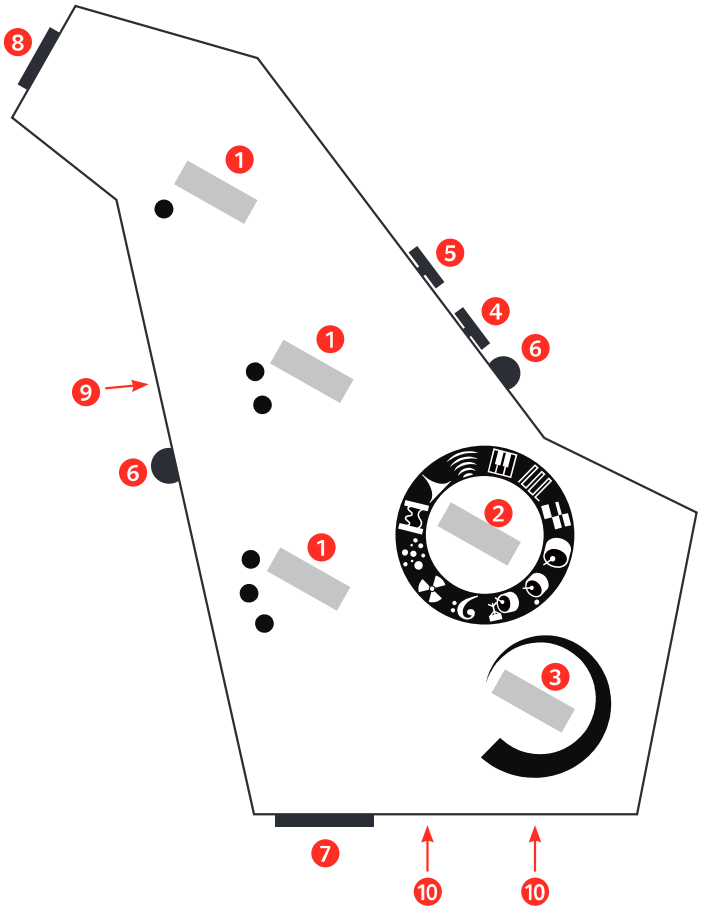
emphasize the various nuances and details of a live vocal performance. This is why many parameters of synthesis and processing are dynamic, i.e. they change depending on the parameters of the input signal. Even when using completely synthetic algorithms (e.g. BASSDRUM), the output includes elements of the live voice input and is very sensitive to the character of sound articulation. This encourages a very nuanced and dynamic performance, similar to an acoustic instrument, while having the wide range of colors and possibilities of an electronic instrument.

You only need one hand to hold and use the PIPE, leaving the other hand free to play other instruments or control other equipment. The PIPE is powerful enough to hold its own in a solo performance, or can complement a larger electronic or acoustic setup. The PIPE also has standard M4 screw holes for attaching it to a stand or neck strap, leaving both hands free.

The microphone of the PIPE is connected to the body with a regular 6.3 mm jack. This allows connecting the microphone to an extension cord, putting it in on a mic stand or placing it inside of or on the surface of an acoustic instrument.

Additionally, it allows using the input jack to connect other signal source and use PIPE as an FX unit for processing keys, drums etc. It also allows experimenting with other types of microphones.

CONTROLS AND CONNECTIONS



1 **Control knobs** for synthesis and processing parameters. They have different functions in every algorithm. You can find detailed explanations in the algorithm section of the manual. A short list of knob functions and FX sensor behavior for every algorithm is printed on the other side of the PIPE.

2 **Algorithm switch:** Selects one of the 12 algorithms.

3 **Volume.**

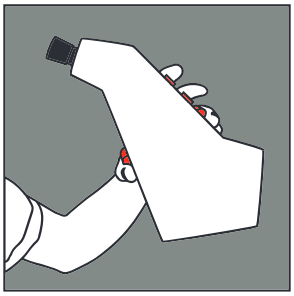
4 **Microphone activation touch sensor:** Hold this down to use the microphone. When the sensor is not touched, there will be no sound. Release it to immediately kill unwanted feedback due to high amp levels or extreme FX processing. It can also be used to rhythmically gate the audio signal. When you stop playing and put down the PIPE, your hand will be off the sensor and the microphone will be automatically muted, stopping any feedback or picking up unwanted sounds. You don't have to worry about muting the channel on the mixer when your performance is done.

5 **Additional FX touch sensor.** Additional FX are different for each algorithm. They are described in the section about algorithms. I chose a touch sensor instead of a button because the sensors have practically unlimited service life, high reliability and high usability. Even when you press them 10 times/second (which can really happen when you want to quickly gate the sound or add FX) you can be sure that you will not have to change the buttons after a few performances.

6 **Handles + artist body grounding.** They are needed to hold the PIPE comfortably with your fingers and not let it slip from your hands. They also serve as second contact point for the touch sensors. The sensors activate when you complete the circuit between the sensor and the handle or any other conducting element connected with the ground of the PIPE or the setup as a whole.

Instead of your body, you can use a wire or any conductor with the resistance of no less than 10 mOhm (can be useful for various experiments). Artist body grounding can also be useful to decrease hum and interference.

On the picture below you see the correct way to hold your PIPE if you play with one hand. The PIPE is made to be held with your left hand.



If the PIPE is the only instrument you are playing at the moment, you can use both hands to operate it more comfortably: hold the device with your left hand while turning the knobs and sensors with your right hand. This makes the hand placement more relaxed and playing the instrument easier.

7 **Custom XLR connector for connecting PIPE to the breakout box.** The device is connected using a special cable that transmits power and L/R audio channels. Please note: The pin arrangement in the cable and connectors is custom-made for the PIPE. Use only the cable that is supplied with the PIPE and do not use it with other equipment.

8 **Input for microphone or external signal.** 6.3 mm TRS jack input. The sleeve is the ground, the ring is the microphone touch sensor and the tip is microphone/external signal input. The original microphone jack has a disconnected ring contact. The microphone is activated using the touch sensor on the PIPE. When a TS (mono) jack cable is used, the ring (and consequently the activation sensor) will be continually connected to the ground and the PIPE input will always be on, unaffected by the microphone activation sensor. This is useful when using the PIPE with external audio signals. Simply use a TS jack cable and the PIPE input will always be active. It is also useful if you want to place the microphone on a stand or use it with an acoustic instrument and have both hands free. Use a female/male TS extension cord to connect the microphone, and the ring of the input connector will be connected to the ground in the same manner, making the PIPE input always open. It is possible to create a remote control unit using a TRS extension cable.

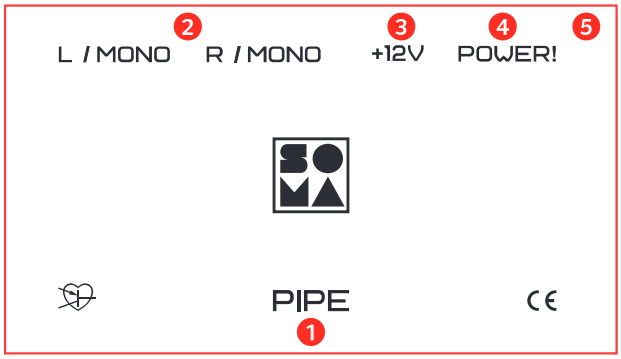
Maximum input AC voltage when used with external audio is 2.5V p-p (Line level). Higher voltage will create an overload in the input circuit and the signal will be distorted. Input impedance — 250 kOhm (Hi-Z).

9 **M4 thread for connecting a neck strap.** The maximum length of the threaded portion of the screw cannot be more than 8 mm! A longer screw will damage the PIPE circuit board!

10 **Two M4 threads for placing the PIPE on a stand, holder or certain surface.** The distance between the center of the holes is 25 mm. The maximum length of the threaded portion of the screw cannot be more than 8 mm! Longer screws will damage the PIPE circuit board!

Inner light. The PIPE shines with a mystical red light from the openings on the front panel. This light responds to input peaks with increased brightness. You can change the brightness of the light and signal sensitivity with a special trimming resistor inside the PIPE. To access it, open the back cover. The resistor is located close to the LEDs.

BREAKOUT BOX



1 Custom XLR connector for connecting the PIPE. The instrument is connected using a special cable that transmits the L/R audio signal and power. Please note: The pin arrangement is irregular. Use only the cable that is supplied with the PIPE and do not use it with other equipment to avoid damage.

2 Outputs: LEFT OUT and RIGHT OUT — 6.3 mm jacks. The PIPE outputs can be used for an unbalanced or balanced connection. Average output voltage when the volume knob is turned up to the maximum: 2V p-p. The peak output voltage: 9V p-p. The output resistance is 150 Ohm. The PIPE outputs can be connected directly to long balanced cables (up to 25 meters) without the need for a direct box.

Both outputs can be used for mono signals. When only one jack is plugged in, both channels will be combined into that channel. The PIPE has a wide and beautiful stereo signal, so it is highly recommended to use a stereo connection to fully enjoy its sound.

3 Power supply socket: +12V DC, center positive. Power supply unit should be very stable and designed for at least a 0.15A load. It is recommended to use the power supply that comes with the instrument.

You can buy or make a battery based power supply for the PIPE to make it portable. Alkaline or accumulator batteries can be used.

The PIPE accepts DC input in the 10-13 volt range. This means you can use standard batteries without a step up or step down converter.

The batteries must supply current not less than 100 mA for a long time and hold the voltage in the range of 10-13 volts.

Be VERY careful with reversed polarity! The PIPE DC socket has a plus in the center!!

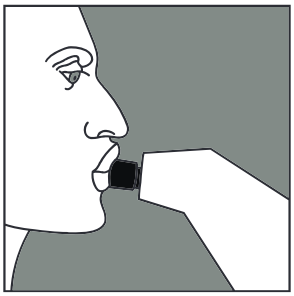
Reversed polarity will damage the breakout box and can also damage the PIPE if you are using a powerful battery!!!

4 Power switch.

5 Power indicator.

MICROPHONE

Learning how to play PIPE starts with learning how to use the microphone, which is very different from conventional vocal microphones. It uses a contact microphone. To achieve a full voice timbre with mid and low frequencies, you need to press your lips firmly and tightly against the microphone. The air inside of your mouth and inside of the microphone should form a single air pocket without significant air leaks. The main position for playing looks like this:



Singing a few centimeters away from the microphone, like you would with a standard concert mic, will result in a distant sound that lacks low and mid frequencies, and basically won't sound very good. This can be used as a separate form of articulation but should be understood by the musician. More importantly, using the PIPE in this manner increases the chance for unwanted feedback on stage.

Changing the angle of your lips and subtly changing the pressure of your lips on the mic will result in changes in the sound character and should be used as an important part of playing the PIPE.

The membrane of the microphone is made of brass and is very strong. It will not be damaged even when you blow into the microphone or suck the air out of it (of course within reasonable limits). The brass used for the microphone is resistant to the moisture that will inevitably get inside when you use the mic. You can therefore try intense sound experiments without worrying about damaging the microphone. Nonetheless, the microphone is connected to a 6.3mm TRS jack and can be removed and changed if necessary. You can purchase other microphones with a different frequency response from SOMA Lab to further expand the possibilities of the PIPE.

To fully master and enjoy this instrument you should invest a good amount of time experimenting with different ways of creating sounds and using the microphone in different ways. To get started, it's best to experiment with the REVERB algorithm with just a little bit of reverberation. This is the only algorithm that lets you hear the unprocessed microphone sound which makes it easier to understand how the microphone works on its own.

What you should try to master:

1. Press your lips firmly against the microphone, get a sound rich with lows.

2. Learn how to use the angle of your lips and their position relative to the microphone to control the amount of lows and the voice character. Also, try affecting the sound character by covering the hole in the microphone with your lips fully and partially.

3. Try blowing into the microphone. By changing the angle and the amount of the airflow, achieve different colors of noise.

4. Try blowing and singing at the same time, leaving just a small opening for the air. The result should be a beautiful sound, like that of a synthesizer that has a VCO and VCF heavily modulated by noise. Change the angle, loudness, lip shape, contact tightness and air pressure to control the sound and go from pure noise to pure note.

5. Change the shape of your mouth and tongue position as if you were throat singing, overtone singing or playing a mouth harp in order to achieve different voice timbres. Try using the PIPE to enhance these techniques to the extreme. Also, try different unusual tongue, lip and throat positions to see how it affects the sound.

6. With lips firm to ensure tight airproof contact with the microphone, try making percussive sounds and clicks with your tongue and throat. Try pronouncing consonants. This way you can discover many cool percussive sounds that can turn your voice into a drum set using the PIPE algorithms. The contact microphone will enhance many unusual sounds that are not usually picked up when a regular microphone is used for beatboxing. It will pay off using various beatboxing techniques to take full advantage of the microphone.

7. Try singing while breathing in. Try singing a note and growling the letter 'RRRR'. Try making tonal sounds while vibrating your lips and tongue, instead of your vocal chords. Generally, try other unusual ways of singing which are not typically used in music and in regular life.

8. Try pronouncing words or parts of words. Try singing and moving your mouth as if you are pronouncing words at the same time.

9. Try cupping your hand around the microphone and pressing your lips to your hand instead of directly to the microphone. This will create a resonance chamber that will change the sound character. Your hand should form a tight ring and be as air-proof as possible.

10. Combine the described techniques into a unique and expressive vocal performance. Imagine that your voice is a synthesizer and FX generator and you are in the process of controlling the instrument by turning knobs and pressing buttons.

Basically, to uncover the full potential of the PIPE, you need to set aside all that you know about conventional vocal techniques and start to experiment with your voice and the instrument without any pre-conceived notions.

ALGORITHM DESCRIPTIONS

The algorithms are very different, except for the 3 types of BASSDRUM. Each is worth exploring and mastering as a separate instrument, each has its own techniques and sound character. For the best result, find your own specific techniques for each algorithm. Remember that the PIPE is involved in the sound almost as much as your voice.

ORPHEUS

Controls assignment:
Knob • — SIZE A — controls the size of resonator A;
Knob • • — SIZE B — controls the size of resonator B;
Knob • • • — DECAY — controls decay time of the resonators;
Sensor FX — DIST — distortion.

Description:
This algorithm was the beginning of the PIPE. It consists of two virtual resonators that are triggered by your voice. The size and decay of the resonators can be controlled with the knobs. The main principle is that for each resonator size there is a strict set of frequencies that will resonate and make it produce a sound. To resonate, an even number of wavelengths must fit into the resonator size. As a result, you get a pentatonic scale with tonic wavelengths that are equal to the resonator size. With shorter wavelengths, you receive additional steps. The further the wavelength is from the resonator size, the larger the number of steps.

The scales of the two resonators are combined, and by gradually changing the resonator size you can achieve a wide range of scale combinations, from common to very unusual.

By changing the pitch of your voice you can control the resonators, exciting them on different frequencies — sort of like playing invisible strings. This is similar to how you can resonate different strings in a piano when singing with a pressed pedal if you sing in the right frequency.

Tips for using this algorithm:
It is easier to control the outcome when the voice timbre is close to a sine wave, i.e. clear and sort of creamy. You can get very good results if you press your tongue against the upper palate while pressing the lips to the microphone.

To master the algorithm, set the decay time to 70-80% and SIZE to about 30% (For most comfortable control, the minimal position of knobs is the biggest size of the resonator or smallest frequency, and the maximum knob value is the smallest resonator size and maximum frequency. By turning the knob to the right, you will be increasing the frequency.) With tight lips-to-microphone contact, make a short muted sound like the sound of the letter "T". This will excite the resonators at their main frequency (keynote). Turn the SIZE knobs to tune the resonators' keynote to be in unison, 5th, 4th interval or octave. This will give the most easily understandable and controllable scale. Now try singing a major 3rd, 4th, 5th or octave up from the keynote, exciting the resonators on different frequencies. Make sure that when you stop singing, the PIPE sounds like a dying bell or string on the needed

frequency. Learn to excite the resonators on different frequencies within a few octaves so that the PIPE produces clear notes on the decay.

Things you should try:
1. Sing glissando, quickly exciting resonant frequencies one by one.
2. Try to excite the resonators with the voice harmonics and not the main voice frequency. To do this, try something similar to overtone singing.
3. Use this algorithm with percussive sounds. To do this, make the decay time shorter.
4. Turn both SIZE knobs when playing the PIPE, like if you were playing a melody.
5. Set one SIZE knob very high and the other one very low.

FILTERRA

Controls assignment:
Knob • — FREQ — controls the frequency of the resonant bandpass filter;
Knob • • — Q — controls resonance;
Knob • • • — REV TIME — reverb time and amount;
Sensor FX — FREEZE — "freezes" the sound in the reverb into a constant infinite texture.

Description:
This algorithm combines a dynamic resonant filter with a reverb. The filter frequency depends on the FREQ knob and volume of the input. The resonance is also dynamic. The algorithm allows playing beautiful leads, something between a duduk and a synthesizer. You can also achieve various powerful percussive sounds and noises.

Using the FREEZE sensor, you can freeze the sound in the reverb creating a choir-like backtrack for lead singing parts. To do this, turn the reverb knob close to the maximum and sing a chord note by note. Then quickly touch the FX sensor. Now the choir you created will play as an infinite texture of sound and you can sing the leading part on top of it.

When FX FREEZE is in use, the reverb input is turned off and the microphone input becomes 100% dry. If you want FX on the lead part here you need to use a separate reverb or delay.

Tips for using this algorithm:
Learn to control the resonance frequency with the loudness of your voice. In order to hear the resonance frequency clearly, set the Q knob to 50-80%.

Turn the Q knob to 100% and try making percussive sounds from very low to very high by turning the FREQ knob.

Singing in unison with the resonant frequency will result in major amplification of the sound. This way you can, for example, create powerful bass sounds by setting the FREQ knob low enough. You can also create low-frequency vibrations by making sounds such as 'R-R-R' or using guttural sounds. It can be useful for creating deep basses even if you don't have a deep voice.

SYNTH

Controls assignment:
Knob • — REV MIX — controls volume level for delay/reverb;
Knob • • — LPF — controls the cut-off frequency of the dynamic low-pass filter;
Knob • • • — REV TIME — controls reverb and delay time;
Sensor FX — OCTAVER — adds an octave below.

Description:
SYNTH lets you create leads with a sound similar to a synthesizer. It features a dynamic low-pass filter with adjustable cut-off frequency, along with a reverb/delay and octaver.

Tips for using this algorithm:
When using the octaver, make your voice softer, without strong overtones, close to a sine wave.

Try making noise and percussive sounds.

REVERB

Controls assignment:
Knob • — REV MIX — controls reverb volume level;
Knob • • — DLY FB — controls delay volume level and feedback depth;
Knob • • • — REV TIME — controls reverb time;
Sensor FX — DIST DLY — adds distortion and delay (if DLY FB knob > 0).

Description:
This the simplest and easiest to understand algorithm — a reverb plus adjustable distortion and delay. When the REV MIX knob is turned down, you will hear the dry sound from the microphone. It is the only algorithm that lets you hear the unprocessed input signal. The FX sensor turns on distortion which can be used as drive for softer sounds or as saturator. By turning the DLY FB knob you will gradually add delay to the distortion and make the feedback deeper. When DLY FB approaches the maximum, the delay will start to self-oscillate, which you can stop by releasing the touch sensor. This is an extreme mode and should be approached carefully.

MADELAY

Controls assignment:
Knob • — TEMPO — controls the switching speed between delay read points;
Knob • • — FRZ TIME — controls the length of the frozen loop when the FX sensor is pressed;
Knob • • • — DLY FB — controls the delay feedback depth;
Sensor FX — FREEZE — freezes a small fragment. The length of the frozen part is determined by the FRZ TIME knob.

Description:
MADELAY is a unique delay with a read point that rhythmically jumps from one part of the delay to another, creating a number of interesting effects. The speed of the jumps is controlled by the TEMPO knob, so you can sync the effect to your track or another beat. The TEMPO in this algorithm is synced to the TEMPO in the next algorithm, so you can switch back and forth between the 2 algorithms during your performance, using it as a creative technique.

The FREEZE sensor freezes a small part of the delay, creating a synthetic effect. While holding the sensor, you can change the length and pitch of the frozen fragment using the FRZ TIME knob. You can create additional interesting effects using this knob.

The frozen fragment is located at the very beginning of the delay. To make the freeze effect noticeable, touch the sensor when there is audio input, or turn DLY FB high enough.

Things you should try:
1. Quickly pronounce words or make percussive sounds.
2. Quickly tap the FREEZE sensor turning FRZ TIME at the same time.

PULSE

Controls assignment:
Knob • — TEMPO — controls pulse frequency;
Knob • • — DECAY — controls pulse duration;
Knob • • • — REV TIME — controls reverb time;
Sensor FX — RESTART — restarts the pulse generator. Use this to sync the PIPE to a sequencer or live band.

Description:
PULSE turns your voice into a rhythmic, arpeggiated synthesizer-like sound. By adjusting the length of the pulses with the DECAY knob, you can make the pulses more distinct and clipped. Or instead, you can merge them into a big single sound. The algorithm includes a ringing reverb, giving your voice a metallic tone. The level of the effect is controlled by the REV TIME knob.

Use the FX sensor to sync the effect to a sequencer or live band.

Set the appropriate tempo and touch the sensor at the downbeat. When your finger touches the sensor, the pulse generator restarts and syncs to the performed track. If sync is lost, just touch the sensor again.

Tips for using this algorithm:
To get an expressive sound similar to a synthesizer with an arpeggiator, rhythmically sing different notes and timbres: pure notes, notes with overtones, noise sound. The rhythmic pulse will be formed by the PIPE. Work the sound into one body of melody, rhythm and timbre.

BASSDRUM

Controls assignment:
Knob • — TUNE — tunes the main frequency of the drum;
Knob • • — PITCH — controls decay time of the frequency accent;
Knob • • • — DECAY — controls decay time of the drum sound;
Sensor FX — DIST — turns on the distortion.

Description:
BASSDRUM is a voice controlled,TR-909 inspired bass drum. The algorithm is sensitive to the input sound. You can create various sound variations and accents in the drum sound, intuitively creating complex rhythms that are difficult to program on a drum machine.

The algorithm also recognizes the sound characteristics of a snare drum. This is done by analyzing the high frequencies of the input signal. If the amount of high frequencies exceeds a certain threshold, the sound of the bass drum is interrupted and the processed sound from the microphone is played instead. This means that you can freely alternate between bass

and snare drum sounds by controlling the sound input. In this algorithm, the bass drum is synthesized and the timbre of the snare drum is created by your voice.

Tips for using this algorithm:
The basic method of producing sounds in this algorithm is making a sharp, short muted sound, something between "T" and "D" sounds and a tongue click. It should be done in close contact with the microphone. You don't need to sing a bass note like in beatboxing. The bass note will be synthesized by the algorithm. In fact, all you need is a short signal that triggers the synthesis. However, the timbre, duration and other parameters of the triggering sound actively affect the sound you get as a result, and should be explored extensively.

Learn how to create a snare drum sound. With your lips slightly away from the microphone, quickly exhale into it and slowly fade out, starting with a T sound, ending in shhhh (Tsshhh). In the end you should get a sound resembling a snare drum. If it's loud enough, the algorithm will recognize it, interrupt the bass drum sound and let through the snare sound from the microphone. Learn to make grooves by alternating the bass and snare drums.

Things you should try:
1. Create drum sounds while inhaling and exhaling (more precisely, while moving the air in and out of your mouth, because you don't need to use your lungs for this). You will get different attacks for the drum that can be used for creating accents. For example, exhale on the downbeat and inhale on the upbeat to create variations.
2. Try singing different notes at the same time as triggering the bass drum.
3. Create a smooth fading-in attack with an increasing low sound.
4. Blow into the microphone. Also try making a fading-in attack by gradually increasing the air pressure.
5. Trigger the bass drum with different unusual sounds.

SWITCHABLE BASSDRUM

Controls assignment:
Knob • — TUNE — adjusts the bass frequency of the drum;
Knob • • — PITCH — controls decay time of the frequency accent;
Knob • • • — DECAY — controls decay time of the drum sound;
Sensor FX — BD TRIG — switches on the bass drum.

Description:
This algorithm is a variation of the previous algorithm, in which the direct sound from the microphone alternates with the synthesized bass drum with the use of the FX sensor. As a result, you can produce a certain groove by touching the FX sensor when you need a bass drum.

A small amount of sound from the microphone also mixes into the signal when the FX sensor is pressed and you play the bass drum. As a result, you have the ability to mix the signal from the microphone and the synthesized bass drum sound.

Tips for using this algorithm:
With your mouth, make sounds that simulate hi-hats and a snare drum, and press the FX sensor when you need a bass drum. Apply the tips from the previous algorithm.

Try playing the algorithm making various unusual sounds, not necessarily percussive ones.

BASSDRUM + SNARE

Controls assignment:
Knob • — TUNE — adjusts the base frequency of the drum;
Knob • • — SD DCY — controls decay time of the snare drum;
Knob • • • — DECAY — controls decay time of the bass drum;
Sensor FX — BD TRIG — switches the synthesis from the snare to the bass drum.

Description:
This is a variation of the two previous algorithms, with the addition of a snare drum. When the FX sensor is not pressed, a snare drum will sound. When it is pressed, it will switch to the bass drum.

OKTAVA

Controls assignment:
Knob • — DWN UP — 0–50% — sets the mode -12 -24 (one octave down + two octaves down).
Turning the knob from 0 to 50% also adds a delay.
After 50% — sets the mode -12 +12 (one octave down + one octave up).
Turning the knob beyond 50% does not change anything;
Knob • • — HF — adds a high-frequency side-tone, similar to that of a cello bow side-tone;
Knob • • • — SHIM FB — adds a shimmer effect;
Sensor FX — CLEAN-12 — leaves only one octave down regardless of the DWN UP knob.

Description:
OKTAVA is a combination of octave pitch shifters, a filter and a delay. This algorithm will significantly change the voice timbre, with a number of interesting effects. When the DWN UP knob is turned below 50% you can create a deep bass pad. Above 50% you can get a surreal lead sound.

In the "-12 -24" mode, the HF knob adds a high frequency tone, bringing the sound closer to a bass section in a string orchestra.

In the "-12 -24" mode you can use growling, inhale singing or other unusual techniques to create calls of different beasts or songs of supernatural creatures.

GENERATOR

Controls assignment:
Knob • — BASS — controls lower frequencies;
Knob • • — MID — controls mid-range frequencies;
Knob • • • — HIGH — high-frequencies and the delay;
Sensor FX — DLY-FB — turns on the delay and turns off self-oscillation.

Description:
This is one of the most unusual algorithms of the PIPE. It includes a voice-controlled sound generator, filters, ring-modulation and a delay with dynamic feedback.

If you make a long and loud sound, the feedback level in the delay will exceed 100% and part of the sound will freeze in a self-oscillating delay until the input level goes down. You can also stop self-oscillation by touching the FX sensor.

Tips for using this algorithm:
Create intense rhythmic patterns by combining percussive and tonal sounds. In this algorithm, you can use techniques that won't produce sounds in other algorithms. For example, generate sounds by a slow change of pressure inside the microphone by sucking out the air or blowing into it.

Using the FX sensor, add stereo-delay in some parts of the composition, e.g. to emphasize the downbeat. For a purer sound, turn the HIGH knob to zero.

Learn to control the self-oscillation of the delay with the loudness of your voice. For maximum clarity, turn all knobs to their maximum. The FX sensor should not be pressed.

ХАРЧО! ხარჩო!

Controls assignment:
Knob • — DIST MIX — adds additional distortion;
Knob • • — DIST LPF — controls the cut-off frequency of the additional distortion;
Knob • • • — REV TIME — controls reverb time;
Sensor FX — EXTREME — turns on extreme distortion.

Description:
Harcho is a national Georgian beef soup with rice, walnuts and tkemali sour sauce. The soup is rich in spices, with lots of garlic and green vegetables. It's much thicker than other soups and fucking delicious. As for the PIPE, Харчо (Harcho in English) is the name of the most extreme algorithm, combining 3 types of digital distortion, a delay/reverb, and a low-pass filter.

The Georgian word "Harcho" sounds a bit "harsh" for a reason. If you're in the need for extreme noise and power electronics, this is it.

Angelic and diabolical choirs, alien seagull screams, voices from the underworld and many other hair-raising sounds can be achieved with this algorithm.

The FX sensor adds extreme distortion that has an inverted performance which makes the quietest sound loud as thunder. Please note: Press the FX sensor in Харчо! only if you have a loud enough sound in the input. Otherwise, you will inevitably get feedback, even when you play on very quiet speakers or headphones. The feedback will not damage the speakers or the amplifier, because it's limited by the distortion, but it will produce uncontrollable sounds, which of course could be exactly what you were looking for :).

SPECIFICATIONS

Maximum input voltage	2.5V p-p
Input impedance	250 kOhm
Nominal output voltage	2V p-p
Maximum output voltage	9V p-p
Output resistance	150 Ohm
Supply voltage	12V DC (center positive)
Current consumption	80 mA
Weight of handheld part	840 grams
Cable length from PIPE to breakout box	4 meters

PACKAGE CONTENTS

1. PIPE — controller and processing unit;
2. Breakout box;
3. Standard microphone;
4. Power adapter. AC input — 90-240 V. DC output + 12 V;
5. XLR-XLR cable — 4 meters;
6. Cardboard box for storage and transportation.

Additional microphones with different sound characteristics are available for purchase, along with extra XLR-XLR cables (4 m or longer on demand). In time we may have some new accessories available for purchase. For more: www.somasynths.com

HOW TO POWER THE PIPE BY A BATTERY

You can buy or make a battery based power supply for the PIPE to make it portable. Alkaline or accumulator batteries can be used.

The PIPE accepts DC input in the 10-13 volt range. This means you can use standard batteries without a step up or step down converter.

The batteries must supply current not less than 100 mA for a long time and hold the voltage in the range of 10-13 volts.

Be VERY careful with reversed polarity! The PIPE DC socket has a plus in the center!!

Reversed polarity will damage the breakout box and can also damage the PIPE if you are using a powerful battery!!!

PIPE TEAM:

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