

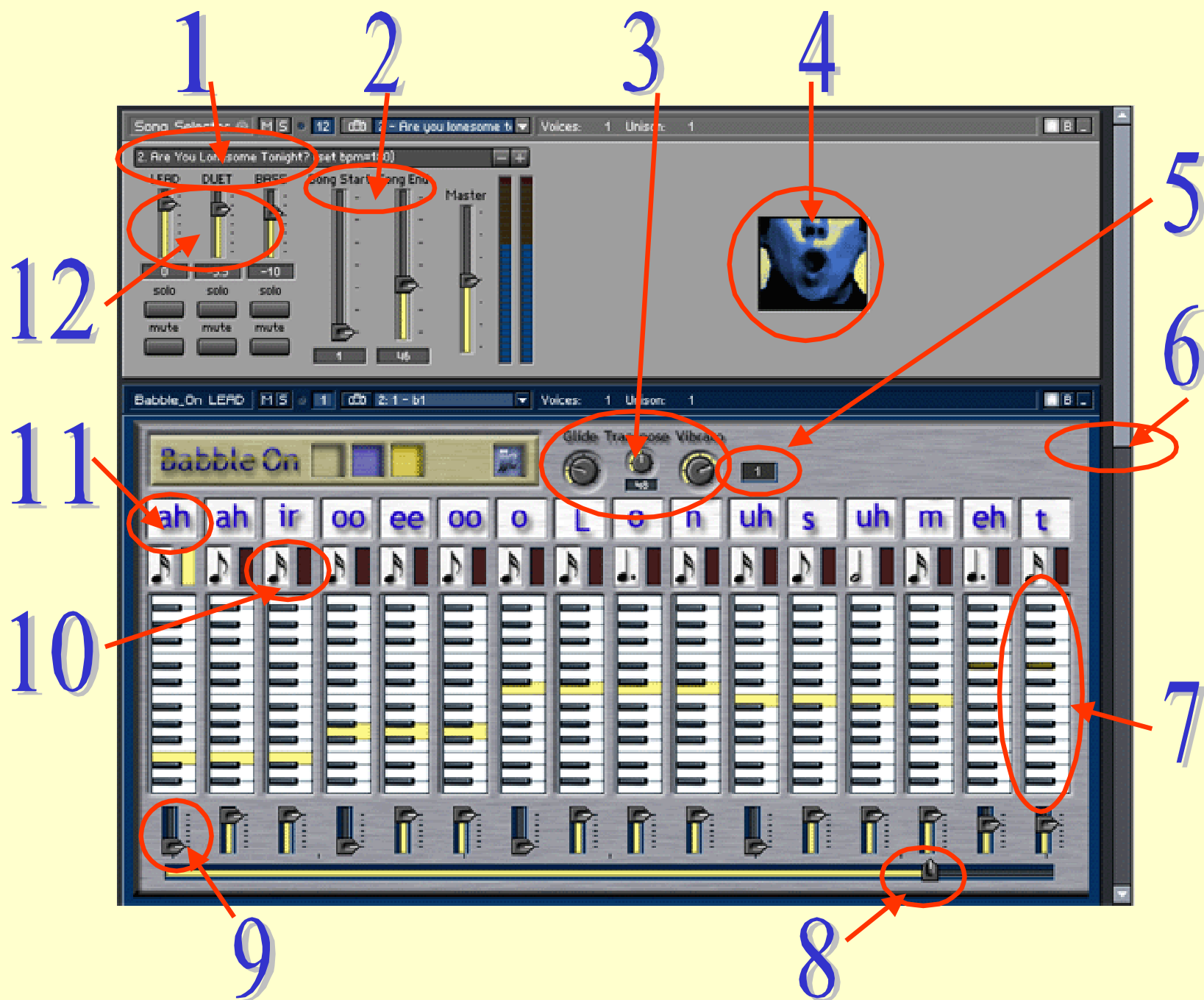
# Babble\_On – A 3-voice Speech Synthesizer for Reaktor

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## OVERVIEW

The Babble\_On ensemble comprises three Speech Synthesizer instruments with snapshot based sequencing. The ensemble can store up to 16 songs, each of which can be made up of up to 128 patterns of up to 16 phonemes each.

The speech synthesizer can generate 29 distinct phonemes. Some additional phonemes can be generated by concatenating the provided phonemes. The pitch of the synthesized voices can be adjusted over a 5-octave range. A pattern-specific transposition is available for each voice, which adjusts the pitch and shifts the vocal formants, allowing a wide range of different voice qualities (male, female, etc) to be generated.



1. **Song Select** – this selects the song to play. It actually switches the snapshot banks for each of the Babble\_On instruments.
2. **Song Start/End** – these select the pattern numbers (snapshot number) at which song playback begins and ends.
3. **Glide/Transpose/Vibrato** – these can be set independently for each pattern. The transpose both shifts the pitch up or down and shifts the formant frequencies, modeling the difference in formants for men, women, and children.
4. **Lip Reading Display** – this shows the mouth shape for the currently playing phoneme (for the topmost Babble\_On instrument).
5. **Pattern Number** – shows the number of the currently playing pattern (snapshot).
6. **Scrollbar** – use this to scroll down to the other two Babble\_On instruments.
7. **Keyboard** – use this to set the pitch of the phonemes in the current pattern.
8. **Pattern Length** – this sets the last step in the displayed pattern. Phonemes after this point will not be played.
9. **Amplitude** – sets the amplitude of the phoneme associated with the pattern step.
10. **Note Length** – sets the length of the associated pattern step.
11. **Phoneme Select** – chooses the desired phoneme to play. 29 different phonemes are available.
12. **Voice Mixer** – set the levels of the 3 individual Babble\_On instruments. They can also be individually muted or soloed.

## How to Use

The first thing to understand in using Babble\_On is that the sequencer in the Babble\_On instrument is *snapshot*-based. Different songs (up to a total of 16) are selected by loading different snapshot *banks*, one bank to a song.

When you press the **START** button in the Reaktor toolbar, the pattern selected by the **Song Start** slider will be loaded, by selecting the associated snapshot in the current bank, and the pattern will start playing. The pattern will progress one step at a time, until the step selected by the pattern's **Last Step** slider is reached. At this point, the next pattern or snapshot (in numerical order) is loaded, and the new pattern is played. This process continues until the pattern selected by the **Song End** slider has been played. When this last pattern has been played, the sequencing stops.

If you want to create your own song, start by using the song select control to select an unused song bank. Then enter your phoneme patterns, one snapshot at a time, beginning with snapshot #1. Remember to overwrite the snapshot when you have entered the phoneme pattern information! Go to the next snapshot by appending the current one, and enter the new phoneme pattern information. Continue adding patterns/snapshots until your song is done.

## List of Available Phonemes

ee

As in “BEET”

ih

As in “BIT”

eh

As in “BET”

a

As in “BAT”

ah

As in “BOUGHT”

oo

As in “BOOT”

o

As in “BOAT”

uh

As in “BUT”

ir

Provides “R” sounds

ou

As in “SHOULD”

L

m

ng

As in “SING”

n

b

g

d

p

k

t

f

sh

s

th

v

zh

z

th

h

(unvoiced) As in “THIN”

(voiced) As in “THEN”

## Some other phonemes can be obtained by combining certain of the given phonemes:

**W** – combine the phoneme “OO” with some other vowel. If the W is at the beginning or middle of a word, place the second vowel after the “OO” phoneme, otherwise if the W is at the end of a word, place the second vowel before the “OO” phoneme.

E.g. to produce “WE”, concatenate the “OO” and “EE” phonemes. The “OO” phoneme should be rather short in duration.

**Y** – similar to the creation of a W, but use the phoneme “EE” instead of “OO”. E.g. to produce “YOU”, concatenate the “EE” and “OO” phonemes. The “EE” phoneme should have a short duration.

**CH** – Concatenate the “T” and “SH” phonemes.

**J** – Concatenate the “D” and “ZH” phonemes.

To get the right sound, you need to enter data phonetically, rather than just spelling out the words.

For example, here is how to enter the phrase “*Are you lonesome...*”



Note: These phonemes have their amplitudes set to zero, and hence will be silent. It is still important to set these silent phonemes correctly, as they can affect the sound of the phonemes before and after. A good rule of thumb is to set the silent phonemes to be the same as the next vowel to be expressed. The pitch of the silent phonemes should be set to the pitch of the next non-silent phoneme, to avoid any undesired glitchy pitch transition.