

Playing Surface

The playing surface is the screen you will spend the most time using in MorphWiz. It is highly configurable. Many option buttons can be placed directly on the playing surface for easy access, but the only button that cannot be removed is the button that opens the menu. The surface can be configured from a single octave range with two notes to a six-octave range with 73 notes, and many synthesis and visualization options are available in the menus.

The octave buttons move the range of the playing surface up or down an octave at a time. The presence of these buttons on the playing surface is selected in the controls menu.

The start-note selector chooses the bottom note on the playing surface. If you choose a note that is not in the current scale, the next highest note will be used as the bottom note for the playing surface. This is not the root of the scale, which is chosen in the scale menu; it is just the note at which the playing surface starts. The presence of this on the playing surface is selected in the controls menu.

The octave selector allows you to quickly jump to a particular octave offset, unlike the octave buttons,

which only move one octave per press. Also, the octave selector shows the current range of the playing surface relative to a piano keyboard. To change the octave, either tap on the octave selector or slide the red range window to the desired offset. The presence of this is selectable in the controls menu. The start-note selector and octave selector share the same location on the screen, so only one of these can be on the playing surface at a time.

To assist your playing, note names, scale degrees, and pitch lines can all be displayed on the playing surface. The pitch degrees and pitch lines are color-coded, starting with red at the root of the scale, cycling through the colors of the rainbow, and returning to red for the root. These are all independently configurable on the display menu.

The preset selector allows quick access to saved presets. Tapping on the preset name opens the full preset menu, and tapping on the arrows scrolls through the list. The lock button locks the current playing surface and only loads the synthesis and display options from new presets.

The input-delay button chooses whether the current output of the synthesizer is fed into the delay line. The infinite-delay button overrides the delay feedback

setting and feeds the delayed signal at unity gain so it does not decay. The delay buttons can be shown or hidden, as a group, from the controls menu.

The round-initial button determines whether new notes are automatically tuned. If it is active, all new notes will be tuned to the nearest note. Otherwise, the pitch of a new note is determined by the precise location of the touch. The lock-pitch button deactivates sliding, so all notes are always in tune. These two buttons can be shown or hidden, as a group, from the controls menu.

The Magic Slider is a special slider that can be linked to the chorus-rate slider or the modulation-depth slider. The linkage for this slider, and the option to hide it, are available in the controls menu.

The menu-open button opens the full menu to allow access to all options of MorphWiz.

Top-Level Menu Options

The save-preset button, on the opposite side of the screen from the delay and pitch playing-surface buttons, opens a dialog for naming and saving the current settings as a preset.

The load-preset button opens a menu for browsing, loading, and managing presets.

The close button closes the menu and returns the playing surface to full-screen.

Wave Menu

The wave menu gives you options for choosing a wave or pair of waves and how those waves are affected by vertical movement on the screen or the accelerometer. If the accelerometer options are not available (x tilt and y tilt), this is because MorphWiz does not support accelerometer input on your platform.

The start-wave selector lets you choose the wave that anchors the bottom of the screen, far left tilt, or far backward tilt, depending on the mapping option. The slider also lets you adjust a ratio between the selected wave and the end wave. This allows the start wave to, for example, not only be a pure sine or pure triangle wave, but also a mix between sine and triangle.

The end-wave selector lets you choose the wave that anchors the top of the screen, far right tilt, or far forward tilt, depending on the mapping option. The slider, like the start-wave slider, allows selection of a

ratio between the start and end waves.

The fixed-wave selector lets you choose a single wave to be used. While this wave does not change with input parameters, it can still be a ratio between waves, which is adjusted by the slider.

Synth Menu

The synth menu lets you choose the type of synthesis and appropriate parameters if frequency modulation or wave sync are chosen.

The frequency-modulation selection gives you the option to choose the frequency ratio, depth of modulation, and mapping of depth change. You will hear a different note with frequency modulation active; you can hear this change by setting depth to 1.00 and the mapping type to grid and moving your finger from the bottom of the screen, which has a pure wave, to the top of the screen, which has full modulation. If the compensate-pitch option is activated, the pure wave will be shifted so the modulated note matches what the playing surface shows. Settings of $1/2$, $1/4$, and $1/8$ for modulation frequency ratio result in shifts of one or more octave, which can also be helpful if the pitch-shifting behavior is a problem.

The wave-sync selection gives you the option to choose the sync ratio, mapping of the sync ratio, and range and speed of a sweep to that ratio on note attack.

Scale/Range Menu

The scale/range menu lets you choose the total range of the playing surface and the active degrees and root of the scale. For choosing the notes of the scale, you can either choose a preset option from the list or you can activate and deactivate individual degrees by tapping the appropriate buttons.

Pitch Menu

The pitch-rounding-rate slider determines how quickly notes are tuned after sliding to a new note and, if the round-initial option is off, on the initial attack of a note. Higher values indicate faster rounding and lower values indicate slower rounding.

The transposition slider allows the playing surface to be transposed up to 12 semitones up or down.

The tuning slider allows the playing surface to be transposed up to 50 cents up or down.

Volume/Detune Menu

The master-volume slider is applied at the end of the signal processing chain to determine the final output volume of MorphWiz. If you hear any clipping or distortion in the synthesized audio, lower the setting on this slider to correct it.

The vertical-grid-bottom-volume slider determines the relative volume of the bottom of the playing surface to the top of the playing surface. At 0.0, notes will fade to silent as they are moved to the bottom of the playing surface. At 1.0, the volume of notes will not change at all as they are moved to the bottom of the playing surface.

The panning-width slider controls how strongly left-right position corresponds to left-right position in the stereo field. At 0.0, the position on the playing surface does not affect position in the stereo field. At 1.0, notes on the far left of the playing surface are panned hard left and notes on the far right of the playing surface are panned hard right.

Each note is synthesized by two oscillators. If the unison-mode-detuning slider is set to 0.0, these sliders are both tuned to exactly the center pitch for each note. This slider allows the oscillators to be tuned up to 50 cents from the center pitch in either direction.

The unison-mode-panning slider determines where the two oscillators for each note are placed in the stereo field. If the slider is set to 0.0, they are both placed in the center. At 1.0, they are panned hard left and hard right.

Attack/Tremolo Menu

The attack-speed slider adjusts how quickly notes reach full volume. Lower values correspond to a faster attack.

The decay-speed slider adjusts how quickly notes fade upon release. Lower values correspond to a faster decay.

The tremolo-rate slider adjusts the frequency of the tremolo effect, in cycles per second.

The tremolo-depth slider adjusts the amplitude of the tremolo effect. This parameter can be mapped to the

vertical grid or, if available on your device, the x or y axis of the accelerometer.

Delay Menu

The delay-rate slider adjusts the length of the delay line, in seconds. Delay rate is adjustable from 0.0 to 4.0 seconds.

The delay-feedback slider adjusts the volume at which the delayed signal is put back into the delay line. A value of 0.0 results in no delay, and a value of 1.0 results in an infinite delay. If the infinite-delay option is active, this value is ignored.

The delay-volume slider determines the volume at which the delay is mixed into the audio output. Note that this is independent of delay feedback.

The delay-width slider determines the width of the ping-pong effect on delay. A value of 0.0 results in a mono delay, and a value of 1.0 results in the maximum ping-pong effect.

Chorus Menu

The chorus-depth slider controls the extent of the chorus effect. A value of 0.0 deactivates the effect, and a value of 1.0 provides the maximum effect.

The chorus-rate slider adjusts the frequency of the chorus effect, in cycles per second. The rate is adjustable from 0.5 to 3.0.

Display Menu

The background selector chooses the visualization for the playing surface background. The options are: floating dark, floating bright, blue waves, red waves, purple river/wind, galaxy/vortex, and plain black.

The wave slider controls the size of the wave visualization that is centered on the playing surface. A value of 0.0 makes the wave disappear, and a value of 1.0 makes the wave fill the entire playing surface.

The pitch-lines slider controls the opacity of the pitch lines on the playing surface. A value of 0.0 makes the pitch lines disappear, and a value of 1.0 makes them fully opaque.

The note-label selectors allow you to place note-name or scale-degree labels at the top and bottom of the

playing surface. The labels at the top and bottom are independent of one another (one can be note name and the other note degree), and either can be hidden, also.

The touch-type selector chooses the visualization that is shown under each touch point on the playing surface. The ring, point, and fire are all glowing-white effects, and the wave is a smaller version of the wave-type visualization that is shown in the middle of the screen.

The preset-name switch controls the appearance of the preset-name label at the top of the screen. This label is not shown when the menu is open, so you will not see an immediate change on the playing surface when this switch is changed.

Controls Menu

The delay-buttons switch controls whether the input-delay and infinite-delay buttons are shown on the playing surface. When these buttons are deactivated, they are still shown, with decreased opacity, when the menu is open. These buttons, along with the pitch buttons, magic slider, and menu-open button, can be placed on the left or right side of the screen.

The pitch-buttons switch controls whether the round-initial and lock-itch buttons are shown on the playing surface. When these buttons are deactivated, they are still shown, with decreased opacity, when the menu is open.

The octave-buttons switch allows the octaves button to be shown or hidden. When the octave buttons are hidden, they are still shown, with decreased opacity, when the menu is open. The octave buttons are placed at the top of the screen, on the same side as the magic slider, delay buttons, and pitch buttons.

The preset-selector switch allows the preset selector to be shown or hidden. The preset selector is the panel that sits at the bottom of the screen. It includes buttons for scrolling through presets, a button to lock the pitches of the playing surface when a new preset is loaded, and a button with the current preset name that, when tapped, opens the full preset-load menu.

The note/octave selector allows the starting-note selector or octave selector to be placed at the top of the screen, next to the octave buttons.

The magic-slider selector allows the magic slider to be hidden or linked with the frequency-modulation-depth

slider or the chorus-rate slider.

The control-side selector allows the playing-surface controls (magic slider, delay buttons, and pitch buttons) to be placed on the left or right side of the screen. When the menu is open, the save-preset, load-preset, and menu-close buttons are placed on the opposite side from the playing-surface controls.

The email-preset button opens a dialog for emailing the current app settings. This can be useful for backing up presets, and it can also be a great way to share presets with friends. When a user with MorphWiz taps on the link in the email, the complete app settings, including playing-surface configuration and visualizations, are loaded into MorphWiz on that device. Only iOS devices can open MorphWiz preset links.

The credits button opens a credits screen. This screen tells you all about the lovely people who contributed to this app. It also shows a happy little flying wizard, because flying wizards, like bow ties, are cool.