Waves Tune Pitch-Correction Plug-In

FIELD TEST

by Barry Rudolph

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One of five plug-in processors in the new Waves Vocal Bundle (which also includes DeBreath, an automatic vocal inhalation/exhalation controller, Renaissance DeEsser, Renaissance Channel Strip and Waves Doubler), Waves Tune corrects the pitch of monophonic sources, smooths note transitions, and allows for detecting and editing natural vibratos. It does all this while preserving formants, the groups of frequencies that characterize vowel sounds. Formants are extremely important for keeping

pitch-shifted vocals sounding natural.

GETTING READY TO START

Waves Tune runs as a ReWire client on PCs under Windows XP and Macs running OS 10.3 and above. Hosts that support Waves Tune include Pro Tools TDM or LE (Versions 6.9 and 7), Cubase SX 3.1, Nuendo 3.1, Digital Performer 4.6 and Logic 7.1. Waves Tune's large interface (via ReWire) lets you operate the host's transport controls and set loop start/stop points any place from within the plug-in; there is no need to refer to another program or screen. I installed the Vocal Bundle into a Mac G5 Quad Core with 4.5 GB of RAM running Pro Tools 7.1cs4 on an HD3 PCIe system.

Before any correction can occur, Waves Tune must scan the audio file. Its memory is capable of holding up to 10 minutes of audio. The software has a latency of 3,072 samples at 44.1- and 48kHz, and 6,144 samples at 88.2- or 96kHz sample rates. As a workaround, I found it good practice to copy the track to be tuned, scan it and then offset to match the original. You could also rely on Waves Tune to report its latency to automatic delay compensation in the host program.

LOADED AND READY TO GO

In my first test, I put Waves Tune to work on a female singer who has extraordinary pitch control to see if I could improve on her ability. Before I scanned, I set the four setup sections for optimal performance.

The **Global Correction** section lets you set reference pitch (usually A=440Hz); select formant correction on/off; set Range to specify the tuner's frequency detection span--from Generic or the maximum range to singer ranges such as bass, baritone, tenor, alto, mezzo soprano, and soprano. Global pitch shift defines a constant shift in equal tempered semitones up to +/- 12 half steps.

Segmentation and Scale Selection designates the key of the song and note scale used. Note scale is a kind of filter that allows only notes in a user-defined scale. Tune will adhere to any of 43 different scales including many non-Western scales or chromatic to allow every half step.

Note Tolerance sets the length of note segment blocks predicated on the moment the note stops and/or starts a significant pitch change. This is a note pitch change sensitivity control I found very important when tuning vocal melismas and portamento where many separate note segment blocks are required to accurately track an elaborate vocal run or adlib.

Lastly, if desired, the **Vibrato** button let me set the target note as the average pitch of the detected vibrato. This defaults to off, but--as with all of the previously mentioned parameters--you can make changes and apply them to any section(s) later after your initial scan. You can undo/redo any step in your pitch-correction session within a maximum of 32 steps.

WHAT YOU SEE

Waves Tune's Edit window includes a scanned track overview waveform, a sharp/flat tuning gauge, plug-in automation, load/save settings and MIDI export. Tune sends out MIDI note data for double-tracking your vocals with an instrument. Underneath and spanning the width of the window is the Timeline ruler that shows song position in Bars/Beats, Minutes/Sec or Samples.The Pitch Editor section shows a piano keyboard positioned vertically on the left side of the window to serve as a reference and to indicate the sung note and/or input received from a MIDI keyboard. After scanning, the audio's original pitch is shown as an orange waveform superimposed by the corrected pitch in green. While in play, these waveforms parade across the window with the currently sung vocal notes always in view.

Each note resides within a white note-segment block that aligns in a grid to the keys of the piano's keyboard. Each key/block spans100 cents with a faintly rendered centerline marked at 0 cents. Mousing over any key or block instantly displays the pitch including cents in the Position window.

Within these blocks, you can see just how sharp or flat each note is in relation to exact, perfect pitch. Vibrato is clearly visible. Waves Tune also tracks and corrects the pitch center of notes with heavy vibrato, while maintaining sound quality and the vibrato's intensity and shape.

The Correction Parameters section has three controls: Speed, which determines how fast Waves Tune corrects pitch; Note Transition to adjust the correction speed from note block to note block; and Ratio, an overall correction-intensity control. I found that the default settings worked best when tuning my female singer.

Graphical Tools
The eight tools in the Graphical Tools Section facilitate microscopic changes. The default tool is the Note tool for dragging single or multiple note blocks to different pitches. Note changes into a Trim tool for lengthening or shortening notes by grabbing and dragging a corner of any block. (WOW!) The Zoom tool is for zooming in/out on any block and Slice splits up single notes into more notes. The Glue tool sticks one note to another--even different pitched notes--the clicked note will take on the other's pitch. The Pencil Tool is for redrawing pitch curves and the Line tool draws straight pitch lines that I wish offered a choice of quantizing to 0 cents. The very handy Hand or Navigation tool lets you grab and pull the Edit window in any direction.

Vibrato
If you have enable vibrato segmentation, the Vibrato section controls natural vibrato or adds synthetic vibrato to any note. Synthesized vibrato parameters are: sine, triangle, saw up and down waveforms, depth, pre-delay and rate up to 20Hz.

TUNING, 1-2-3
I found that certain notes sounded better when not strictly tuned, particularly in blues/rock music. Fine-tuning the Correction controls provided me with everything from smooth, natural transitions to jagged and quantized robotic moves.

With my female singer, I restructured the chorus melody by simply dragging a note block to the desired pitch. Lengthening notes works great for small increases, and I added vibrato to a note or two. I also tried removing vibrato for an interesting effect that leaves only the amplitude component of natural vibrato.

Tuning vocals can be time-intensive, meticulous work, but I found that Waves Tune elevates the entire process with its elegant operation and superior sound quality. I found that I could tune twice as fast as on other systems and be more pleased with the results. Price: $600, stand-alone; $1,000, part of Vocal Bundle.

Waves, 865/909-9200, www.waves.com.

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