AUTOTALENT v0.2 reference card

Major Scale / Minor Scale

Scale Parameter table. Top column headers = Major Scale key; bottom column headers = Minor Scale key.

Scale Parameter ＼ Major	A	Bb	B	C	Db	D	Eb	E	F	Gb	G	Ab
A			-1		-1		-1			-1		-1
Bb	-1			-1		-1		-1			-1	
B		-1			-1		-1		-1			-1
C	-1		-1			-1		-1		-1		
Db		-1		-1			-1		-1		-1	
D			-1		-1			-1		-1		-1
Eb	-1			-1		-1			-1		-1	
E		-1			-1		-1			-1		-1
F	-1		-1			-1		-1			-1	
Gb		-1		-1			-1		-1			-1
G	-1		-1			-1		-1		-1		
Ab		-1		-1		-1			-1		-1	
Minor →	Gb	G	Ab	A	Bb	B	C	Db	D	Eb	E	F

Scale parameters used to specify major and minor scales.
−1 entry in table: note is not in scale (parameter −1).
Blank entry in table: note is in scale or snap to note (parameters O and 1).

Values of OUTPUT SCALE ROTATE used to change musical modes.

Rows = Output Mode, Columns = Input Mode. (MAJOR = Ionian, MINOR = Aeolian.)

Output ＼ Input	IONIAN	DORIAN	PHRYGIAN	LYDIAN	MIXOLYDIAN	AEOLIAN	LOCRIAN
IONIAN	0	-1	-2	-3	3	2	1
DORIAN	1	0	-1	-2	-3	3	2
PHRYGIAN	2	1	0	-1	-2	-3	3
LYDIAN	3	2	1	0	-1	-2	-3
MIXOLYDIAN	-3	3	2	1	0	-1	-2
AEOLIAN	-2	-3	3	2	1	0	-1
LOCRIAN	-1	-2	-3	3	2	1	0

CONTROL INPUTS:

CONCERT A
Value in Hz of middle A, used to tune the entire algorithm.

FIXED PITCH
Pitch (semitones) toward which pitch is pulled when PULL TO FIXED PITCH is engaged.
FIXED PITCH = O: middle A
FIXED PITCH = MIDI pitch − 69

PULL TO FIXED PITCH
Degree to which pitch is pulled toward FIXED PITCH. O: use original pitch.
1: use FIXED PITCH.

NOTES in SCALE
Specifies to various parts of the algorithm whether each note is: not in the scale (−1), in the scale (O), or in the scale and snapped toward (1).

CORRECTION STRENGTH
Strength of pitch correction. O: no correction. 1: full correction.

CORRECTION SMOOTHNESS
Smoothness of transitions between notes when pitch correction is used.
O: abrupt transitions. 1: smooth transitions.

PITCH SHIFT
Number of notes in scale by which output pitch is shifted.

OUTPUT SCALE ROTATE
Number of notes by which the output scale is rotated in the conversion back to semitones from scale notes.
Can be used to change the scale between major and minor or to change the musical mode.

LFO DEPTH
Degree to which low frequency oscillator (LFO) is applied.

LFO RATE
Rate (in Hz) of LFO.

LFO SHAPE
Shape of LFO waveform. −1: square, O: sine, 1: triangle.

LFO SYMMETRY
Adjusts the rise/fall characteristic of the LFO waveform.

LFO QUANTIZATION
Quantizes the LFO waveform, resulting in chiptune−like effects.

FORMANT CORRECTION
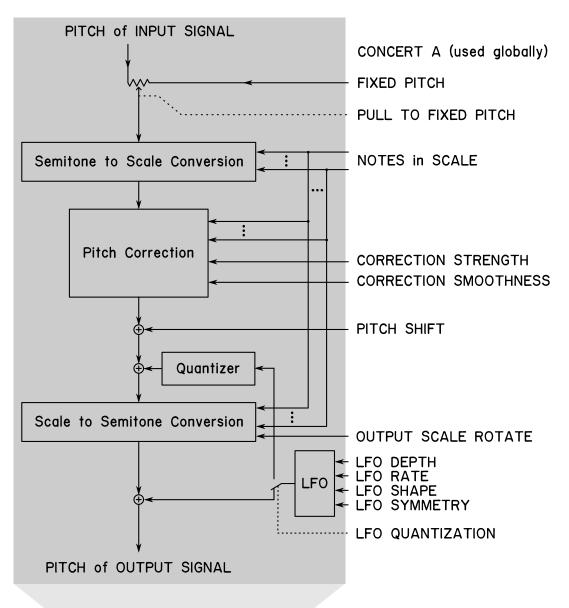Enables formant correction, reducing the "chipmunk effect" in pitch shifting.

FORMANT WARP
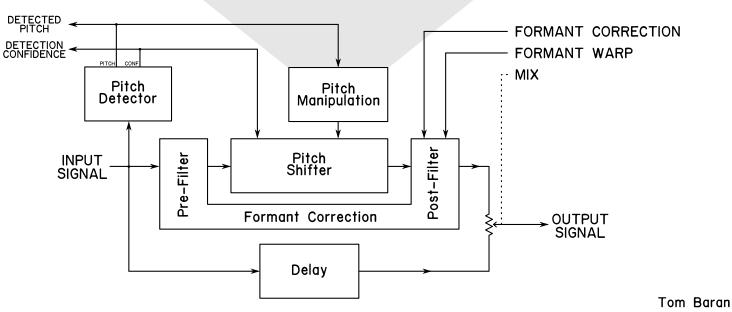Warps the formant frequencies. Can be used to change gender/age.

MIX
Blends between the modified signal and the delay−compensated input signal.
1: wet. O: dry.

CONTROL OUTPUTS:

DETECTED PITCH
Detected pitch of input signal.
DETECTED PITCH = O: middle A
MIDI pitch = DETECTED PITCH + 69

DETECTION CONFIDENCE
Confidence (between O and 1) of pitch estimate. Values above ~0.7 may be considered voiced.

AUTOTALENT v0.2 reference card

PITCH of INPUT SIGNAL

CONCERT A (used globally)

FIXED PITCH

PULL TO FIXED PITCH

Semitone to Scale Conversion

NOTES in SCALE

Pitch Correction

CORRECTION STRENGTH

CORRECTION SMOOTHNESS

PITCH SHIFT

Quantizer

Scale to Semitone Conversion

OUTPUT SCALE ROTATE

LFO

LFO DEPTH
LFO RATE
LFO SHAPE
LFO SYMMETRY

LFO QUANTIZATION

PITCH of OUTPUT SIGNAL

DETECTED PITCH

DETECTION CONFIDENCE

FORMANT CORRECTION

FORMANT WARP

MIX

PITCH   CONF

Pitch Detector

Pitch Manipulation

INPUT SIGNAL

Pre-Filter

Pitch Shifter

Post-Filter

Formant Correction

OUTPUT SIGNAL

Delay