

# Overtone Cheat Sheet (Overtone 0.5.0)

| REPL helpers  |          |         |                     |
|---------------|----------|---------|---------------------|
| Documentation | odoc     | ug-doc  | find-ug find-ug-doc |
| Examples      | examples | example | get-example         |
| Shell         | ls       | grep    |                     |

| Synths      |                  |
|-------------|------------------|
| Design      | definst defsynth |
| Examples    | defexamples      |
| CGens       | defcgen          |
| Control     | ctl kill         |
| Auditioning | demo run         |

| Server            |   |
|-------------------|---|
| Startup           | boot-server boot-external-server<br>connect-external-server |
| Shutdown          | kill-server   |
| Control           | stop  |
| OSC Communication | snd recv clear-msg-queue                                    |
| Diagnostic        | server-status server-info                                   |
|                   | server-connected?   |
|                   | server-disconnected?  |
|                   | connection-info   |
| Debug             | sc-osc-log-on sc-osc-log-off                                |
|                   | sc-osc-log sc-debug-on                                      |
|                   | sc-debug-off external-server-log                            |
|                   | sc-osc-debug-on sc-osc-debug-off                            |

| Event Handling |                                    |
|----------------|------------------------------------|
| Add            | on-event on-sync-event             |
| Remove         | remove-handler remove-all-handlers |
| Trigger        | event sync-event                   |
| Synth Triggers | on-trigger remove-trigger          |

| Sound Data    |   |
|---------------|---|
| Buffers       |   |
| Create & Free | buffer buffer-free                        |
| Read & Write  | buffer-read buffer-write! buffer-fill!    |
|               | buffer-set! buffer-get buffer-save        |
|               | buffer-data buffer-read                   |
|               | buffer-info num-frames buffer-id          |
| Samples       |   |
| Create        | load-sample load-samples sample defsample |
| Playback      | mono-player stereo-player                 |
| Busses        |   |
| Create & Free | control-bus audio-bus free-bus            |
| Modify        | bus-set! bus-set-range!                   |

| Nodes & Groups |  |
|----------------|--|
| Create         | node group node-free group-free<br>group-clear |
| Manipulate     | node-run node-stop node-place node-control     |
|                | node-control-range node-map-controls           |
|                | prepend-node append-node                       |
|                | node-tree                                      |

| Algorithmic Composition |                                 |
|-------------------------|---------------------------------|
| Chance                  |                                 |
| Choice                  | choose choose-n weighted-choose |
| Dice                    | weighted-coin ranged-rand       |
| Scaling                 |                                 |
| Range                   | scale-range                     |
| Rounding                | closest-to round-to             |
| Trig                    |                                 |
| Scaled                  | cosr sinr tanr                  |

| Music                  |   |
|------------------------|---|
| Pitch                  |   |
| Ratios                 | unison octave fifth sixth third<br>fourth min-third min-sixth |
| Note Shifting          | shift flat sharp invert                                       |
| Notes, Scales & Chords | note octave-note resolve-scale                                |
|                        | scale-field nth-interval                                      |
|                        | resolve-degree degree->interval                               |
|                        | degrees->pitches  |
|                        | resolve-degrees scale   |
|                        | resolve-chord chord nth-octave                                |
|                        | nth-equal-tempered-freq                                       |
|                        | interval-freq   |
| Frequencies            | canonical-pitch-class-name                                    |
|                        | cent midi->hz hz->midi  |
| Amplitude              | db->amp   |

| Studio      |   |
|-------------|---|
| Instruments |   |
| Drums       | kick small-hat c-hat o-hat round-kick snare<br>snare2 tom |
| Piano       | piano   |
| Sampler     | granular  |
| Synth       | tick ping tb303 mooger rise-fall-pad pad                  |
|             | buzz bass grunge-bass ks1 ks-stringer fm-demo             |
|             | harmonic-swimming whoahaha bubbles                        |
|             |   |
| IO          | mic   |
| Effects     |   |
| Mixer       | volume pan inst-volume inst-out-bus inst-fx<br>clear-fx   |
| FX          | fx-noise-gate fx-compressor fx-limiter                    |
|             | fx-sustainer fx-reverb fx-echo fx-chorus                  |
|             | fx-distortion fx-rlpf fx-rhpf                             |
| Metronome   |   |
| Create      | metronome   |
| bps         | beat-ms   |

| Visualisation  |                           |
|----------------|---------------------------|
| Scope          |                           |
| Create & Reset | scope pscope reset-scopes |

| CGens       |               |
|-------------|---------------|
| Audio In    | sound-in      |
| Oscillators | pm-osc square |
| Mix         | mix splay     |

| UGen Helper Constants |   |
|-----------------------|---|
| Done Actions          | NO-ACTION PAUSE FREE FREE-AND-BEFORE<br>FREE-AND-AFTER FREE-AND-GROUP-BEFORE<br>FREE-AND-GROUP-AFTER<br>FREE-UPTO-THIS FREE-FROM-THIS-ON<br>FREE-PAUSE-BEFORE FREE-PAUSE-AFTER<br>FREE-AND-GROUP-BEFORE-DEEP<br>FREE-AND-GROUP-AFTER-DEEP FREE-CHILDREN<br>FREE-GROUP |
| FFT Windows           | SINE HANN RECT  |
| Lines                 | LINEAR LIN EXPONENTIAL EXP  |
| Onset Analysis        | POWER MAGSUM COMPLEX RCOMPLEX PHASE<br>WPHASE MKL   |
| Infinity              | INFINITE INF  |

| Unary UGens |   |
|-------------|---|
|             | neg not-pos? abs ceil floor frac sign squared cubed<br>sqrt exp reciprocal midicps cpsmidi midiratio<br>ratiomidi dbamp ampdb octcps cpsoct log log2<br>log10 sin cos tan asin acos atan sinh cosh tanh<br>distort softclip rect-window han-window wel-window<br>tri-window |

## Binary UGens

+ - \* / mod = not= < > <= >= min max and or xor  
round round-up round-down atan2 hypot hypot-aprox  
pow ring1 ring2 ring3 ring4 difsqr sumsqr sqrrsum  
sqrdif absdif thesh amclip scale-neg clip2 excess  
fold2 wrap2

## B Equalization Suit UGens

b-low-pass b-hi-pass b-all-pass b-band-pass  
b-band-stop b-peak-eq b-low-shelf b-hi-shelf

## Buffer IO UGens

play-buf t-grains buf-rd buf-wr record-buf  
scope-out local-buf max-local-bufs set-buf  
clear-buf

## Chaos UGens

quad-n quad-l quad-c cusp-n cusp-l gbman-n  
gbman-l henon-n henon-l henon-c latoocarfian-n  
latoocarfian-l latoocarfian-c lin-cong-n lin-cong-l  
lin-cong-c standard-n standard-l fb-sine-n  
fb-sine-l fb-sine-c lorenz-l

## Compander

amplitude compander normalizer limiter

## Delay UGens

delay1 delay-n delay-l delay-c comb-n comb-l  
comb-c allpass-n allpass-l allpass-c buf-delay-n  
buf-delay-l buf-delay-c buf-comb-n buf-comb-l  
buf-comb-c buf-allpass-n buf-allpass-l  
buf-allpass-c

## Demand UGens

demand duty t-duty demand-env-gen dseries dgeom  
dbufrd dbufwr dseq dser dshuf drand dxrand dswitch1  
dswitch dwhite dbrown dibrown dstutter donce dpoll

## Envelope UGens

done free-self pause-self free-self-when-done  
pause-self-when-done pause free env-gen linen  
i-env-gen

## Fixed Frequency Oscillator UGens

f-sin-osc klang klank blip saw pulse p-sin-grain

## FFT UGens

fft ifft pv-mag-above pv-mag-below pv-mag-clip  
pv-local-max pv-mag-smear pv-bin-shift pv-mag-shift  
pv-mag-squared pv-mag-noise pv-phase-shift90  
pv-phase-shift270 pv-conj pv-phase-shift  
pv-brick-wall pv-bin-wipe pv-mag-mul pv-copy-phase  
pv-copy pv-max pv-min pv-mul pv-div pv-add  
pv-mag-div pv-rand-comb pv-rect-comb pv-rect-comb2  
pv-rand-wipe pv-diffuser pv-mag-freeze  
pv-bin-scramble fft-trigger

## Extra FFT UGens

pv-conformal-map convolution convolution2  
convolution2-l stereo-convolution2-l convolution3  
pv-jenson-andersen pv-hainsworth-foote running-sum

## Filter UGens

resonz one-pole one-zero two-pole two-zero apf  
integrator decay decay2 lag lag2 lag3 ramp lag-ud  
lag2-ud lag3-ud leak-dc rlpf rhpf hpf bpf brf  
mid-eq lpz1 lpz2 hpz1 hpz2 slope bpz2 median slew  
sos ringz formlet detect-silence

## Grain UGens

grain-sin grain-in warp1

## Information UGens

sample-rate sample-dur radians-per-sample  
control-rate control-dur subsample-offset  
num-output-busses num-input-busses num-audio-busses  
num-control-busses num-buffers num-running-synths  
buf-sample-rate buf-rate-scale buf-frames  
buf-samples buf-dur buf-channels check-bad-values  
poll

## Input UGens

mouse-x mouse-y mouse-button key-state

## IO UGens

disk-out disk-in v-disk-in in local-in lag-in  
in-feedback in-trig shared-in out replace-out  
offset-out local-out x-out shared-out

## Line UGens

line x-line lin-exp lin-lin amp-comp amp-comp-a k2a  
a2k t2k t2a dc silent

## Machine Listening UGens

beat-track loudness onsets key-track mfcc  
beat-track2 spec-flatness spec-pcile spec-centroid

## MDA UGens

mda-piano

## Miscellaneous UGens

pitch-shift pluck part-conv hilbert freq-shift  
g-verb free-verb free-verb2 moog-ff spring ball  
t-ball check-bad-values gendy1 gendy2 gendy3

## Noise UGens

white-noise brown-noise pink-noise clip-noise  
gray-noise crackle logistic lf-noise0 lf-noise1  
lf-noise2 lf-clip-noise lfd-noise0 lfd-noise1  
lfd-noise3 ldf-clip-noise hasher mantissa-mask dust  
dust2

## Oscillator UGens

osc sin-osc sin-osc-fb osc-n v-osc v-osc3 c-osc  
formant lf-saw lf-par lf-cub lf-tri lf-gauss  
lf-pulse var-saw impulse sync-saw wrap-index  
index-in-between detect-index shaper degree-to-key  
select vibrato index

## Pan UGens

pan2 lin-pan2 pan4 balance2 rotate2 pan-b pan-b2  
bi-pan-b2 decode-b2 pan-az x-fade2 lin-x-fade2

## Random UGens

rand-seed rand-id i-rand t-rand ti-rand n-rand  
exp-rand t-exp-rand coin-gate lin-rand

## STK UGens

stk-pluck stk-flute stk-bowed stk-mandolin  
stk-saxofony stk-shakers stk-banded-wg  
stk-voic-form stk-modal-bar stk-clarinet  
stk-blow-hole stk-moog stk-bee-three

## Trig UGens

tw-index trig1 trig t-delay send-trig send-reply  
latch gate pulse-count set-reset-ff peak  
running-min running-max stepper pulse-divider  
toggle-ff zero-crossing timer sweep phasor  
peak-follower pitch in-range fold clip wrap  
schmidt in-rect trapezoid most-changed least-change  
last-value