

SINGING BOWL PROFILE CARD - Level 1
certified by Project Explorers

Initial Note

"The idea of profiling singing bowls came into realization thanks to co-work with Polish section of Peter Hess Institute (Peter Hess Akademia Polska) and it is something unique in a world wide scale. The Singing Bowl Profile Card is a sort of sonic genealogy of a singing bowl. You can discover not only "what sings in a singing bowl", but also you will be provided with detailed meaning of this information. In other words - you will get a wider view on this beautiful instrument, which you probably hold in your hand now".

-- Krzysztof Jaros

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1. Singing Bowl Origins:

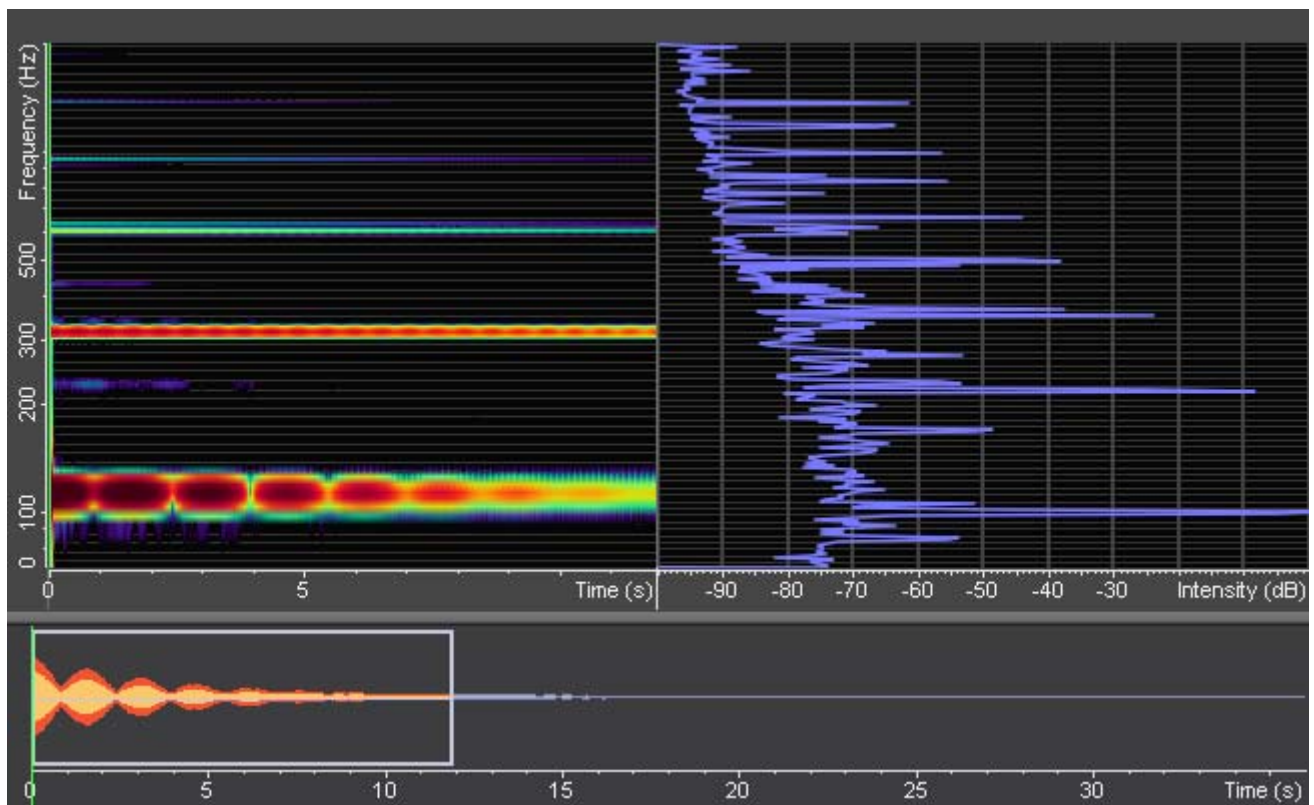
Purchase Date:

Place of Order:

Profiling Date:

2. The Singing Bowl: Spectrogram, Spectrum and General Envelope.

File length and general efficiency in range of -36dB: 36.0s / 22.5s



Amount of crucial frequency ranges in which significant peaks are present: 9

3. Comprehensive Peak Analysis in Numbers.

- Peaks are numbered according to bands of significance.
- If you provided the audio files - keep in mind, that peak measurement accuracy depends on hardware calibration (differences may reach even 1%).
- Pitch is the average frequency of a significant peak band, i.e. pitch of the pulsation within that band.
- BB states for binaural or differential beat (pulsation) generated by peaks within the significant frequency band; note that at multiple peaks per band (more than 2) - there are multiple BB's listed, yet reduced according to audible overlapping pulsations.
- Bpm is BB recalculated to rhythm (beats per minute).
- Tonal and spectral efficiency is measured at 5 time points to estimate efficiency curves later.
- General efficiency (estimated) is measured within 36dB or top-to-floor time range (n.a. - fade out is longer than file length).
- P# to P1 ratio are averaged (n-th pitch per first pitch) ratios between frequency bands; useful to measure harmonic beat and consonance/dissonance factors.

Table 1: Comprehensive Peak Analysis

ID	freq [Hz]	pitch [Hz]	BB [Hz]	bpm	efficiency ranges [dB] per 4s					t [s] -36dB	P# to P1		
					t1	t2	t3	t4	t5		ratio	xOct	+Oct
P01a	111.53	111.99	0.93	55.8	-6.1	-17.5	-30.8	-38.1	-45.9	14.0	n1	n1	n0
P01b	112.46												
P02a	314.01	314.93	1.85	111	-23.1	-25.8	-28.3	-31.2	-33.6	34.5	2.812	1.406	1
P02b	315.86												
P03a	595.88	597.58	3.41	204.6	-37.1	-41.2	-45.5	-49.4	-53.4	32.5	5.336	1.334	2
P03b	599.29	629.85	3.67	220.2							5.624	1.406	2
P03c	628.02	613.79	35.81	2148.6							5.481	1.37	2
P03d	631.69												
P04a	913.29	914.19	1.81	108.6	-47.8	-54.1	-59.4	-64.3	-69.5	31.0	8.163	1.02	3
P04b	915.1	950.54	7.93	475.8							8.488	1.061	3
P04c	946.57	933.9	41.21	2472.6							8.339	1.042	3
P04d	954.5												
P05a	1365.35	1367.86	5.03	301.8	-56.2	-64.3	-71.2	-76.3	-80.8	13.0	12.214	1.527	3
P05b	1370.38												
P06a	1849.74	1876.41	1.1	66	-65.2	-73.4	-78.3	-78.3	-80.8	7.0	16.755	1.047	4
P06b	1903.07	1876.96	54.43	3265.8							16.76	1.048	4
P06c	1904.17												
P07a	2366.05	2377.61	23.12	1387.2	-65.2	-76.3	-80.8	-80.8	-84.3	5.0	21.231	1.327	4
P07b	2389.17												
P08a	2945.91	2963.69	35.56	2133.6	-65.7	-80.8	-84.3	-84.3	-84.3	5.5	26.464	1.654	4
P08b	2981.47												
P09a	3594.9	3596.89	3.98	238.8	-63.1	-80.8	-84.3	-84.3	-84.3	5.0	32.118	1.004	5
P09b	3598.88												

4. Associative Frequency Analysis - Planetary Tones and Periodic Tables.

- Planetary or periodic tone is calculated according to law of octave.
- Octavisations of periodic tones are displayed in radius of 1-2% (c.a. 17-34 cents). Ask if you need to reprofile in wider radius or in resonant ranges [Hz]. Distances are displayed in both, cents (and %) and Hz.
- Table shows real distance (in octaves) between tone and source, and octave distance to reference tuning (at 128-256Hz).
- If you provided the audio files - keep in mind, that peak measurement accuracy depends on hardware calibration (differences may reach even 1%).
- To keep things compatible with other market services, planetary tones are calculated according to Hans Cousto (if possible), author of Cosmic Octave. Keep in mind, that these tones calculated according to other resources (like Wikipedia) - may slightly differ. If needed - you may provide your own reference tones.

Table 2: Planetary/Periodic Tones

ID	freq [Hz]	oct to tuned	distance			real oct	Planetary / periodic tone
			Hz	%	cents		
P01a	111.53	-1	-0.92 0.47 -0.57	-0.82 0.42 -0.51	-14.27 7.28 -8.86	31 5 27	Year of Venus (Taurus/Libra) [Cousto] Brainwave Theta Center [others] Biorhythm (primary) - Emotional Cycle (28 days)
P01b	112.46	-1	0.44 -0.46	0.39 -0.41	6.76 -7.10	40 5	Cycle - Year of Makemake [Cousto] Brainwave Theta Center [others]
pitch01a	111.99	-1	0.91 0.01 -1.03	0.81 0.01 -0.92	14.01 0.15 -15.99	40 5 27	Cycle - Year of Makemake [Cousto] Brainwave Theta Center [others] Biorhythm (primary) - Emotional Cycle (28 days)
BB01a	0.93	-8	-0.01	-0.58	-10.06	27	Cycle - Year of Ceres [Cousto]
P02a	314.01	1	0.07	0.02	0.39	-41	Hydrogen Gamma [Cousto]
P02b	315.86	1	-1.78	-0.56	-9.78	-41	Hydrogen Gamma [Cousto]
pitch02a	314.93	1	-0.85	-0.27	-4.68	-41	Hydrogen Gamma [Cousto]
BB02a	1.85	-7	-0.00 -0.02	-0.04 -0.98	-0.73 -17.03	28 46	Cycle - Year of Ceres [Cousto] Biorhythm (secondary) - Spiritual Cycle (53 days)
P03a	595.88	2	-4.49 3.08	-0.75 0.52	-13.09 8.93	39 -2	Year of Saturn (Capricorn) [Cousto] Geomagnetic Field [Cousto]
P03b	599.29	2	-0.33	-0.06	-0.95	-2	Geomagnetic Field [Cousto]
P03c	628.02	2	0.14	0.02	0.39	-40	Hydrogen Gamma [Cousto]
P03d	631.69	2	-3.53	-0.56	-9.70	-40	Hydrogen Gamma [Cousto]
pitch03a	597.58	2	1.38	0.23	3.99	-2	Geomagnetic Field [Cousto]
pitch03b	629.85	2	-1.69	-0.27	-4.65	-40	Hydrogen Gamma [Cousto]
pitch03c	613.79	2	5.09	0.83	14.30	35	Cycle - Year of Eros [modern]
BB03b	3.67	-6	-0.01 0.03 -0.01	-0.31 0.77 -0.17	-5.33 13.36 -2.93	31 29 47	Moon Knot [Cousto] Cycle - Year of Ceres [Cousto] Biorhythm (secondary) - Spiritual Cycle (53 days)
BB03c	35.81	-2	-0.19 0.32	-0.52 0.88	-8.97 15.24	-1 40	Solfeggio X3 (treating wounds and damaged tissue) Biorhythm (secondary) - Aesthetic (43 days)
P04a	913.29	2	3.60 -3.57	0.39 -0.39	6.81 -6.77	39 31	Moon - Metonic Cycle [Cousto] Moon - Sideric Month [Cousto]
P04b	915.1	2	1.79 -5.38	0.20 -0.59	3.38 -10.20	39 31	Moon - Metonic Cycle [Cousto] Moon - Sideric Month [Cousto]
P04c	946.57	2	0.23 -8.64	0.02 -0.91	0.42 -15.88	37 55	Cycle - Year of Ceres [Cousto] Biorhythm (secondary) - Spiritual Cycle (53 days)
P04d	954.5	2	-7.70 8.50	-0.81 0.89	-14.02 15.35	37 0	Cycle - Year of Ceres [Cousto] Solfeggio X1 (reset system - return to oneness)
pitch04a	914.19	2	2.70 -4.47	0.30 -0.49	5.10 -8.48	39 31	Moon - Metonic Cycle [Cousto] Moon - Sideric Month [Cousto]
pitch04b	950.54	2	-3.74	-0.39	-6.83	37	Cycle - Year of Ceres [Cousto]

pitch04c	933.9	2	2.73 4.03	0.29 0.43	5.06 7.45	39 55	Moon Knot [Cousto] Biorhythm (secondary) - Spiritual Cycle (53 days)
BB04b	7.93	-5	-0.04	-0.52	-9.02	-12	Sun - Hypothetical Solar Cycle (Leo) [Cousto]
BB04c	41.21	-2	-0.01 -0.33	-0.02 -0.80	-0.42 -13.91	23 35	Hopi Heart Tone [Cousto] Biorhythm (secondary) - Intuition (38 days)
P05a	1365.35	3	11.10	0.81	14.02	50	Earth - Platonic (Galactic) Year [Cousto]
P05b	1370.38	3	6.07 12.50	0.44 0.91	7.65 15.72	50 41	Earth - Platonic (Galactic) Year [Cousto] Cycle - Year of Chiron [Cousto]
pitch05a	1367.86	3	8.59	0.63	10.84	50	Earth - Platonic (Galactic) Year [Cousto]
BB05a	5.03	-5	-0.03 -0.04	-0.60 -0.75	-10.36 -13.06	-1 -7	Brainwave Alpha Center [others] Solfeggio FA (connecting and relationships)
P06a	1849.74	3	-15.96	-0.86	-15.01	40	Moon - Metonic Cycle [Cousto]
P06b	1903.07	3	-9.47	-0.50	-8.64	38	Cycle - Year of Ceres [Cousto]
P06c	1904.17	3	-10.57	-0.56	-9.64	38	Cycle - Year of Ceres [Cousto]
pitch06a	1876.41	3	-3.15 17.19 -0.55	-0.17 0.92 -0.03	-2.90 15.79 -0.51	40 38 56	Moon Knot [Cousto] Cycle - Year of Ceres [Cousto] Biorhythm (secondary) - Spiritual Cycle (53 days)
pitch06b	1876.96	3	-3.70 16.64 -1.10	-0.20 0.89 -0.06	-3.41 15.28 -1.02	40 38 56	Moon Knot [Cousto] Cycle - Year of Ceres [Cousto] Biorhythm (secondary) - Spiritual Cycle (53 days)
BB06a	1.1	-7	0.00 -0.00 -0.01	0.34 -0.39 -0.91	5.79 -6.78 -15.81	23 33 31	Year of Mercury (Gemini/Virgo) [Cousto] Year of Pluto (Scorpio) [Cousto] Cycle - Year of Chariklo [Cousto]
P07a	2366.05	4	-0.48	-0.02	-0.35	41	Year of Saturn (Capricorn) [Cousto]
P07b	2389.17	4	-23.60 6.67	-0.99 0.28	-17.19 4.83	41 0	Year of Saturn (Capricorn) [Cousto] Geomagnetic Field [Cousto]
pitch07a	2377.61	4	-12.04 18.23	-0.51 0.77	-8.79 13.22	41 0	Year of Saturn (Capricorn) [Cousto] Geomagnetic Field [Cousto]
BB07a	23.12	-3	-0.17 0.04	-0.75 0.16	-12.99 2.71	33 -5	Year of Jupiter (Sagittarius) [Cousto] Solfeggio SOL (awakening intuition)
P08a	2945.91	4	-8.68 18.09	-0.29 0.61	-5.11 10.60	40 2	Year of Jupiter (Sagittarius) [Cousto] Solfeggio SOL (awakening intuition)
P08b	2981.47	4	20.21 -17.47	0.68 -0.59	11.70 -10.17	28 2	Moon - Culmination Period [Cousto] Solfeggio SOL (awakening intuition)
pitch08a	2963.69	4	-26.46 0.31	-0.89 0.01	-15.52 0.18	40 2	Year of Jupiter (Sagittarius) [Cousto] Solfeggio SOL (awakening intuition)
BB08a	35.56	-2	-0.24 0.06	-0.68 0.18	-11.82 3.16	28 -1	Year of Mercury (Gemini/Virgo) [Cousto] Solfeggio X3 (treating wounds and damaged tissue)
P09a	3594.9	4	17.90 -10.90	0.50 -0.30	8.60 -5.26	45 10	Cycle - Year of Makemake [Cousto] Brainwave Theta Center [others]
P09b	3598.88	4	13.92 -14.88	0.39 -0.41	6.68 -7.17	45 10	Cycle - Year of Makemake [Cousto] Brainwave Theta Center [others]
pitch09a	3596.89	4	15.91 -12.89	0.44 -0.36	7.64 -6.22	45 10	Cycle - Year of Makemake [Cousto] Brainwave Theta Center [others]
BB09a	3.98	-6	-0.04	-0.89	-15.55	-13	Sun - Hypothetical Solar Cycle (Leo) [Cousto]

Some energetic archetypes of planetary tones according to Cousto: **Earth (synodic day)** - dynamic, vitalizing; **Earth OM (sideric year)** - relaxing, soothing, balancing; **Platonic Year** - cheerfulness, clarity of spirit; **Moon (synodic)** - erotic communication, sexual energy; **Sun** - feeling of centering and magic; **Mercury** - intellectual communication; **Venus** - higher love energy, aspiration for harmony; **Mars** - strenght of will and focused energy; **Jupiter** - creative power and continuous construction; **Saturn** - concentration, becoming conscious; **Uranus** - power of surprise and renewal; **Neptun** - intuition, dream experience; **Pluto** - magic group dynamic.

Chakras and their archetypal energies are often associated with musical notes and through notes - with colors. And because planetary/periodic tones cross the musical system, chakras can be associated with them too. Chakra systems are usually anchored at C note, within its typical frequency range, but there are exceptions (like Cousto). Basically, there are two major chakra systems (7+1 and 12+1) and many minor and internal variations.

Chakras in typical 7+1 system (and shifts according to Cousto): 1/8 - *Muladhara* (root chakra) and bindu at higher octave = C (or **tone of Synodic Day** / G), 2 - *Svaddhistana* (sexual or navel chakra) = D (or **tone of Synodic Moon** / G#), 3 - *Manipura* (solar plexus or emotional chakra) = E (or **tone of Sun** / B), 4 - *Anahata*

(heart chakra) = F (or **tone of Earths OM - Sideric Year** / C#), 5 - *Vishuddha* (throat chakra) = G (or **tone of Mercury** / C#), 6 - *Ajna* (brow chakra) = A (or **tone of Venus** / G#), 7 - *Sahasrara* (crown chakra) = B (or **tone of Platonic Year** / F).

Chakras in (well grounded, egyptian according to Drunvalo Melchizedek) 12+1 system: 1 - Survival (C), 2 - Sexual (C#), 3 - Will-Ego (D), 4 - Solar Plexus (D#), 5 - Heart (Christ Consciousness) (E), 6 - Heart (Personal) (F), 7 - Throat (F#), 8 - Chin (G), 9 - Nose (G#), 10 - 3rd eye (A), 11 - 45deg (A#), 12 - Crown (B), 13 - 'God head' (C octave higher). 10, 11 and 12 are "pineal access" chakras.

To find out which chakras can be associated with frequencies (found in instrument) through musical notes - use preferred tuning tables 3a/b.

5. Associative Frequency Analysis - Functional Ranges, Notes and Colors.

- Octavised color is calculated according to law of octaves from light spectra frequencies, while standardized color is provided according to progressive association to notes within an octave; thus - there is a color wheel shift (for example - standardized C is red while octavised C is green). Colors are provided in standard sRGB space in visual form and html-friendly hexadecimal code (#000000) - just double click on table cell to see the values.
- Estimated note is the closest note to the frequency; midpoint between notes used - is resonant type (equal distance in Hz). Distances from notes are provided in cents and resonance [Hz]. Generally, keep in mind, that notation systems are relative (i.e. can be tuned differently), thus these values may be less important.
- Basic note equivalent (table 3a) is provided in 12-TET scientific system (logarithmic, i.e. notes are in equal ratio), at A tuned to 432Hz. Advanced note equivalents (table 3b) includes for comparison: pythagorean system at A=432Hz, harmonic system at A=432Hz and scientific at A=440Hz.
- If you provided the audio files - keep in mind, that peak measurement accuracy depends on hardware calibration (differences may reach even 1%).
- Functional ranges include: brainwaves (detailed 0-60Hz), vocal octaves that start at D according to biosonic.org (slightly modified description, tuning 12TET at A=432Hz) and experimental tonal ranges (split points: R1=27Hz, R2=81, R3=216, R4=648, R5=1728, R6=5184, R7=13824). If you have other proposals - contact us.

Table 3a: Functional Ranges, Colors, Notes

ID	freq	ranges	octavised color	standard color	12TET note (A=432)		
					note	Hz	cents
P01a	111.53	voc1 (physical) / R2	#FF9700	#5E1599	-1A#	-2.89	-44.32
P01b	112.46	voc1 (physical) / R2	#FFA900	#5E1599	-1A#	-1.96	-29.94
pitch01a	111.99	voc1 (physical) / R2	#FFA000	#5E1599	-1A#	-2.43	-37.19
BB01a	0.93	Low Delta	#E9FF00	#931E50	-8B	-0.02	-31.50
P02a	314.01	voc3 (emotion) / R3	#2700FF	#FFC600	+1D#	+8.54	+47.74
P02b	315.86	voc3 (emotion) / R3	#3400FF	#FFFF00	+1E	-7.77	-42.09
pitch02a	314.93	voc3 (emotion) / R3	#2E00FF	#FFFF00	+1E	-8.70	-47.20
BB02a	1.85	Delta	#F2FF00	#931E50	-7B	-0.04	-40.84
P03a	595.88	voc4 (heart) / R3	#006EFF	#FFC600	+2D#	-15.06	-43.21
P03b	599.29	voc4 (heart) / R3	#0061FF	#FFC600	+2D#	-11.65	-33.33
P03c	628.02	voc4 (heart) / R3	#2700FF	#FFC600	+2D#	+17.08	+47.74
P03d	631.69	voc4 (heart) / R3	#3400FF	#FFFF00	+2E	-15.58	-42.18
pitch03a	597.58	voc4 (heart) / R3	#0067FF	#FFC600	+2D#	-13.36	-38.28
pitch03b	629.85	voc4 (heart) / R3	#2E00FF	#FFFF00	+2E	-17.42	-47.23
pitch03c	613.79	voc4 (heart) / R3	#0023FF	#FFC600	+2D#	+2.85	+8.06
BB03a	3.41	High Delta	#FF6400	#333399	-6A	+0.04	+17.86
BB03b	3.67	High Delta	#FFFD00	#5E1599	-6A#	+0.09	+45.07
BB03c	35.81	Low Gamma / R1	#00C3FF	#FF8000	-2D	-0.23	-11.12
P04a	913.29	voc4 (heart) / R4	#FFC700	#5E1599	+2A#	-2.09	-3.95
P04b	915.1	voc4 (heart) / R4	#FFCB00	#5E1599	+2A#	-0.28	-0.52
P04c	946.57	voc4 (heart) / R4	#F3FF00	#931E50	+2B	-23.24	-41.99
P04d	954.5	voc4 (heart) / R4	#E5FF00	#931E50	+2B	-15.31	-27.54
pitch04a	914.19	voc4 (heart) / R4	#FFC900	#5E1599	+2A#	-1.19	-2.24
pitch04b	950.54	voc4 (heart) / R4	#ECFF00	#931E50	+2B	-19.27	-34.74
pitch04c	933.9	voc4 (heart) / R4	#FFF200	#5E1599	+2A#	+18.52	+34.68
BB04a	1.81	Delta	#FFE400	#5E1599	-7A#	+0.02	+21.32
BB04b	7.93	Alpha/Theta	#77FF00	#FF0000	-5C	-0.10	-21.08
BB04c	41.21	High Gamma / R1	#7800E7	#FFFF00	-2E	+0.76	+32.04
P05a	1365.35	voc5 (mental) / R4	#8200B2	#00FF00	+3F	-6.16	-7.80
P05b	1370.38	voc5 (mental) / R4	#8100AC	#00FF00	+3F	-1.13	-1.43

pitch05a	1367.86	voc5 (mental) / R4	#8200AF	#00FF00	+3F	-3.65	-4.62
BB05a	5.03	Theta	#5A00FF	#FFFF00	-5E	-0.03	-9.19
P06a	1849.74	voc5 (mental) / R5	#FFE000	#5E1599	+3A#	+18.99	+17.86
P06b	1903.07	voc5 (mental) / R5	#EAF000	#931E50	+3B	-36.55	-32.93
P06c	1904.17	voc5 (mental) / R5	#E9FF00	#931E50	+3B	-35.45	-31.93
pitch06a	1876.41	voc5 (mental) / R5	#FFFB00	#5E1599	+3A#	+45.66	+42.65
pitch06b	1876.96	voc5 (mental) / R5	#FFFB00	#5E1599	+3A#	+46.21	+43.15
BB06a	1.1	Low Delta	#00E6FF	#FF8000	-7D	-0.03	-40.86
BB06b	54.43	High Gamma / R1	#FF5E00	#333399	-2A	+0.43	+13.73
P07a	2366.05	voc6 (spirit) / R5	#007FFF	#FF8000	+4D	+59.44	+44.05
P07b	2389.17	voc6 (spirit) / R5	#0069FF	#FFC600	+4D#	-54.59	-39.11
pitch07a	2377.61	voc6 (spirit) / R5	#0074FF	#FFC600	+4D#	-66.15	-47.51
BB07a	23.12	High Beta	#BA0000	#1CC675	-3F#	+0.42	+31.41
P08a	2945.91	voc6 (spirit) / R5	#B30000	#1CC675	+4F#	+39.77	+23.53
P08b	2981.47	voc6 (spirit) / R5	#C40000	#1CC675	+4F#	+75.33	+44.30
pitch08a	2963.69	voc6 (spirit) / R5	#BC0000	#1CC675	+4F#	+57.55	+33.95
BB08a	35.56	Low Gamma / R1	#00D1FF	#FF8000	-2D	-0.48	-23.25
P09a	3594.9	voc6 (spirit) / R5	#FFA600	#5E1599	+4A#	-66.60	-31.78
P09b	3598.88	voc6 (spirit) / R5	#FFA900	#5E1599	+4A#	-62.62	-29.87
pitch09a	3596.89	voc6 (spirit) / R5	#FFA700	#5E1599	+4A#	-64.61	-30.82
BB09a	3.98	Theta/Delta	#70FF00	#FF0000	-6C	-0.03	-14.54

Table 3b: Notes and Standardized Colors in Other Tunings

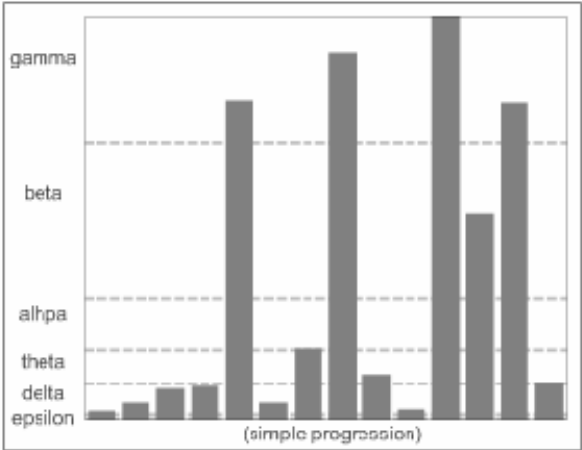
ID	harmonic (A=432)				pythagorean (A=432)				12TET (A=440)			
	std color	note	Hz	cents	std color	note	Hz	cents	std color	note	Hz	cents
P01a	#5E1599	-1A#	-0.47	-7.28	#5E1599	-1A#	-2.25	-34.55	#333399	+11A	+1.53	+23.91
P01b	#5E1599	-1A#	+0.46	+7.10	#5E1599	-1A#	-1.32	-20.17	#333399	+11A	+2.46	+38.29
pitch01a	#5E1599	-1A#	-0.01	-0.15	#5E1599	-1A#	-1.79	-27.42	#333399	+11A	+1.99	+31.04
BB01a	#931E50	-8B	-0.01	-13.91	#931E50	-8B	-0.02	-35.41	#5E1599	+4A#	+0.02	+36.73
P02a	#FFFF00	+1E	-5.99	-32.71	#FFFF00	+1E	-9.99	-54.22	#FFC600	+13D#	+2.88	+15.97
P02b	#FFFF00	+1E	-4.14	-22.54	#FFFF00	+1E	-8.14	-44.05	#FFC600	+13D#	+4.73	+26.14
pitch02a	#FFFF00	+1E	-5.07	-27.65	#FFFF00	+1E	-9.07	-49.16	#FFC600	+13D#	+3.80	+21.03
BB02a	#931E50	-7B	-0.02	-23.24	#931E50	-7B	-0.05	-44.74	#5E1599	+5A#	+0.03	+27.40
P03a	#FFC600	+2D#	-12.12	-34.86	#FFC600	+2D#	-10.94	-31.48	#FF8000	+14D	+8.55	+25.02
P03b	#FFC600	+2D#	-8.71	-24.98	#FFC600	+2D#	-7.53	-21.61	#FF8000	+14D	+11.96	+34.90
P03c	#FFFF00	+2E	-11.98	-32.71	#FFFF00	+2E	-19.98	-54.22	#FFC600	+14D#	+5.77	+15.97
P03d	#FFFF00	+2E	-8.31	-22.63	#FFFF00	+2E	-16.31	-44.13	#FFC600	+14D#	+9.44	+26.05
pitch03a	#FFC600	+2D#	-10.42	-29.93	#FFC600	+2D#	-9.24	-26.55	#FF8000	+14D	+10.25	+29.95
pitch03b	#FFFF00	+2E	-10.15	-27.68	#FFFF00	+2E	-18.15	-49.18	#FFC600	+14D#	+7.60	+21.00
pitch03c	#FFC600	+2D#	+5.79	+16.41	#FFC600	+2D#	+6.97	+19.78	#FFC600	+14D#	-8.46	-23.71
BB03a	#333399	-6A	+0.04	+17.86	#333399	-6A	+0.04	+17.86	#333399	+6A	-0.03	-13.91
BB03b	#931E50	-6B	-0.08	-37.33	#5E1599	-6A#	+0.11	+54.84	#5E1599	+6A#	+0.03	+13.30
BB03c	#FF8000	-2D	-0.19	-9.16	#FF8000	-2D	-0.19	-9.16	#FF8000	+10D	-0.90	-42.89
P04a	#5E1599	+2A#	+17.29	+33.09	#5E1599	+2A#	+3.07	+5.82	#5E1599	+14A#	-19.04	-35.72
P04b	#5E1599	+2A#	+19.10	+36.52	#5E1599	+2A#	+4.88	+9.25	#5E1599	+14A#	-17.23	-32.29
P04c	#931E50	+2B	-13.43	-24.39	#931E50	+2B	-25.43	-45.90	#5E1599	+14A#	+14.24	+26.25
P04d	#931E50	+2B	-5.50	-9.95	#931E50	+2B	-17.50	-31.45	#5E1599	+14A#	+22.17	+40.69
pitch04a	#5E1599	+2A#	+18.19	+34.79	#5E1599	+2A#	+3.97	+7.53	#5E1599	+14A#	-18.14	-34.01
pitch04b	#931E50	+2B	-9.46	-17.14	#931E50	+2B	-21.46	-38.65	#5E1599	+14A#	+18.21	+33.49
pitch04c	#931E50	+2B	-26.10	-47.72	#5E1599	+2A#	+23.68	+44.46	#5E1599	+14A#	+1.57	+2.92
BB04a	#5E1599	-7A#	+0.06	+58.36	#5E1599	-7A#	+0.03	+31.09	#5E1599	+5A#	-0.01	-10.45
BB04b	#FF0000	-5C	-0.07	-15.21	#FF0000	-5C	-0.07	-15.21	#931E50	+7B	+0.21	+47.15

BB04c	#00FF00	-2F	-0.79	-32.87	#FFFF00	-2E	+0.71	+30.09	#FFFF00	+10E	+0.01	+0.27
P05a	#00FF00	+3F	+21.35	+27.29	#00FF00	+3F	+0.01	+0.02	#00FF00	+15F	-31.56	-39.57
P05b	#00FF00	+3F	+26.38	+33.65	#00FF00	+3F	+5.04	+6.38	#00FF00	+15F	-26.53	-33.20
pitch05a	#00FF00	+3F	+23.86	+30.46	#00FF00	+3F	+2.52	+3.20	#00FF00	+15F	-29.05	-36.39
BB05a	#FFFF00	-5E	+0.03	+10.36	#FFFF00	-5E	-0.03	-11.15	#FFFF00	+7E	-0.12	-40.96
P06a	#5E1599	+3A#	+57.74	+54.90	#5E1599	+3A#	+29.29	+27.63	#5E1599	+15A#	-14.92	-13.90
P06b	#931E50	+3B	-16.93	-15.33	#931E50	+3B	-40.93	-36.84	#5E1599	+15A#	+38.41	+35.30
P06c	#931E50	+3B	-15.83	-14.33	#931E50	+3B	-39.83	-35.84	#5E1599	+15A#	+39.51	+36.30
pitch06a	#931E50	+3B	-43.59	-39.76	#5E1599	+3A#	+55.96	+52.42	#5E1599	+15A#	+11.75	+10.88
pitch06b	#931E50	+3B	-43.04	-39.25	#5E1599	+3A#	+56.51	+52.93	#5E1599	+15A#	+12.30	+11.39
BB06a	#FF8000	-7D	-0.02	-38.91	#FF8000	-7D	-0.02	-38.91	#FE4D01	+5C#	+0.02	+27.37
BB06b	#333399	-2A	+0.43	+13.73	#333399	-2A	+0.43	+13.73	#333399	+10A	-0.57	-18.04
P07a	#FF8000	+4D	+62.05	+46.01	#FFC600	+4D#	-61.21	-44.22	#FF8000	+16D	+16.73	+12.28
P07b	#FFC600	+4D#	-42.83	-30.76	#FFC600	+4D#	-38.09	-27.39	#FF8000	+16D	+39.85	+29.12
pitch07a	#FFC600	+4D#	-54.39	-39.16	#FFC600	+4D#	-49.65	-35.78	#FF8000	+16D	+28.29	+20.72
BB07a	#1CC675	-3F#	+0.12	+9.01	#1CC675	-3F#	+0.34	+25.55	#1CC675	+9F#	-0.00	-0.35
P08a	#1CC675	+4F#	+1.91	+1.12	#1CC675	+4F#	+29.91	+17.67	#1CC675	+16F#	-14.05	-8.24
P08b	#1CC675	+4F#	+37.47	+21.90	#1CC675	+4F#	+65.47	+38.44	#1CC675	+16F#	+21.51	+12.54
pitch08a	#1CC675	+4F#	+19.69	+11.54	#1CC675	+4F#	+47.69	+28.08	#1CC675	+16F#	+3.73	+2.18
BB08a	#FF8000	-2D	-0.44	-21.29	#FF8000	-2D	-0.44	-21.29	#FE4D01	+10C#	+0.91	+44.99
P09a	#5E1599	+4A#	+10.90	+5.26	#5E1599	+4A#	-46.00	-22.01	#333399	+16A	+74.90	+36.45
P09b	#5E1599	+4A#	+14.88	+7.17	#5E1599	+4A#	-42.02	-20.09	#333399	+16A	+78.88	+38.37
pitch09a	#5E1599	+4A#	+12.89	+6.22	#5E1599	+4A#	-44.01	-21.05	#333399	+16A	+76.89	+37.41
BB09a	#FF0000	-6C	-0.02	-8.68	#FF0000	-6C	-0.02	-8.68	#FF0000	+6C	-0.11	-46.31

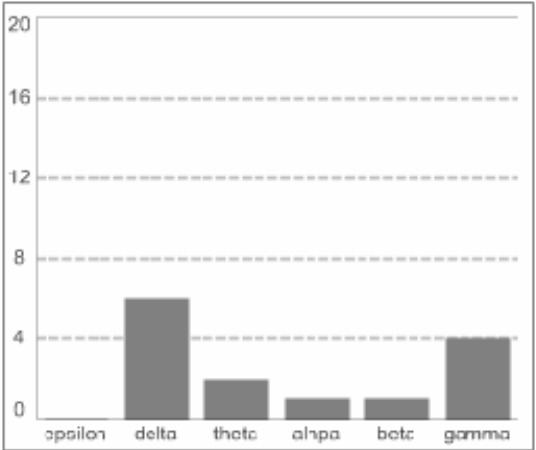
6. Binaural Beat Efficiency Analysis

- Binaural beat analysis shows simplified range split. For detailed informations check table 1 and 2.

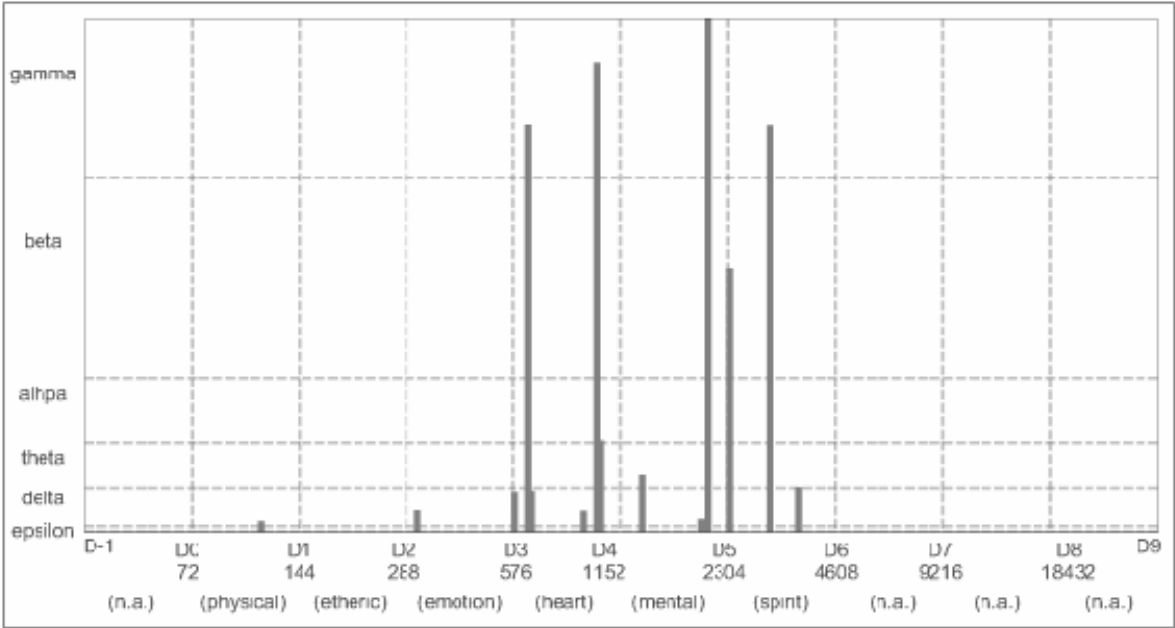
simple progression (band list) of BBs



amounts of types (saturation) of BBs



binaural beats vs functional ranges (vocal octaves)



7. Synesthesia maps

- Visual maps of sound colors. For detailed informations check table 3a and 3b

according to octavised light

color mix	#9B7F67	#97A659
color & octave	color & octave	color & octave
pitch01a		
pitch02a		
pitch03a		
pitch03b		
pitch03c		
pitch04a		
pitch04b		
pitch04c		
pitch05a		
pitch06a		
pitch06b		
pitch07a		
pitch08a		
pitch09a		

standardized at 12TET/A=432Hz

color mix	#8F7A4F	#AB5C3F
color & octave	color & octave	color & octave
pitch01a		
pitch02a		
pitch03a		
pitch03b		
pitch03c		
pitch04a		
pitch04b		
pitch04c		
pitch05a		
pitch06a		
pitch06b		
pitch07a		
pitch08a		
pitch09a		

8. HVB - Harmonic Vibrations (experimental).

HVB is a harmonic vibration pattern. It happens within 2-tone intervals, and it happens inside 3-tone chords. Harmonic vibration happens between frequencies, and it's appearance is modulated by differential beats. While it may sounds complex - it is just good to know what sort of HVB frequencies are present in the audio signal, and affect consonance/dissonance. It is a sort of "granularity" and color of vibrations - which probably affect the brainwaves in more profound ways than binaural beats.

How the HVB is calculated?

- according to peak frequencies (not pitch centers).
- according to multiple math formulas, one set is applied to intervals and one formula is applied to chords.
- within limited interval range (max 3 octaves range, above which audible sounds rather don't inter-relate).
- within limited (user defined) size of harmonic vibration due to frequency, amplitude and harmonic relationships.

Basically, in a singing bowl - the HVB represents internal consonance/dissonance structure of a complex sound, thus there is no way to clearly point on the waveform, that "this beat is this HVB". HVB's interfere with each other and with differential beats as well. Thus, audible end results have different frequency so to speak; it's a granularity that fluctuates between tones.

On practical side. If you use initial peak frequencies and combine them, in 2-tone intervals or 3-tone chords - then you will be able know the size of your HVB's. If you decide to intentionally use beating tones instead of fixed ones (binaural beats), HVB's will tell you where from additional vibrations come, and how to calculate them.

Table 4: HVB components outside binaural beats range

HVB list for peaks	HVB list for pitches
P03c->P02a-P03c/o2 // = 04.54Hz	pitch03b->pitch02a-pitch04b/o2 // = 05.77Hz
P03c->P02b-P03a/o2 // = 06.39Hz	pitch03b->pitch02a-pitch04c/o2 // = 10.87Hz
P03d->P02a-P03c/o2 // = 02.80Hz	pitch03c->pitch02a-pitch04a/o2 // = 01.54Hz
P03d->P02a-P03d/o2 // = 05.13Hz	pitch03c->pitch03a-pitch03b/o1 // = 00.15Hz
P03d->P02b-P03a/o2 // = 00.95Hz	pitch06a->pitch05a-pitch07a/o1 // = 07.35Hz
P03d->P02b-P03b/o2 // = 06.98Hz	pitch06b->pitch05a-pitch07a/o1 // = 08.45Hz
P03b->P03a-b4/o2 // = 09.08Hz	pitch03b->pitch02a-a2/o2 // = 00.01Hz
P03b->P03b-b4/o2 // = 01.93Hz	pitch04b->pitch02a-a3/o2 // = 05.75Hz
P03b->P05b-a3/o2 // = 03.70Hz	pitch04b->pitch03b-b2/o1 // = 11.53Hz
P03c->P03c-a3/o2 // = 03.67Hz	pitch04c->pitch02a-a3/o2 // = 10.89Hz
P03c->P03d-a3/o2 // = 00.03Hz	pitch05a->pitch04a-b2/o1 // = 06.85Hz
P03d->P07a-b2/o1 // = 09.17Hz	pitch06a->pitch04c-a2/o2 // = 08.61Hz
P03d->P09a-d2/o1 // = 00.77Hz	pitch06b->pitch04c-a2/o2 // = 09.16Hz
P04a->P04d-b2/o1 // = 00.89Hz	pitch07a->pitch04b-b4/o2 // = 02.52Hz
P04a->P05a-b2/o1 // = 04.54Hz	
P04b->P04b-a3/o2 // = 04.54Hz	
P04b->P04c-a3/o2 // = 01.01Hz	
P04c->P03a-a3/o2 // = 06.92Hz	
P05a->P04c-b2/o1 // = 00.75Hz	
P05b->P03b-b2/o1 // = 05.84Hz	
P05b->P05a-a4/o2+ // = 09.93Hz	
P05b->P05b-a4/o2+ // = 05.93Hz	
P06a->P03c-a4/o2+ // = 11.03Hz	
P06a->P03d-a2/o2 // = 08.00Hz	
P06a->P03d-a4/o2+ // = 04.83Hz	
P06b->P01b-a2/o2 // = 09.10Hz	
P07a->P03d-a2/o2 // = 05.65Hz	
P07a->P04a-a2/o2 // = 07.99Hz	

Graphs refer to singular activation of the instrument, in typical conditions of use. More advanced measurements are made within Level 2 of the profiling. The amplitude increase over time is not real, and is related to how the microphone works (sensitivity vs. sound pressure in spectral bands).

Time (s)	P01	P02	P03	P04	P05	P06	P07	P08	P09
0+	0	0	0	0	0	0	0	0	0
4s	-6	-4	-2	-1	-3	-5	-7	-8	-10
8s	-12	-10	-8	-7	-9	-11	-13	-14	-16
12s	-18	-16	-14	-13	-15	-17	-19	-20	-22
16s	-24	-22	-20	-19	-21	-23	-25	-26	-28