Chord Player I - Manual

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Chord Player I

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1	63/80	9/8	21/16	63/32			Play All
	Play	Play	Play	Play	Play	Play	
2	45/56	9/8	9/7	27/14			Play All
	Play	Play	Play	Play	Play	Play	
3	27/32	81/80	81/64	81/40			Play All
	Play	Play	Play	Play	Play	Play	
4	5/6	1	5/4	2			Play All
	Play	Play	Play	Play	Play	Play	
5	5/6	25/24	5/4	25/12			Play All
	Play	Play	Play	Play	Play	Play	
6	27/32	81/80	81/64	81/40			Play All
	Play	Play	Play	Play	Play	Play	
7	5/6	25/24	5/4	25/12			Play All
	Play	Play	Play	Play	Play	Play	
8	6/7	36/35	9/7	72/35			Play All
	Play	Play	Play	Play	Play	Play	
9	5/6	25/24	5/4	25/12			Play All
	Play	Play	Play	Play	Play	Play	

1 General Remarks

Chord Player I plays chords in any arbitrary microtonal tuning.

A 32-voice sine tone generator is used to synthesize the pitches. The number and relative strength of the harmonics are attenuated as the fundamental frequency increases in order to achieve a consistent sound in all registers. As the built-in miniature speakers on laptop computers are generally ill suited to reproducing sine tones, it is recommended to use external speakers or headphone for these sounds.

The number format used follows the English conventions with the decimal point as the decimal separator, not the decimal comma (as is common in continental usage).

It should work under current browsers. Suggestions or bug reports are welcome under the contact email given on the casparjohanneswalter.de webpage.

2 Functions, settings and how to use Chord Player I

2.1 Setting the concert pitch

The field Concert pitch a4 sets the pitch in Hz for a above middle c.

2.2 Setting the reference pitch

The field Pitch 1/1 defines the reference pitch. This is the pitch relative to which all other pitch indications in Chord Player I will be measured. This can be an important pitch in the tuning system such the tonic of a scale or neutral tone such as c. `Pitch 1/1` can be defined by a simple frequency in Hz or a more complicated mathematical expression such a multiple or ratio of a particular frequency in Hz.

  - If the distance between `Pitch 1/1` and a given initial frequency (e.g. the concert pitch a) can be expressed as a just interval, the reference pitch can be defined by multiplying the initial frequency by the just interval, which can be expressed as a ratio (see figure 1).

  - If the distance between `Pitch 1/1` and a given initial frequency (e.g. the `concert pitch a`) can be expressed as an equally tempered interval, the reference pitch can be defined by multiplying or dividing the initial frequency by the corresponding ratio. For 12-tone equal temperament, the ratio for a particular interval can be calculated by raising 2 to the power of n (where n = the number of semitones) divided by 12 (see figure 2).[1]

Figure 1: `Pitch 1/1` is c two octaves below middle c, expressed as 3 just fifths (plus one octave) below the `concert pitch a` = 440 Hz

Figure 2: `Pitch 1/1` is c two octaves below middle c, expressed as 33 equally tempered semitones below the concert pitch a = 440 Hz

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[1]The note displayed on the staff and the note name with deviation in cents from the nearest semitone are calculated relative to the concert pitch that has been set.

2.3 Setting the mode for entry of the chord pitches

The drop-down menu `Mode` has two options for entering the chord pitches: `ratios` or `cents`.

- Ratios indicate the frequency ratios that the Pitch 1/1 is to be multiplied by. They are entered as ratios.

- Cent values will be added to the Pitch 1/1. (An equal tempered semitone consists of 100 cents, and the octave has 1200 cents.)

2.4 Setting the number of chords

The field `Rows` can be used to set the number of chords. This number can be modified after pitches have already been entered. However, if current number of rows is reduced, chords with an index number higher than the total number of rows and all the associated pitch data will be deleted.

2.5 Saving and loading sequences of chords

After entering a chord progression, click on `Save Preset` to save this as a preset in the web application. If you would like to use this preset on another computer, click on `Export to file`. The file will automatically be saved in the download folder on your computer. These files can then be load by clicking on `Import file`. Clicking on `Delete file` deletes the current preset from the current instance of the web application.

2.6 Entering and playing the chords

The desired pitches should be entered in the fields above the `Play` buttons. Depending on the mode selected (see (2.3): `ratios` or `cents`) the pitches can be entered as frequency ratios (ratio) or as cent deviations from `Pitch 1/1`.

- Ratios: If the pitch relationships are expressed as whole number ratio, the pitches are separated by just intervals. However, ratios can also include non-whole-number terms, such as other ratios, roots, decimals numbers, logarithms etc.

- Cents: These values are added to `Pitch 1/1`. (An equal tempered semitone consists of 100 cents, and the octave has 1200 cents.) Negative values (to indicate pitches below `Pitch 1/1`) are also possible.

By clicking the `Play` the corresponding notes will be played. Clicking `Play all` plays all the notes entered in that row.

3 Offline Usage

The web application can be used offline after being opened once.