StroboPLUS HDC™ Metronome

Congratulations on your purchase of the StroboPLUS HDC™. For instructions on general operation, please see the [StroboPLUS HDC Quick Start Manual](#). For instructions and guidance on the StroboPLUS HDC Strobe Tuner, please see the [StroboPLUS HDC Strobe Tuner Manual](#). Follow this link to learn about the [StroboPLUS HDC Timer mode](#), and this link to learn the details of the [StroboPLUS HDC General Settings Screen](#).

The metronome screen is the <u>second</u> mode accessible when navigating through the StroboPLUS HDC modes by pressing the Mode Button. There are 3 main controls for operating the metronome. The Parameter Button, the Value Wheel and the Play / Pause button which does just that - starts and stops the metronome. The metronome sound can be heard through the on-board speaker or by use of the the 3.5mm TRS headphone jack which can be used for either headphones or to patch to suitable external audio equipment. The proprietary Vibe Out jack can be used to drive the Peterson Vibe-Clip accessory which allows the metronome to be felt rather than heard.

The metronome screen contains 100 presets that can be edited and saved either through the hardware interface or by the use of the Peterson Tuners website. The adjustable parameters of each preset include:

- Preset Number 1 - 100
    - Tempo (10.0 to 280.0 Beats per Minute)
    - Tempo Beat Value (Firmware version > 1.0.15: Eighth Note, Quarter Note, Dotted Quarter Note, Half Note)
    - Beats per Measure (1 to 19) / Poly Element 1 (1 to 19)
    - Meter Beat Value (2, 4, 8, 16) / Poly Element 2 (1 to 19)
    - Subdivision (Meter Dependant) / Poly Beat Value
    - Accent Pattern (Meter Dependant)
    - Preset Display Color (10 Default Colors)
    - Beat Flash (On / Off)
    - Voice (1 - 5)
    - Tempo Map (Not selectable but configured in Peterson Connect)

1 Vibe Clip Out
2 Instrument Out
3 Mode Button
4 (A) (M) Auto / Manual Button
5 ⬤ Value Wheel
6 ▶❚❚ Play / Pause Button
7 Instrument In
8 ⫼ Parameter Button
🔊 Speaker
🎧 Headphone Out
🎤 Microphone
⏻ Power Button
⛬ Micro-USB In
📶 Volume

In general, all parameters of the metronome can be easily adjusted by using a combination of the Parameter Button and the Value Wheel. Simply press the Parameter Button until the desired parameter flashes and then turn the Value Wheel to reach the value you would like. When you are done editing a parameter, you can either click IN on the Value Wheel or let the blinking parameter time-out. Tempo, however, is the default parameter and can be adjusted any time another parameter is NOT flashing. Only the decimal point of Tempo will flash to show it is ready to be adjusted. Some parameters, such as Preset Display Color, Beat Flash & Voice use shared areas of the display and will be hidden unless active by use of the Parameter Button. Switching Presets is done by adjusting the Preset Number Value. All other metronome parameters immediately save to the active Preset when adjusted. Therefore, adjusting the Preset number will load parameter values saved to that preset.
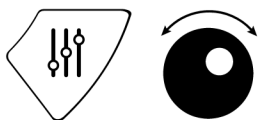
Any time a parameter value has been changed and confirmed by clicking IN on the Value Wheel, that parameter becomes first in the list when the Parameter Button is pressed again later. For example, if you recently made a change to the Subdivision of your preset, the next press of the Parameter Button will begin at the Subdivision parameter, allowing you to again change Subdivision without navigating through various other Parameters. However, pressing the Auto/Manual (A / M) button can be used as a shortcut to the Preset Parameter.

You can also 'lock' a parameter to the Value Wheel, meaning it will remain active, flashing and will never time out. This is useful when you would like to audition and compare the sound of various values without needing to press the Parameter button each time you make a change. When the desired parameter is flashing, press and hold the parameter button for 2 seconds.

When locked, the value will continue to flash and the Value Wheel can be used to adjust the value at any time *until* the Parameter Button is used to select a different parameter.

Any parameter can be set back to its default value by pressing and holding the Value Wheel for 2 seconds or until the red LED flashes once.

<u>Tempo</u>

On the metronome screen, tempo is displayed in 1/10th quarter notes per minute* which is shown by the 4 large digits in the center of the screen. (120.0) The tempo parameter can be adjusted from 10.0 to 280.0 and has a default value of 120.0.

* By default, StroboPLUS HDC calculates and displays tempo in Quarter Notes per Minute (qpm) rather than Beats per Minute so that the meter can be changed while keeping the quarter note constant. This can be changed to Eighth Note, Quarter Notes, Dotted Quarter Notes or Half Notes per minute with Firmware 1.0.15 or above.
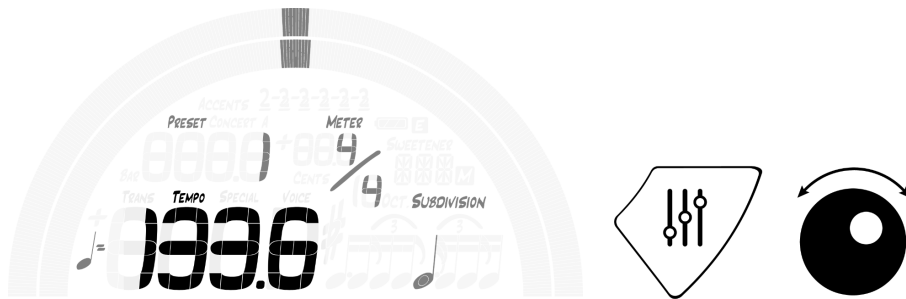
Tempo can be adjusted in 2 ways.

1. **Turning the Value Wheel** Tempo is the default editable parameter in metronome mode and is edit-able when no other parameter is active and the decimal point within the tempo value is flashing. This allows you to immediately adjust tempo by turning the Value Wheel at any time without needing to first press the parameter button. However, if the decimal point is NOT flashing, you can press the parameter button until it does flash, OR click IN once on the Value Wheel, which returns the metronome parameter selection to default.

   When the decimal point IS flashing, turn the Value Wheel to adjust tempo. Normal turning increments tempo by whole units, while pressing in and turning micro-adjusts tempo in 0.1 units. (firmware 1.0.19 and above) Remember that tempo is calculated in quarter notes per minute, and the Beat Value (denominator) of your Meter will affect the overall perceived tempo.

2. **Tap-Tempo** Tapping or Clicking IN on the Value Wheel will adjust tempo in accordance with the active Beat Value (denominator) of the meter **and** any <u>active</u> Accent Pattern. Three or more taps will define a new tempo.

If there is an active Accent Pattern specified, tempo can be set by tapping the accents of the Accent Pattern. For example, in ⅞ meter with a 2-2-3 Accent Pattern, 3 taps span the entire bar and the StroboPLUS HDC will assume you are tapping the 1's of 1,2 - 1,2 - 1,2,3. This can also be useful for a meter like 6/8 and a 3-3 accent pattern, in which case each tap will be calculated as if you are tapping a dotted quarter.

By default tempo is represented in quarter notes per minute, and the Meter Beat Value (denominator) of your Meter and the Tempo Beat Value will affect the click rate.

Tempo Beat Value

As of firmware version 1.0.15, the duration of the single beat that controls tempo is adjustable. As of firmware version 1.0.19, holding the Parameter Button while turning will allow Eighth Note, Quarter Note, Dotted Quarter Note and Half Note to be selected. This value is set to Quarter Note by default, but will automatically be set to Dotted Quarter Note when particular meters like 3/8, 6/8, 9/8 are selected.

Beats Per Measure
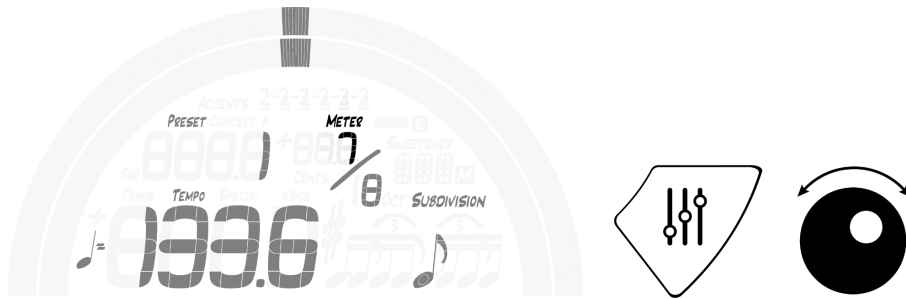
The Meter, or Time Signature, is displayed at the upper right of the metronome screen and is written like a fraction. Beats Per Measure is the numerator (top number) of this fraction and specifies the number of beats contained in 1 bar. Press the Parameter Button until the numerator of the Time Signature flashes and use the Value Wheel to adjust from 1 - 19 Beats Per Measure. Changing Beats Per Measure will clear any set Accent Pattern, as available Accent Patterns depend on Beats Per Measure.

Beat Value / Polyrhythm Element 2
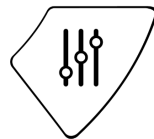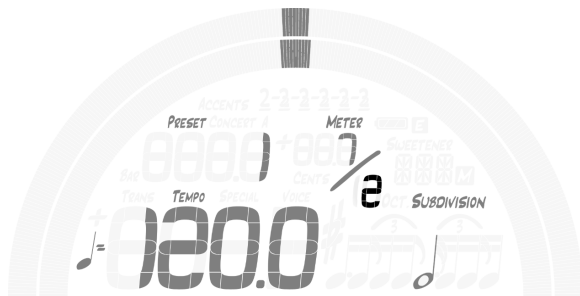
The Meter, or Time Signature, is displayed at the upper right of the metronome screen and is written like a fraction. Beat Value is the denominator (bottom number) of this fraction and specifies the value or duration given to each beat. For example, a Meter such as ⅝ means that each bar or measure is the duration of 5 eighth notes. 4/4 lasts the duration of 4 quarter notes. Press the Parameter Button until the denominator of the Time Signature flashes and use the Value Wheel to adjust to either 2,4,8 or 16.

However, a Metronome Preset can be built on the basis of Meter OR Polyrhythm. A Polyrhythm consists of two values juxtaposed upon one another within the same space. For example, a 5 against 4 Polyrhythm will have 5 beats pass in the same amount of time as 4 beats, with the '1 Beat' of both elements lining up again when the Polyrhythm repeats. In the StroboPLUS HDC,
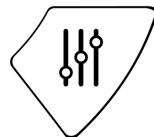
Polyrhythms are experienced in the timeframe of 1 bar or measure. You can switch the basis of your preset to Polyrhythm mode in two ways. When adjusting the Beat Value (denominator) past 16, you will see 'POL' on the display to signify Polyrhythm mode. In this mode, the denominator becomes the second element of the polyrhythm and can be adjusted from 1 to 19. Adjusting this value below 1 will switch the preset back to the default Meter based mode.

Another way to switch back and forth from the Polyrhythm and Meter modes is to press down on the Value Wheel and turn left or right when adjusting the denominator. Turning left switches to Meter and turning right switches to Polyrhythm. When in Polyrhythm mode, the Beat Value parameter is relocated to the lower right of the screen, is displayed as notation and is selectable/editable. Like in normal Meter mode, Beat Value specifies the length of one beat.

NOTE: The duration of one complete polyrhythm bar is governed by the numerator, beat value and tempo. The denominator has no effect on the duration of the bar because it is either expanded or contracted to fill the same space as the number of beats in the numerator. So, a Polyrhythm of 4 /

5 with a Quarter Note Beat Value, which is sometimes written as 4:5 / 4 is almost the same as a normal 4/4 meter, except the additional element of 5 will be heard within the same time space. When your preset is set to play a polyrhythm, Accent Pattern and Subdivision settings no longer apply.

Subdivision
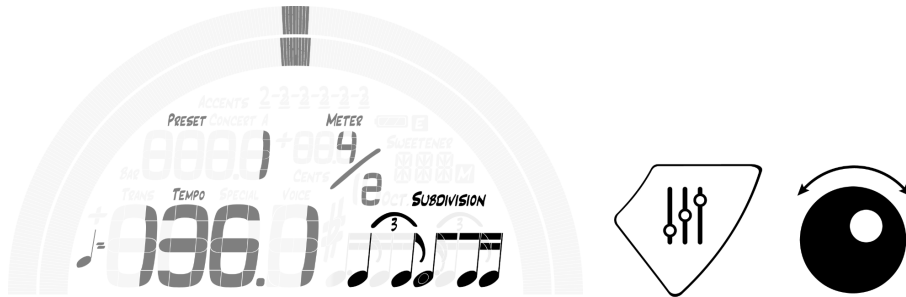
Subdivisions are notes that divide a beat into smaller parts. As an option on a metronome, they can be especially useful to practice the specific rhythmic pattern of a subdivision at various tempos, or to assist in mentally 'marking time' or longer spaces between two beats. Press the Parameter Button until the notation of the subdivision parameter flashes and then use the Value Wheel to choose from the list of available subdivisions. In the StroboPLUS HDC metronome, all subdivisions are notated correctly and the list of available subdivisions is dependent on the Beat Value of the active Meter. The default value for Subdivision in every Meter is 'None' , which is represented by the notation for one WHOLE beat; i.e. in x / 2, a half note is shown by default, in x /4 a quarter note is shown as the default value.

The number of available selectable subdivisions increases as the Beat Value decreases because a lower number means that each beat lasts longer and therefore can contain more complex subdivisions.

NOTE: The list of available subdivisions for the Meter x / 2 is the longest at over 100 options because it also contains every combination of the available subdivisions for x / 4 played next to one another. Subdivisions are NOT selectable when playing a polyrhythm.

Click Here to view the available Subdivisions for each Beat Value

Accents (Accent Patterns)
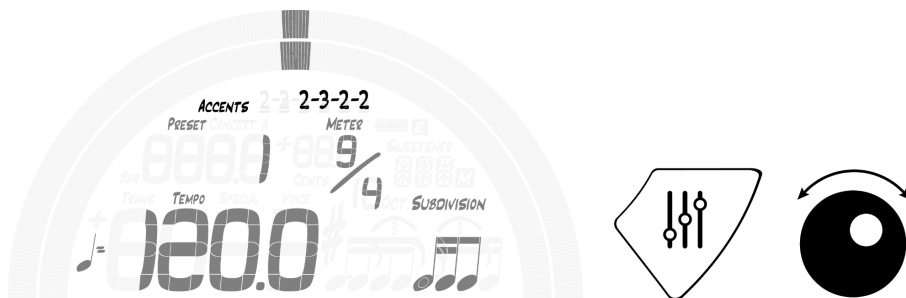
By default, the StroboPLUS HDC metronome will play the downbeat, or 'One' count, of every bar using a slightly higher pitch and volume than the remainder of beats. Accent Patterns help to divide and count Meters with extended Beats Per Measure settings. For example, a Meter such as 9 / x is rarely counted as One, Two, Three …. Nine. An Accent Pattern setting of 2 - 2 - 3 - 2 allows the Meter to be felt as:

<u>One</u>, Two, <u>One</u>, Two, <u>One</u>, Two, Three, <u>One</u>, Two.

Music in this Meter may be written and conducted with a pattern like this in mind. When an Accent Pattern is active, the Accented beats will sound slightly higher in pitch than the unaccented beats within the bar. The default metronome 'baton' will also conduct the accent pattern accordingly. Although Beats Per Measure can be adjusted from 1 - 19, Accent Patterns are only available for Beats Per Measure settings of 4 - 17. Each Beats Per Measure Setting contains its own list of available Accent Patterns composed of every possible combination of 2's and 3's. For example, 12 / x Meter will have the most available Accent Patterns.

Click Here to view the available Accent Patterns for each Beats Per Measure Setting

<u>Preset Display Color</u>

Press the parameter button until the characters COLR (COLr) appear and flash. Use the Value Wheel to view and select 1 of 10 predefined colors. The Preset Display Color can be useful for grouping similar presets or quickly identifying Presets and Tempo Maps when the Preset Number may be harder to see. These individually assigned Preset Display Colors are independent of and not affected by the Global Color for tuner presets set in the Settings Screen.

<u>Beat Flash</u>

The Beat Flash parameter can be set to ON or OFF. When ON, the default animated metronome baton is replaced with an arc shaped 'beat diagram' that lights in time with the passing Beats Per Measure or Accent Pattern (if active). The lit percentage of the arc and its position across the arc corresponds with the percentage of the entire bar that each beat represents and the current beat count. For example, in a beat like 4 / 4, the left-most quarter of the arc will be lit on Beat 1, the second quarter of the arc on Beat 2 etc… In this example the entire arc has been divided into 4 pieces which progressively flash on the beat from left to right. This helps to visualize the position within the bar and the duration of each beat as it plays.
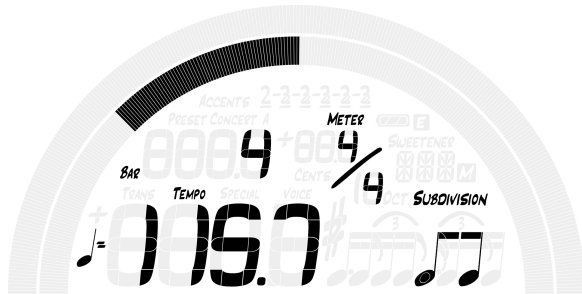
In a meter like 12/8, the arc is divided into 12 pieces. However, in a meter like 7 / 8 with a 2 - 2 - 3 Accent Pattern active, the arc is divided into 3 sections sized to the equivalent of 2 beats, 2 beats and then 3 beats. In Polyrhythm mode, two arcs will play simultaneously with the top arc following the numerator (top number) of the polyrhythm, and the bottom arc following the denominator (bottom number) of the polyrhythm. This is extremely useful to both see and hear how the 2 elements of a polyrhythm occur in relation to each other.
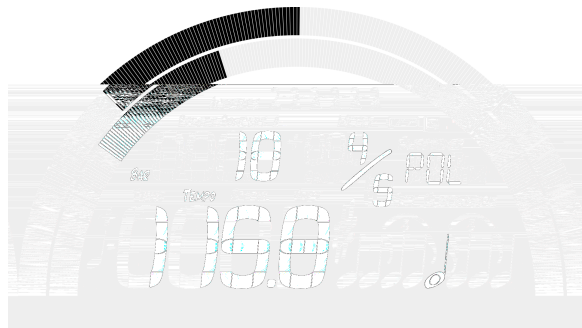
Press the parameter button until the characters 'FLSH' appear and flash. Use the Value Wheel to select either ON or OFF.
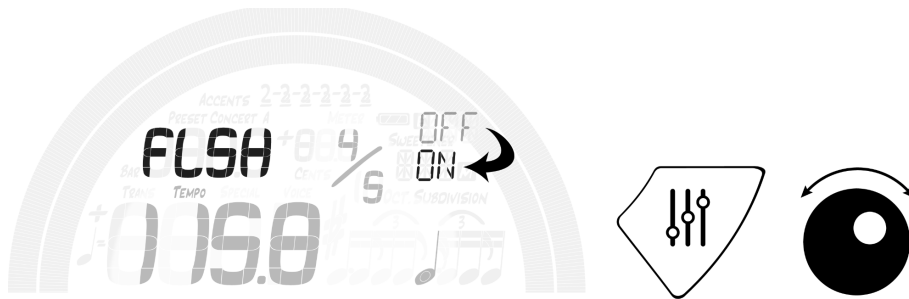
Voice
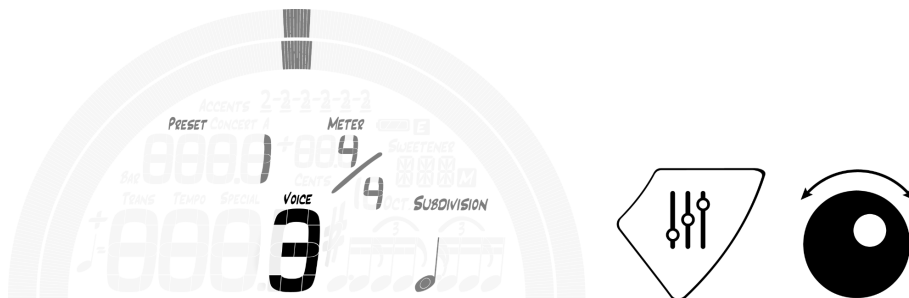
Press the parameter button until the 'Voice' label appears and the Voice value (number) begins to flash. Use the Value Wheel to view and select 1 of 5 voices. The available voices are:

1. Rimshot
2. Clave
3. Woodblock
4. Beep
5. Human*

The 'Human' voice (5) can be used to learn and to help teach the music counting system. In addition to verbally counting the beat numbers in each bar as they occur, the counting system helps to normalize the time taken up by each beat by using the common subdivision syllables. The Human voice in the StroboPLUS HDC metronome uses the following sounds:

- 'One', 'Two', 'Three', 'Four', 'Five', 'Six', 'Seven', 'Eight', 'Nine', 'Ten', 'Eleven', 'Twelve'
- Eighth Note subdivisions: ' _ And'

- Triplet Subdivisions: ' _ Ta Ta '
- Sixteenth Note Subdivisions ' _ Ee And Uh '

Although Beats Per Measure can be set from 1 - 19, Human voice will only count up to 12 and then begin again at 1 for the remainder of beats in the bar. When an Accent Pattern is active, the Human voice will count a pattern like 2 - 2 - 3 as 'One Two One Two One Two Three'.

While the individual sounds of the Human voice have been optimized to be as rhythmic as possible, some spoken numbers (in English) cannot provide as precise of a timing point as percussive instruments. Users wanting a more precise timing reference should opt for Voice numbers 1 - 4.

Metronome Configuration

The online metronome configuration tool can be used to specify up to 100 metronome presets that can then be downloaded to your device through the use of Peterson Connect. These presets can be created using all of the same parameters offered on the hardware interface that are explained throughout this document. However, the presets created with the online configuration tool can *also* be set to play tempo maps (see below) instead of simply repeating the same single preset indefinitely.

The configuration tool can only be accessed after registering the device and pairing the USB connection through the use of Peterson Connect. After your product is registered, you can access the configuration utility here: Configure Your Product

The first preset displayed in the Metronome Presets list of the Metronome Configuration page is labeled 'T' for template and always appears before preset 1. This template preset will be used to create all 100 presets unless otherwise specified. So, if the T preset is set to the color green and 134.5 tempo, presets 1-100 will be exact clones of the template unless additional presets are specified in this list. If presets 1 - 5 are specified, only presets 6-100 will carry the same settings as the T preset. This can be useful if, for example, Voice 5 and the color Purple are preferred in all cases. Set the T preset to use Voice 5 (Human Voice) and the color Purple and all unspecified presets will begin with these settings.

Use the Preset Editor on the right side of the screen to design new presets and the 'Add Preset' button to include them in the Metronome Presets list. Click on any existing preset and use the Preset Editor to make adjustments. If the 'Update' button is flashing with a red border, it needs to be clicked to save your changes. Clicking the 'Delete Preset' button will remove the preset from the Metronome Preset List. Drag and Drop presets within the list to change the order. The memory meter at the top of the Metronome Configuration page will show the amount of StroboPLUS HDC memory used by your current settings. The StroboPLUS HDC has 32k of available memory for metronome settings and is extremely difficult to entirely fill.
Dragging and dropping a Tempo Map from the "Your Stored Tempo Maps" list to the "Metronome Presets" list assigns the tempo map to a preset at the location and order in which it is dropped. At that point, "loop" and a number of bars "count-in" can be set. On the StroboPLUS HDC, the tempo map will be played when the assigned Preset number is selected and played.

Tempo Maps

Tempo Maps are a collection of the incredibly versatile StroboPLUS HDC Metronome Presets, played sequentially as bars, grouped into a single 'special' preset. A Tempo Map may consist of thousands of unique bars using all of the preset parameters outlined in this document. It can be set to loop, can begin with a count in, can contain silent 'muted' bars and can play accelerandos and ritardandos with 4 common tempo change curves.

For example, a tempo map could be created that contains 8 bars of 5/4 meter at 174.3 quarter-notes-per-minute with triplet subdivisions, a woodblock sound and is displayed in the color green. Over that 8 bars, the tempo could slow down gradually but more drastically at the end to arrive at a tempo of 118.6, in 11/8 meter with a 3-2-3-3 Accent Pattern and a Human Voice counting the beats, displayed in the color purple.

Another example would be a tempo map with 2 bars of ⅞ meter, a 2-2-3 Accent Pattern at a tempo of 120 displayed in green, followed by another 2 bars of ⅞ meter at a tempo of 120 displayed in <u>red</u>. However, the last two red bars are set to mute and nothing is heard. This tempo map is then set to loop. This would be ideal to practice keeping precise time through the silence of this atypical meter in order to arrive at the start again in perfect time with the looping metronome. Click here to view this simple [practice tempo map](#).

Click here to see an example of a [very complex tempo map](#) with many meter, tempo, color changes and gradual tempo change curves.

Tempo Maps can only be created on the Peterson Tuners [Tempo Map Designer](#), added to your device via the Metronome [Configuration Tool](#) and transferred to your StroboPLUS HDC by the use of Peterson Connect.