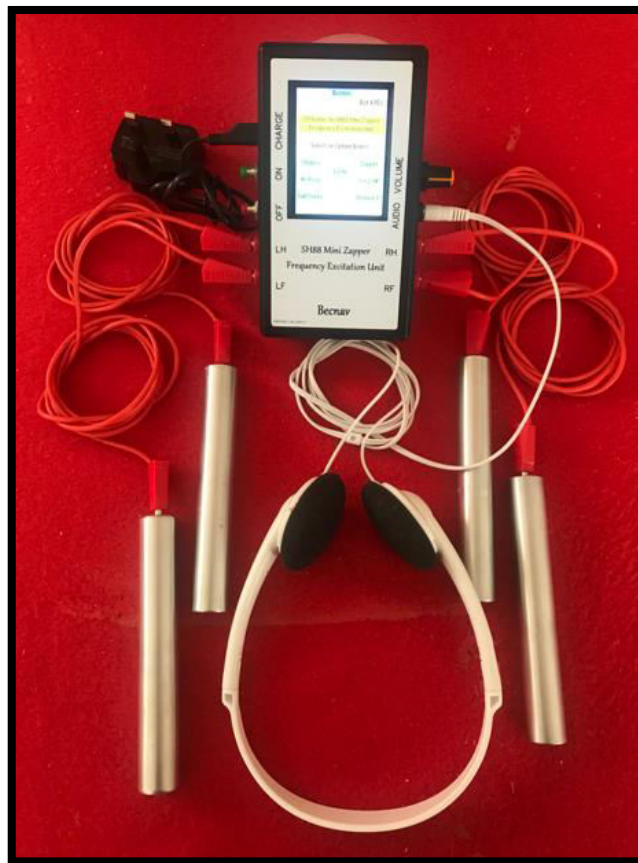


# SH88 Mini Zapper Frequency Excitation Unit



## Operating Instructions

## Recommended Voltage Settings

The recommended age group voltage settings are as follows:

Age Group	Hands Only	Feet Only	Hands and Feet
Child Age 8-9	5 Volts	5 Volts	6 Volts
Child Age 10-11	6 Volts	6 Volts	7 Volts
Child Age 12-13	7 Volts	8 Volts	9 Volts
Adult Female	8-9 Volts	9-10 Volts	10-11 Volts
Adult Male	9-11 Volts	10-12 Volts	11-12 Volts

## Caution

You should not use this device if

- You wear a pacemaker or have heart problems
- You suffer from epilepsy
- You are a child under 8 years
- You are pregnant
- You are trying to conceive

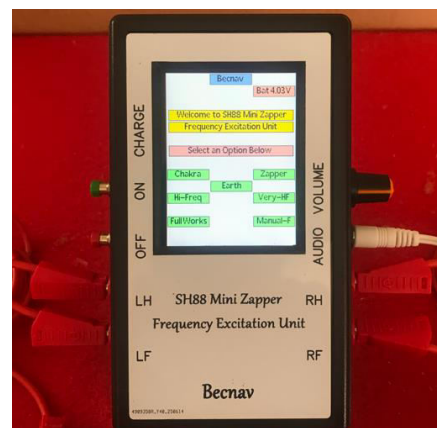
# Becnav

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<https://frequency-healing.uk> [gjb@becnav.co.uk](mailto:gjb@becnav.co.uk) +44 (0)7527 859580

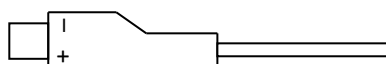
# SH88 Frequency Excitation Unit

## Introduction

The SH88 Mini Zapper Frequency Excitation Unit is a powerful low voltage (5V to 12V) sine and square wave generation unit designed to cleanse the body of a multitude of parasites and bacterial infections using selected frequencies from 174 Hz to 1MHz. There are four probe connectors for hands and feet plus a volume-adjustable audio output for headphones. Green and Red push buttons at the side turn the unit on and off. There is also a Micro-USB Type B connector for charging the battery and a red/green LED for indicating charging status. The unit has a full colour 2.8-inch touch-screen display for displaying and controlling all the feature of the device.



## SH88 Features



5V Micro USB Type-B Charger Connection

### Battery

The SH88 Frequency Excitation Unit is internally powered by a 2,000 mAh 3.7V rechargeable lithium polymer battery and can be recharged via its micro-USB Type-B connector at the side of the unit. The unit comes with a UK mains charger or USB charger cable. When the charger is connected, a fully discharged battery will take about 6 hours for a full charge. When charging the battery, the LED next to the connector will indicate RED. When charging is complete the LED indicates GREEN and charging has stopped. If the charger is disconnected or the charger power is turned off, the LED will go off. When fully charged the battery voltage is approximately 4.15 volts. The charge is considered GOOD when the battery voltage is above 3.70 Volts. If the battery voltage drops below 3.70 Volts the charger should be connected.

**The battery voltage, after turn-on, will be continuously measured and displayed at the top right of the screen.**

The Unit can be operated with the mains charger connected. No damage to the unit will result if the charger remains on for several hours after the LED goes GREEN. In normal operation, when the device is turned on and the charger is connected, the LED will always indicate RED (charging). It is not recommended however to permanently charge once the LED goes green if the device is not being used.

The unit will operate for several hours and many sessions from a fully charged battery without the charger connected.

The unit automatically shuts down after 3 minutes if paused or before and after a session to save battery power if there is no valid screen touch.

## Frequency Group Selections

There are five frequency groups as described in the table below.

Chakra	Earth Harmonics	Zapper	High Frequency	Very High Frequency
Crown 936 Hz	(26 Harm) 776Hz	30,000 Hz	120,000 Hz	200 kHz
Third-Eye 852 Hz	(25 Harm) 388Hz	24,000 Hz	110,000 Hz	300 kHz
Throat 741 Hz	(24 Harm) 194Hz	16,000 Hz	100,000 Hz	400 kHz
Heart 639 Hz		10,000 Hz	90,000 Hz	500 KHz
Solar Plexus 528 Hz		7,000 Hz	80,000 Hz	600 kHz
Sacral 417 Hz		4,500 Hz	70,000 Hz	700 kHz
Root 396 Hz		2,500 Hz	60,000 Hz	800 kHz
Extra 1 285 Hz		1,500 Hz	50,000 Hz	900 kHz
Extra 2 174 Hz		1,000 Hz	40,000 Hz	1 MHz

The three frequencies in the Earth Harmonics Group are resonant harmonics of the Earth which rotates once every 24 hours or every 86,400 seconds. This relates to a frequency of 0.00001157 Hz. If you double this frequency 24 times, 25 times and 26 times (octaves), you end up with the three frequencies in the table above.

## Manual Frequency Entry

There is an additional mode for manual frequency entry. This mode allows entry of any frequencies from 10 Hz to 999,999 Hz. All frequencies are divisions of the internal clock frequency of 48 MHz so at the higher frequencies only limited frequencies can be selected. In all cases the frequencies are accurate to within 4% and at lower frequencies better than 1%.

## Modes

There are 3 different Modes of Operation:

### 1. Manual Mode

This mode allows you to manually select any frequency in the frequency group, which will be listed in a 3 x 3 matrix (1 x 3 for Earth Harmonics) in lines 4 to 6. The frequency can be changed manually as many times as desired at any time before or during a running session.

### 2. Step-Up Mode

The Step-Up Mode will automatically step up through the 9 frequencies in the selected group starting with the lowest frequency. The time spent for each frequency will be 1/9th of the selected session time. This option is not available for the Earth Harmonics Group.

### 3. Step Down Mode

The Step-Down Mode will automatically step down through the 9 frequencies in the selected group starting with the highest frequency. The time spent for each frequency will be 1/9th of the selected session time. This option is not available for the Earth Harmonics Group.

## Full Works

The Full Works option is a special version of the Step-Up and Step-Down modes. When this option is selected, it will allow you step through all 30 frequencies shown in the four left columns of the frequency table. **It does not include the Very High Frequency Group.**

### 1. Full Works Step-Up

This option starts with the lowest frequency in each group and steps up through to the highest frequency in the group. It steps through the groups from left to right and also includes the Earth Harmonics Group. The time spent at each frequency is 1/30th of the selected session time

### 2. Full Works Step-Down

This option starts with the highest frequency in each group and steps down through to the lowest frequency in the group. It steps through the groups from right to left and also includes the Earth Harmonics Group. The time spent at each frequency is 1/30th of the selected session time

## Voltages

There are 8 different operating voltages from 5V to 12V, selectable in increments of 1V. The voltage can be changed at any time before or during a session run by touching Volts Up (+) and Volts Down (-) at the top left hand side of the display. It is automatically set to 9V following power-on or touching RESTART.

There is no danger of a possible short circuit through the body as the output wires are each internally protected by 140 Ohm resistors to limit the maximum output current.

## Session Time

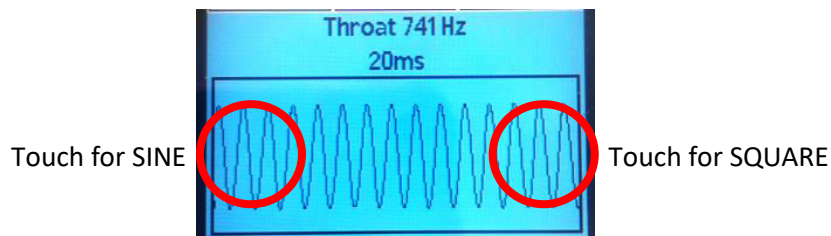
There are 8 selectable session time options, which determine the time from the start to the end of the session. The session time is automatically set to 12 minutes at power-on. The selectable session times are as follows:

The session time **must be set when requested** and cannot be changed thereafter. Once the session has started the session time is fixed and the indicated time counts down to the end of the session. To reset the session time, touch RESTART and repeat from the beginning.

3 minutes
6 minutes
9 minutes
12 minutes
18 minutes
24 minutes
30 minutes
45 minutes

## Sine Waves and Square Waves

By default, all Chakra and Earth Harmonic frequencies are transmitted as **SINE WAVES**. However Chakra and Earth Harmonics can be switched between SINE and SQUARE by touching the graphics display right (Square) or left (Sine) as shown in the red circles below.



All manual keypad entered frequencies from 10 Hz to 999,999 Hz are **SQUARE WAVES**

All Zapper, High Frequency and Very High Frequency signals are transmitted as **SQUARE WAVES**

It should be noted that the square waveforms have more than 10 times the energy of the equivalent sine waveforms. This is because the skin is an insulator and when touching the probes, it acts as a dielectric, as in a capacitor.

The square waves produced by the instrument have very fast rise and fall time (less than 50 nanoseconds), whereas the sine waves have a very slow rise and fall times compare to the square waves. Thus much more energy is transmitted through the skin by the fast rise and fall signals of the square waves than is transmitted by the sine waves.

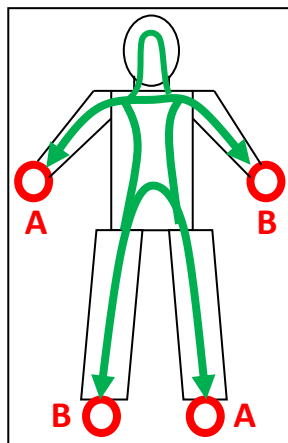
## Audio

At the side of the unit are a headphone connector and a potentiometer to adjust the volume of the headphones. The headphone connector transmits pure amplified sinusoidal signals to the headphones and covers all Chakra and Earth Harmonics audio frequencies and the four lower Zapper frequencies up to 4500 Hz. Zapper frequencies are not amplified and the volume reduces as frequency increases.

## Probes

There are two RED banana plug sockets on each side of the unit for connecting four RED probe wires. The sockets on the left are for the LEFT HAND (LH) and LEFT FOOT (LF). The sockets on the right side are for the RIGHT HAND (RH) and RIGHT FOOT (RF).

Rear View



As shown in the diagram above, current alternates between A and B at the selected frequency. The arrangement of probes produces the best overall treatment of the body.

For best effect through the whole body, the LEFT HAND (LH) and RIGHT FOOT (RF) are connected to the A waveform and the RIGHT HAND (RH) and LEFT FOOT (LF) are connected to the B waveform.

A and B are two opposing waveforms. B is always the inverse of A. So when A is HIGH, B is always LOW and visa versa.

## Operating Procedure

To turn on the SH88 Frequency Excitation Unit press the **GREEN** button at the left side of the unit. To turn off the unit press the **RED** button. After turn on the START screen will be displayed.

### Start Screen (Page 1)

The start screen instructs you to choose one of the seven options (in green) below.

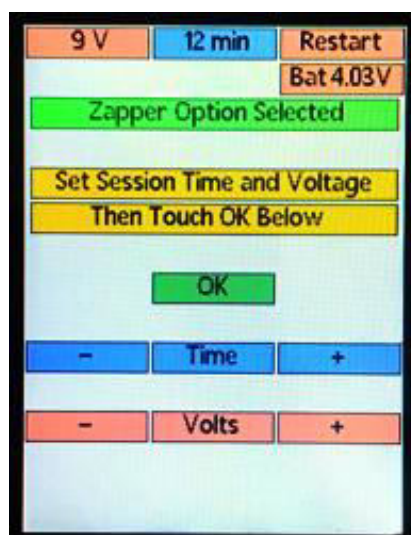


### Screen Page 2

After touching your chosen option, it will be displayed on line 3 with a green background as in the image below.

You will then be requested to select the **Session Time** and **Voltage** using the (+) and (-) boxes. Session Time and Voltage will be displayed at the top of the display. Also RESTART will be displayed at the top right if you wish to return to Start Screen (Page 1). After setting Time and Voltage continue to Page 3 by touching (OK).

**IMPORTANT:** Voltage can be adjusted later but **SESSION TIME** must be fixed now.

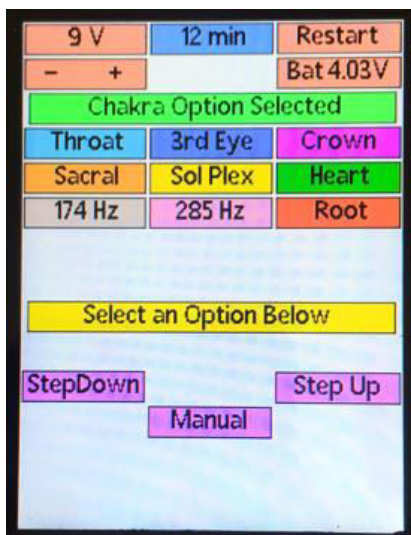




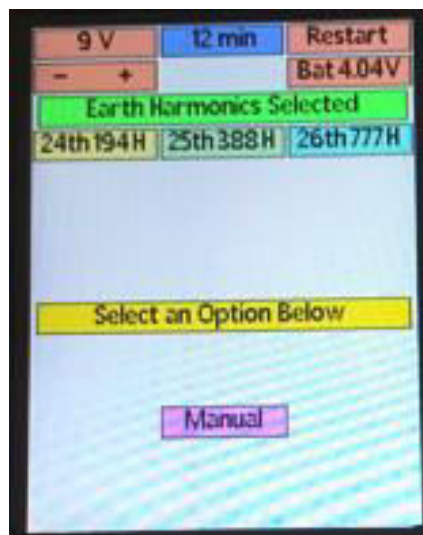
## Screen Page 3

There are 4 types of Page 3 screens depending on the option selected in Page 1 (Start Screen)

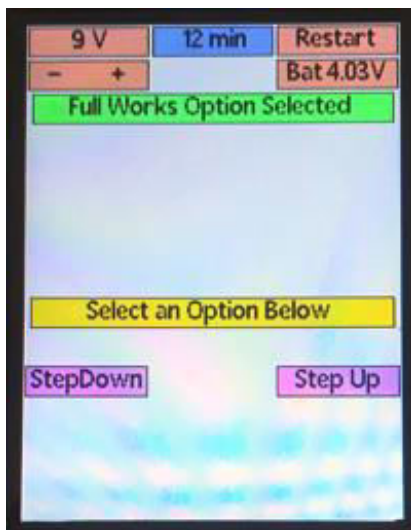
- 1) 3 options: Step Down, Step Up, Manual
- 2) 2 options: Step Down, Step Up
- 3) 1 option: Manual
- 4) Keypad for manual frequency entry



Chakra, Zapper, High Frequency,  
Very High Frequency



Earth Harmonics



Full Works



Keypad for Manual Frequency Entry

For the options: **Chakra**, **Zapper**, **High Frequency** and **Very High Frequency**, each has 9 frequencies and there are three selectable modes --- Step Down, Step Up and Manual Selection.

The **Earth Harmonics** option has only 3 frequencies and each can only be selected manually.

The **Full Works** option has two modes Step Up and Step Down through 30 frequencies.

The **Manual Frequency Entry** mode has a keypad for the entry of frequencies from 10 Hz to 999,999Hz.

### 3 x 3 Matrix Page 3 Selections

On selecting an option in Page 1 followed by OK in Page 2 the following set of 9 frequencies will be displayed in a 3 x 3 matrix in lines 4, 5 and 6 of Page 3. Each frequency has its own colour.

#### Chakra Frequencies

Chakra Option Selected		
Throat	3rd Eye	Crown
Sacral	Sol Plex	Heart
174 Hz	285 Hz	Root

Crown	936 Hz
3rd-Eye	852 Hz
Throat	741 Hz
Heart	639 Hz
Solar Plexus	528 Hz
Sacral	417 Hz
Root	396 Hz
Extra 1	285 Hz
Extra 2	174 Hz

#### Zapper Frequencies

Zapper Option Selected		
16 kHz	24 kHz	30 kHz
4500 Hz	7000 Hz	10 kHz
1000 Hz	1500 Hz	2500 Hz

#### High Frequencies

High Frequency Selected		
100 kHz	110 kHz	120 kHz
70 kHz	80 kHz	90 kHz
40 kHz	50 kHz	60 kHz

#### Very High Frequencies

Very High Frequency Selected		
800 kHz	889 kHz	1 MHz
500 kHz	600 kHz	706 kHz
200 kHz	300 kHz	400 kHz

A request to select the Mode Option will be displayed below the selected 3 x 3 Matrix as shown below.

Select an Option Below		
StepDown	Manual	Step Up

### Earth Harmonics Page 3 Selections

This option has only a Manual Mode and a choice of 3 frequencies.

#### Earth Harmonics

Earth Harmonics Selected		
24th 194 H	25th 388 H	26th 777 H

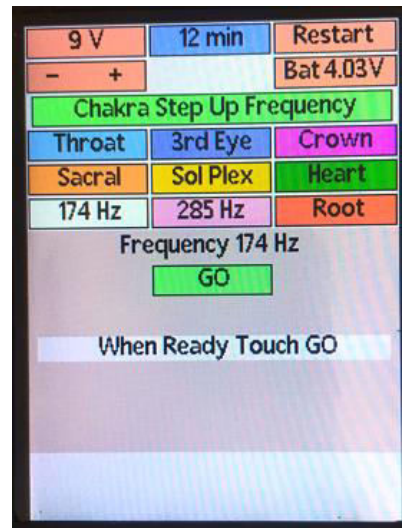
24th Harmonic	194 Hz
25th Harmonic	388 Hz
26th Harmonic	777 Hz

## Page 4 --- Step Down and Step Up Modes

On touching Step Down or Step Up, the following image will be shown in Page 4  
Similar images are shown for Zapper, High Frequency and Very High Frequency options.



Step Down takes the purple background colour of CROWN (highest frequency first) and makes the CROWN box background white

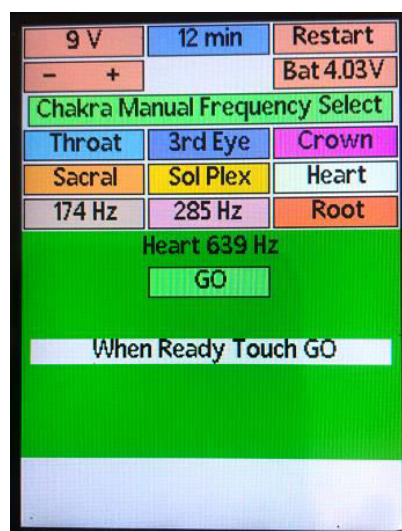
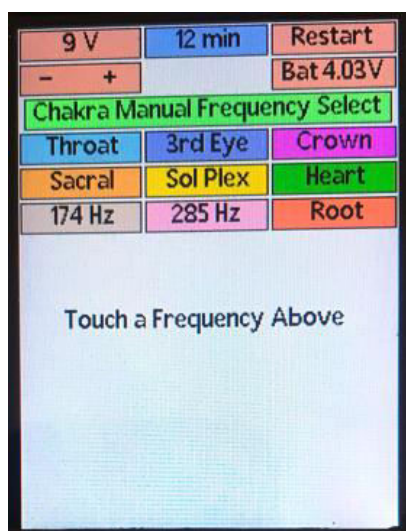


Step Up takes the grey background colour of 174 Hz (lowest frequency first) and makes the 174 Hz box background white

## Page 4 --- Manual Mode

In the case of touching the MANUAL Mode box, it first requests you to touch a frequency from the matrix box. On touching the preferred box (e.g. Heart), the touched frequency colour is then displayed as the main background colour and the touched box (Heart) is given a white background.

The page on the left can be considered as Page3.1, The page on the right becomes Page 4 and is similar to the Page 4 of the Step Down and Step Up Modes.



**In MANUAL Mode you can change the frequency at any time by touching any new frequency box.**

## Full Works Option

The Full Works Option automatically steps through all the 30 frequencies in Chakra, Earth Harmonics, Zapper and High Frequency groups, but does not include the Very High Frequency group. The time allowed for each frequency is 1/30th of the session time, giving equal time to each frequency.

The sequence for Step-Down Mode and Step-Up Mode are shown below starting at the top. Each frequency is displayed with its background colour and its frequency box is given a white background.

Step Down Mode

High Frequency	120 kHz
	110 kHz
	100 kHz
	90 kHz
	80 kHz
	70 kHz
	60 kHz
	50 kHz
	40 kHz
Zapper	30 kHz
	24 kHz
	16 kHz
	10 kHz
	7000 Hz
	4500 Hz
	2500 Hz
	1500 Hz
	1000 Hz
Earth Harmonics	777 Hz
	388 Hz
	194 Hz
Chakra Crown	936 Hz
3rd-Eye	852 Hz
Throat	741 Hz
Heart	639 Hz
Solar Plexus	528 Hz
Sacral	417 Hz
Root	396 Hz
Extra 1	285 Hz
Extra 2	174 Hz

Step Up Mode

Chakra Extra 2	174 Hz
Extra 1	285 Hz
Root	396 Hz
Sacral	417 Hz
Solar Plexus	528 Hz
Heart	639 Hz
Throat	741 Hz
3rd-Eye	852 Hz
Crown	936 Hz
Earth Harmonics	194 Hz
	388 Hz
	777 Hz
Zapper	1000 Hz
	1500 Hz
	2500 Hz
	4500 Hz
	7000 Hz
	10 kHz
	16 kHz
	24 kHz
	30 kHz
High Frequency	40 kHz
	50 kHz
	60 kHz
	70 kHz
	80 kHz
	90 kHz
	100 kHz
	110 kHz
	120 kHz

The default form for Chakra and Earth Harmonic frequencies is SINE Waves. SQUARE Waves can be selected by touching the right side of the graphics display as described on Page 5 when sine waves are displayed.



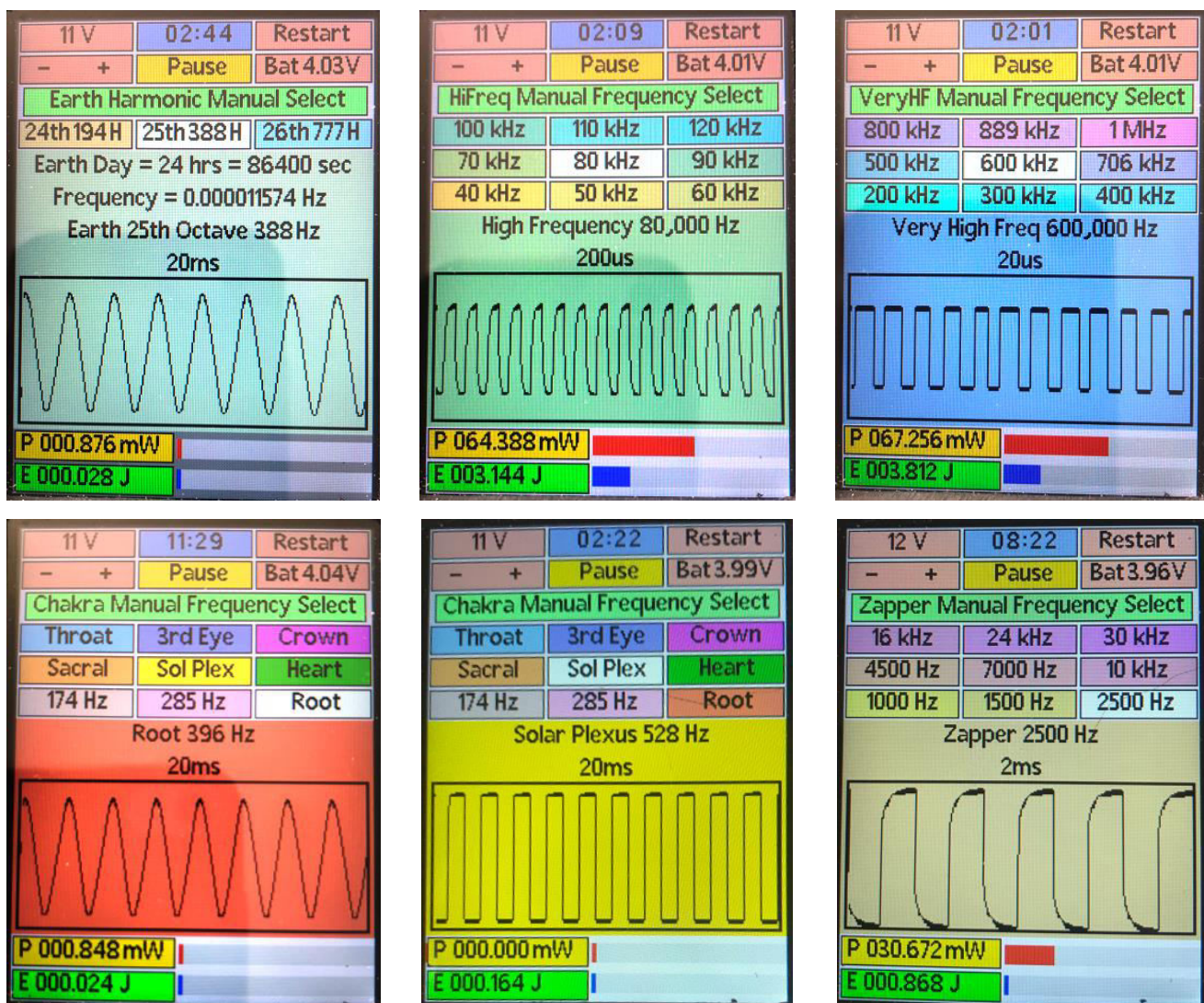
## Session Start

Once Page 4 is displayed, touching the GO Box starts the session. The time will start to count down and the graphics, power and energy (work done) will then be displayed at the bottom. There is negligible power indicated for Chakra and Earth Harmonic waveforms.

In Step Down and Step Up modes the frequency will move to the next frequency (down or up) at equal time intervals of 1/9th of the entered Session Time so that all 9 frequencies are given equal times.

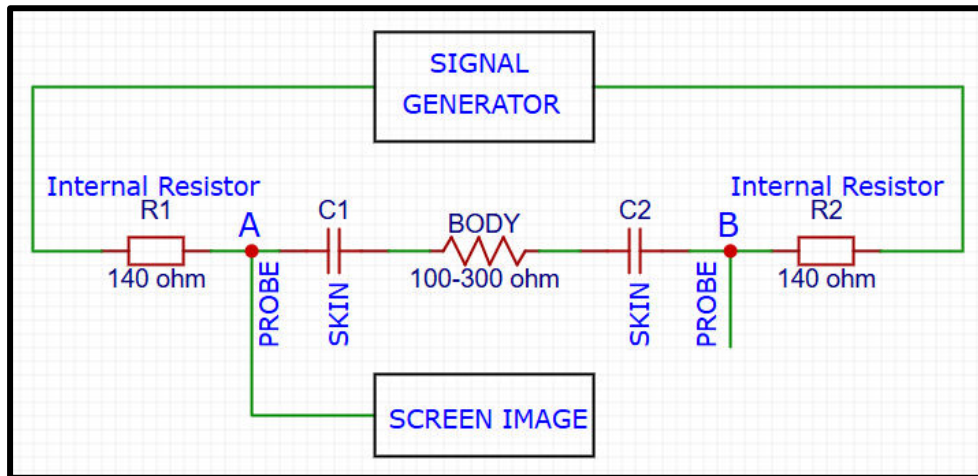
In Manual mode the frequency remains constant until another frequency is touched. There is no limit to how many times the frequency can be manually changed.

Here are some typical screen photos for the different options.



Observe that the different frequencies are displayed with selected time intervals related to the frequency. So for low frequency Chakra signals the display range of **20 milliseconds**. The very high frequency signals have a display range of **20 microseconds**, which is 1/1000th of the scale for Chakra. These are images displayed as real-time signals measured on the probe A by the internal oscilloscope circuitry.

Notice that the 2500 Hz Zapper image has rounded edges. This can be explained in the following circuit diagram.



Resistors R1 and R2 are current limiting resistors inside the unit and protect the body from any short circuit. The probes A (x2) and B (x2) are connected via the banana plugs directly to the internal resistors. The skin acts as a dielectric material effectively producing capacitors C1 and C2. If, however, the skin is cut or wet then it can act as a conductor connecting the probe directly to the low resistance internal body flesh. Hence the purpose of the protection resistors R1 and R2 preventing any possible short circuit.

During the fast rising and falling edges of the square waves, the capacitances act as short circuits and the energy of the opposing signals at A and B pass directly through to the body as if there were just 3 resistors (R1, The Body and R2) with no capacitors. So the signals observed by the oscilloscope at A (and B) switch instantly high or low defined by the division of the 3 resistors. Following the fast rising or falling edges the capacitances then take effect and the voltages at A and B start to rise or fall to the maximum/minimum voltages of the signal generator.

In the zapper 2500 Hz image this resistor/capacitor effect is clearly visible.

In the case of the sine waves, signals do not rise and fall sharply and little energy passes to the body.

In the case of high frequency signals, there is hardly any time for the signals to slowly rise and fall after the fast edge, so the result is a reduction of the amplitude observed at A (and B).

For maximum effect the body resistance should be equal to the sum of R1 and R2 = 280 ohms.

Also for best performance, the skin should be clean and dry.

## Manual Frequency Entry

If Manual-F is selected on Screen 1, then a keypad will be displayed as shown below.

This allows entry of any frequency from 10 Hz to 999,999 Hz.

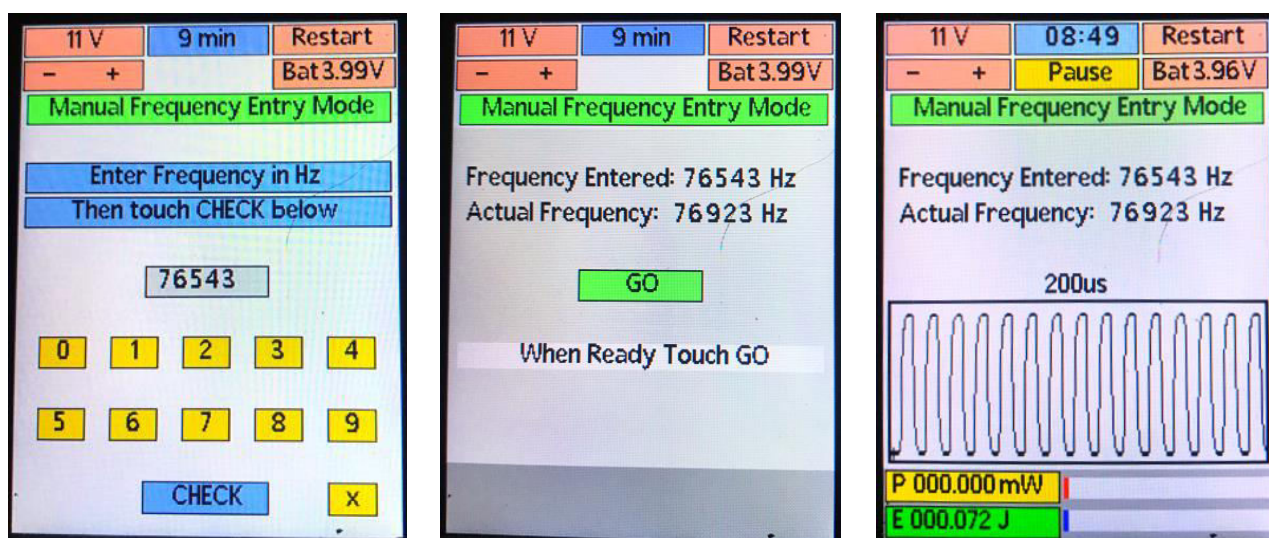
All frequencies in this instrument are derived from the precision 48 MHz internal clock. Since for each frequency two transitions are required, all frequencies must be a division of  $48 \text{ MHz} / 2 = 24 \text{ MHz}$ .

Thus not all frequencies can be delivered. If the exact frequency cannot be produced, then the instrument computes the next higher value possible.

At the high end of the frequency range (6 figures) all frequencies are accurate to 4%.

In the mid range frequencies (4-5 figures) accuracy is about 1%

At low frequencies almost all values are exact or within 2 Hz.



Above is an example of Manual Frequency Entry.

Left --- 76543 Hz is entered --- Then touch CHECK

Centre --- Both the entered and actual frequencies are displayed --- When ready touch GO

Right --- 76923 Hz is started and displayed --- Error is 0.496 %

## GO and the Graphics

On touching the "GO" box, the programmed frequency will be displayed in real time on the graphics area. The signal displayed is the signal on the A probe.

It should be noted that the A signal and B signal are always of opposite polarity so, as the signals change with frequency, the direction of current flowing through the probes and the body will be continually reversed.

At the same time the remaining session time will count down and be indicated at the top of the screen.



## Power and Energy

When holding the probes with two hands, two feet or all four as shown in the diagram on Page 7, energy will pass through the body via skin capacitance and body resistance. If the pressure in the probes increases, capacitance increases and more current passes through the body and peak-peak the voltage signal shown in the graphics will reduce in amplitude. The power asserted (via the probes) on the body at any instant is the product of the voltage on the probes and the current through the body. **This power is continually computed by the SH88 unit and is displayed numerically and graphically at the bottom of the screen.**

Also just below the power display is the **integration of power with time, which is energy or work done on the body**. This energy continuously increases with time and is indicated numerically and graphically on the screen.

In order to make the best use of the energy graphics, the full scale value of the energy graphics line is made dependent on the programmed session time. This way the graphic line increases faster with shorter session times, but the indicated digital energy is the correct value.

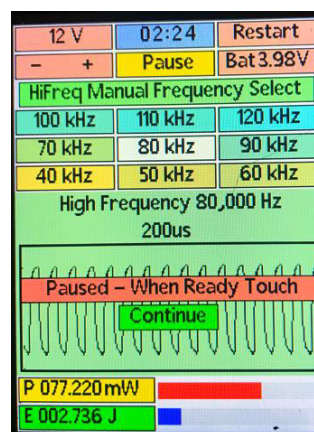
The power is dependent on both frequency and voltage and increases with the square of the voltage. So the power with 12V (squared 144) is 5.7 times the power with 5V (squared 25). This is assuming that resistance and capacitance of the body are the same for both voltages (which might not be the case). Only the lower frequencies have noticeably low power. At higher frequencies there is little observed difference between them in power.

## Pause and Continue

Once “GO” has been touched and a session has started, the “Pause” box is shown in the centre of line 2..

If for some reason, a session has to be temporally stopped, you can touch “Pause” and then the graphics and transmissions will stop and “Continue” will be indicated. When you return just touch “Continue” and the session will continue from where it was stopped.

It should be noted that if the session is paused, a time limit of 3 minutes is set. If the 3 minutes expire then the unit will shut down and all information of the session will be lost.



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