OPERATION MANUAL

INTRODUCTION
Congratulations! You are the proud owner of a Radel quality product - the Sunadamala Zx digital lehra.
Radel products are renowned for their excellent tonal quality as well as their reliability. The latest state-of-the-art technology is used in the design as well as manufacture of the instruments. Being the inventor of these products and the pioneer in the field of electronic musical instruments for Indian music, Radel is constantly improving existing models and introducing new models of instruments. The name Radel assures you of excellent quality, and, although you may never need it, dedicated after-sales service.

GENERAL INFORMATION

The new Sunadamala Zx is a sophisticated electronic lehra instrument catering to the needs of classical tabla artistes and kathak dancers, enabling them to practise without the assistance of another person to provide the lehra. The instrument produces 204 lehras (rhythmic tunes) set to different Taals and Raags which can be selected by the user through a convenient interface. The instrument utilizes the latest state-of-the-art microprocessor technology to produce a realistic sound of the lehra as played on a harmonium.

The instrument has facility to control the volume of the sound, the base pitch (sur) and the tempo of the tune. A built-in drone is also provided, the volume of which can be independently controlled. The "Sunadamala" can also be repeatedly programmed through an easy harmonium-type user interface to play and store four lehras . The instrument automatically operates on any voltage between 90 - 260 V AC or a set of six internal dry batteries (AA size).

The special features of the Sunadamala Zx are:
Natural Harmonium tone, with 8 choices of 'voices' such as single, double, or triple-reed harmonium.
200 preset tunes including special "Masitkhani" and   "gayaki ang" tunes.
Digital display of matras, tempo, tune number & pitch.
Easy selection of taal, raag, pitch etc through scrolling of choices displayed on the LCD screen.
Accurate built-in digital pitch-pipe with fine tuning facility.
Memory facility for pitch, tempo and tone selections.
Can also be used as an excellent sur-peti (drone), to tune the tabla.
Built-in metronome with facility to select single beat, dugun (two), tigun (three), chaugun (four) or khand (five) sub-beats.
Facility to compose 4 tunes with an easy harmonium-like interface, and store these in memory

An LCD display provides the following indications as and when the relevant selections are made :
The currently selected taal and raag
The rhythmic count (matra) when the tune is being played.
The Tempo setting when TEMPO and 'up' or 'down' keys are pressed.
The Pitch setting (C, C#, D, etc) when PITCH and 'up' or 'down' keys are pressed
Fine-tuning steps when in fine-tuning mode
Voice selection while selecting the various voices available
Metronome beats as selected
Volume settings for main volume, Drone and Metronome
Matras and notes during composition

OPERATING INSTRUCTIONS

CONNECTING TO THE POWER OUTLET
Insert the Power cord into the AC socket at the rear of the instrument for operation on AC Mains. Plug the power cord into the AC wall socket. Switch the instrument ON by pressing the power button.

TAAL AND RAAG SELECTION
To select any taal press the button marked TAAL. Scroll by pressing 'up' or 'down' arrow buttons till the desired taal is displayed. Each group contains ten lehras in different raags set to the same taal. To select the raag, press RAAG and scroll using the 'up' or 'down' arrow buttons till the desired raag is displayed.
Press START to start the lehra. The display now indicates the matras as the lehra is played.

SUR-PETI SELECTION
Press Taal key and scroll using up' or 'down' arrow buttons till Taal #22 The display shows SUR (SRUTI) . Now press raag key. 3 modes are displayed: SA-PA-SA, SA-MA-SA and SA. Select the desired combination and press START.

VOLUME ADJUSTMENT
Press the button marked VOL. The selection on the LCD display shows 'Main volume', 'Drone volume' or Metronome'. Scroll

the cursor arrow up and down by pressing the VOL button till 'Main volume' is selected. Now press the up and down arrow buttons till the desired volume is achieved The volume level is displayed on the LCD.

Similarly the drone volume can be adjusted. To mute the drone volume, adjust the drone volume to '0'.

METRONOME
There are five different beat patterns in the metronome (single, dugun, Trigun, chagun and khand). Press the MET/VOICE button. When the cursor on the display points to 'Metronome', press up and down buttons for the change in the beat patterns. The selection is indicated on the display.
To adjust the metronome volume press the button marked VOL repeatedly till 'Metronome' is selected and adjust the volume using the up and down arrow buttons. To mute the metronome volume, adjust the volume to '0'.

PITCH SELECTION
Press the PITCH button. Move the cursor arrow on the display by pressing PITCH button till it points to COARSE PITCH, then press 'up' and 'down' arrow buttons to increase or decrease the pitch in steps of half notes: C, C#, etc.

FINE TUNING of pitch is possible by moving the cursor arrow on the display by pressing PITCH button till it points to 'FINE TUNE', and again pressing 'up' or down arrow button to fine tune in small steps upto +20 or -20. A number following the pitch alphabet indicates the fine tuned pitch. (eg., D 2 is 2 steps fine tuned above D and G.-3 is 3 steps fine tuned below G).

TEMPO SELECTION
To decrease or increase the tempo, press TEMPO followed by up or down arrow button. The tempo range varies from 30 to 600 matras per minute. Laya will be displayed according to the selected tempo.

Press STOP key to stop the lehra. The display now indicates the taal and raag already selected. Pressing START key would start the same lehra again.

VOICE SELECTION :
The new Sunadamala Zx can produce the lehras in eight harmonium tones. To change the selection, press the MET/VOICE button . When the cursor on the display points to 'Voice' press UP and DOWN buttons to select the voice choices displayed as Voice 1, Voice 2 etc.

STORING IN MEMORY :
The memory save operation will save the Taal, Raag, tempo, pitch, fine-tuned pitch, voice and metronome beats selected.

Press the STORE/RECALL button. When the cursor points to 'Memory save', press the UP and DOWN buttons to select the memory location for the user to save. After the selection of the memory location press OK key for the memory storage.

RECALLING FROM MEMORY
The memory recall operation recalls the Taal, Raga, tempo, pitch, fine value, voice and metronome beats stored in a particular memory location.

Press the STORE/RECALL button. When the cursor points to 'Memory recall', press the UP and DOWN buttons to select the settings from the memory location that the user wants to recall. After the selection of the memory location press OK button for recalling the saved settings in that memory location.

COMPOSING
4 tunes can be composed and stored, with the capability of the storing 100 matra-s in each.

Press COMPOSE key. When the cursor points to one of the 4 tunes press OK button and then the display shows the matra number, note name, emphasis level, matra duration on the LCD. Follow the procedure given below for composing the selected tune.

NOTE SELECTION: To play the note for the particular matra press the note keys provided on the keyboard that resembles the conventional harmonium keyboard.

SILENCE: To insert a period of silence, press the VOL button.

MATRA DURATION: To program the particular note with the specified matra duration press the TAAL button. The user can program the current note as ¼ matra, ½ matra, ¾ matra and full matra.

GAMAK: Press the TEMPO button to compose the current note with gamak.

EMPHASIS: There are 4 different levels of the emphasis for the note. Press the PITCH button for giving the emphasis to the current matra.

CONTINUE: Press the required note, followed by MET/VOICE button to compose the continue note. e.g. if you wish to continue 'SA' from the previous matra, press 'SA' again, followed by MET/VOICE button.

Press UP button to move to next matra. Program the note and other characteristics as shown above. Press UP button again for the next matra. Similarly continue to program the notes. In case, a change is to be made in a matra already programmed, use down button to go back to the matra and make changes. Press start button to play the matras that have been entered and assess it. Press stop button to stop playing the composition and continue to compose or edit .

COMPLETING THE TUNE: After the composing is completed press OK button to save the composition.

ERASE: To erase the entire tune to compose the tune afresh, press RAAG button. Pressing the RAAG button will erase all the composed matras, and make all the matras silent, emphasis level 0 and full matra.

EXIT: If the user wants to exit from the selected tune without saving press STORE/RECALL button.

Example of a simple composed tune (Vande Mataram):

Press 'Compose'. Arrow cursor shows 'Tune 1'. Press OK.
Matra 1: Full Matra, select Emphasis 2, select note: MA on the keyboard. Press 'up' arrow button.
Matra 2: Full Matra, select Emphasis 1, select note: PA on the keyboard. Press 'up' arrow button.
Matra 3: Press 'Matra' repeatedly till it shows '½ Matra'. Press 'PA' and then 'Continue'. Press 'up' arrow button.
Next Matra: Press 'Matra' repeatedly till it shows '½ Matra'. Press 'NI2' .Press 'up' arrow button.
Next Matra: Press 'Matra' repeatedly till it shows '½ Matra'. Press 'SA' .Press 'up' arrow button.
Next Matra: Press 'Matra' repeatedly till it shows '½ Matra'. Press 'NI2' .Press 'up' arrow button.
Next Matra: Full Matra. Emphasis 1. Press 'SA' .Press 'up' arrow button.
Next Matra: Full Matra. Press 'SA', then press 'Continue'. Press 'up' arrow button.
Next Matra: Full Matra. Press 'SA', then press 'Continue'. Press 'up' arrow button.
Next Matra: Full Matra. Press 'SA', then press 'Continue'. Press 'up' arrow button.
Press OK.
Your tune is stored as 'Composed Tune 1'

Press START/STOP to play the composed tune and to stop it.

BATTERY OPERATION :
To operate the Sunadamala on batteries, insert six AA size dry cells into the battery compartment. In case of AC mains power failure, the Sunadamala automatically switches over to battery operation.

Check the condition of the batteries once in 15 days to prevent leakage and damage to the instrument by corrosion.

Weak batteries are indicated by irregular or abrupt stoppage of the lehra.

CONNECTING TO "TAALMALA" ELECTRONIC TABLA:
The "Sunadamala" is capable of being connected to a "Taalmala" electronic tabla to provide a synchronized lehra with tabla accompaniment. This facility is useful for Kathak dancers. Both the "Taalmala" and the "Sunadamala" should be set to the same taals to achieve proper operation. Proceed as follows :

Connect the "SYNC OUT" socket of the "Sunadamala" to the "lehra IN" socket of the "Taalmala". (If your "Taalmala" does not have a lehra IN Socket, contact the manufacturer for a clarification. Do not connect to any other socket).

Switch ON both the instruments and press the STOP buttons of both.

Select the desired taal on both instruments.

Select tempo of 120 or above in Taalmala

Select tempo of 100 or above only in Sunadamala. For tempos lesser than 100, taalmala will not respond to the Sunadamala.

Press START on the "Taalmala". (No sound would be heard now).

Press START on the "Sunadamala". Now the tabla and the lehra would both be heard together.

Adjust the tempo on the "Sunadamala" as desired. The tabla would automatically adjust its speed. (Note: The tempo adjustment of the Taalmala would have no effect on the tempo).

Adjust the pitch of the tabla to that of the "Sunadamala".

When the lehra is stopped, the tabla will also stop. To restart, press STOP and START of the Taalmala and then START the "Sunadamala".

CAUTION : While operating the Sunadamala Zx:
● **Provide a gap of at least 10 seconds between switching OFF the instrument and switching it ON again to ensure reliable operation.**
● **Avoid using the instrument close to other electronic equipment such as mobile or cordless phones, pagers, etc.**

VIDEO DEMONSTRATION:

http://www.youtube.com/view_play_list?p=E62B8B7FCC6FCB55

WARRANTY
Like all Radel products, the Sunadamala Zx carries a warranty of 3 years from the date of sale. This warranty is subject to the standard terms and conditions of the manufacturer. All users are advised to ensure that the warranty counterfoils attached to this manual are returned to Radel Electronics Pvt. Ltd. within 15 days of purchase. In case of any problems, users are advised to contact the manufacturers without any delay giving details of the problem, date of purchase, dealer's name and purchase document reference.
The manufacturers invite users to feel free to send any feedback, suggestions and special requirements regarding the product to them.

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