Kathamala Version 1

VOICE OUTPUT COMMUNICATION AID

General Description Of 'Kathamala'

KATHAMALA - A GARLAND OF VOICES, as the terminology explains, is a simple low cost Portable Voice Output Device with high-end features and user-friendly press switches to activate statically recorded voice by the aid of an **Embedded Controller** and a **Static Voice Recorder.**

Kathamala Version 1 is a 16 channel **V**oice **O**utput **C**ommunication **A**id developed, engineered and manufactured by **MTPL** (Microware Technologies Pvt. Ltd.), marketed and serviced by Micro Solutions. This product is conceived by **IICP** (Indian Institute Of Cerebral Palsy) and evaluated by **IIT** (Indian Institute Of Technology) Kharagpur

PURPOSE

Persons with disability are often denied their basic human rights by indifference, callousness and ignorance. They are marginalized, not by their disability, but often by society' perception of it. Persons with multiple disabilities and communication difficulties are often the most isolated from the mainstream.

Approximately, 15 million people in India, suffer from different types of motor disorders. A majority of this segment has cerebral palsy and 40% to 60% of this population is non-speaking. They have varying degrees of physical and cognitive difficulties ranging from mild to severe. There are other people (stroke patients, patients with acquired neuro-motor diseases, patients suffering from head injuries) who lose the ability to use speech as a means of communication. Individuals, who use non-speech means for communication, may be unable to exercise control on their immediate environment. They have to rely only on familiar communication partners in a variety of situations. Non-speaking people or students are not able to obtain an auditory feedback of the message they have communicated through other alternate systems of communication e.g., a communication book, picture display.

This creates a real hindrance to their education as well as communication, since they cannot interact with their teachers. **Voice Output Communication Aids**, like **Kathamala**- that integrate pictures, icons, texts with corresponding voice outputs, can be successfully used for this community.

The generic attributes of Kathamala

Kathamala has a powerful embedded controller inside it which directs the speech module to record the voice in 16 discrete locations.These locations can be accessed directly be pressing soft -touch buttons. Overlays made with pictures / words / phrases or a combination of these for the locations are to be designed by the teachers / facilitators relevant to the speech recorded.

The total recording and play time is 8 minutes. Hence for each speech location the time is 30 seconds.

Thirty seconds is a long time for any deliberate expression. **Kathamala Version I** has the ability to squeeze the number of recording zones by a selector switch to 8 thus allowing the student to record voices as long as 1 minute per channel.

Kathamala has a high-end low noise pre-amplifier section that is guided by JFET [Junction Field Effect Transistor] with a high gain front ending amplifier that enables the recording to take place digitally nearest to the perfection.

The power amplifier section comprises of a professional grade amplifier with low noise that makes Kathamala a very useful tool for people with communication disabilities.

Kathamala Version-1 **has the requisite firmware to convert the same to a 64 zone voice output device with scanning facility at a later day. This requires modifications in the fabrication and additional software support . This modified version will be termed as** Kathamala Version-2

List of Accessories Supplied Free with Each Unit.
1. <u>**Power Eliminator :**</u> Input – 230V AC $\pm$ 15 %;Output- 16 V AC $\pm$ 15%
2. <u>User's Manual.</u>
3. <u>Carry Bag.</u>
4. <u>16 Chnnel flexible Sticker Guide –1 No.</u>
5. <u>4 Channel flexible Sticker Guide- 1 No</u>.

<u>Optional at an Extra cost</u>
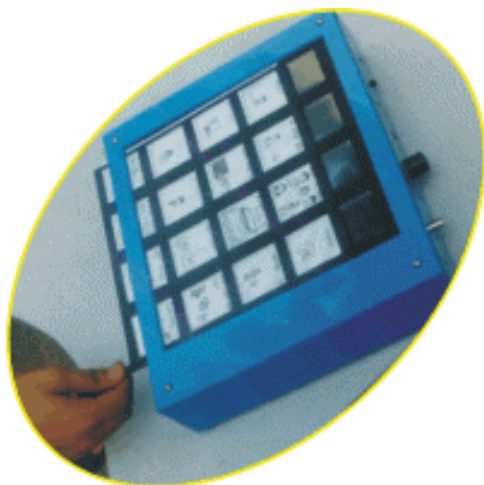1. <u>Ni –Cd battery Set (Spares)</u>
2. <u>16 Channel Rigid Sticker Guide</u>
3. <u>16 Channel Rigid Sticker Guide</u>
4. <u>External Battery Set with Charger</u>

<u>**For Service and Queries plaese contact:**</u>
<u>**Micro Solutions:**</u> **A-81 , New Raipur Road, Kolkata 700 084**
         Ph: 98300 31956
           Fax : 2436 3675, email : dpc.hce@gmail.com

VOICE OUTPUT COMMUNICATION AID
Kathamala Version 1

Kathamala in a Carry Bag.

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THE GENERIC ATTRIBUTES OF KATHAMALA

Kathamala has a powerful embedded controller inside it which directs the speech module to record the voice in 16 discrete locations. These locations can be accessed directly be pressing soft -touch buttons. Overlays made with pictures / words / phrases or a combination of these for the locations are to be designed by the teachers / facilitators relevant to the speech recorded.

The total recording and play time is 8 minutes. Hence for each speech location the time is 30 seconds.

The speech time can be changed depending on the selector switch position, please refer the technical specifications.

Kathamala has a high-end low noise per-amplifier section which is suited by JFET [Junction Field Effect Transistor] with a high gain front ending amplifier which enables the recording to take place digitally nearest to the perfection.

The power amplifier section comprises of a professional grade amplifier with low voice that makes Kathamala a very useful tool for people with communication disabilities.
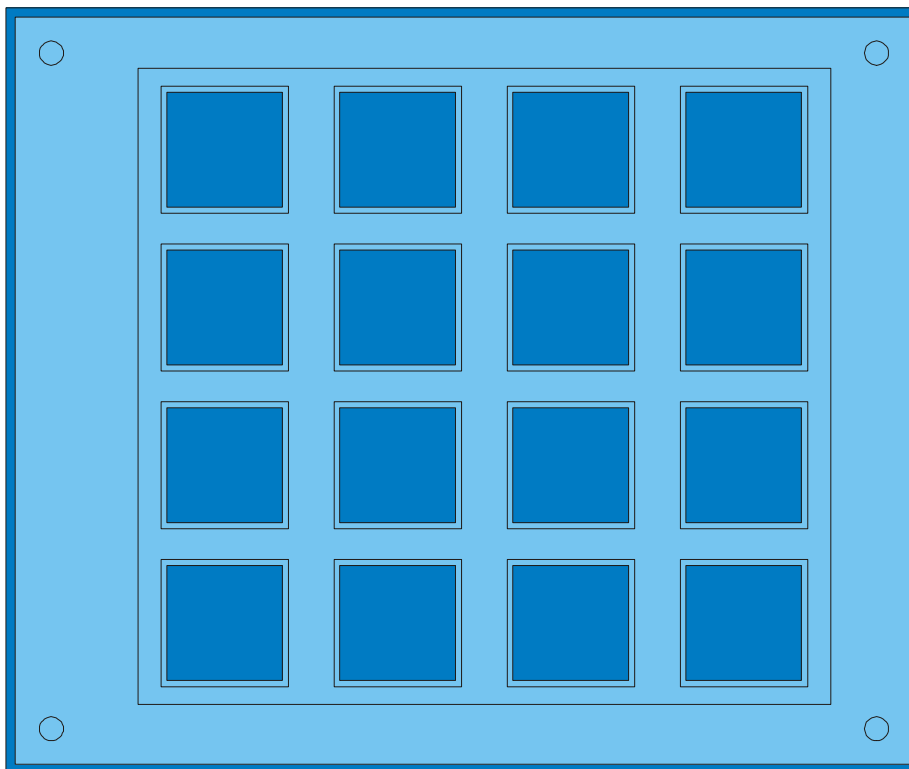Kathamala Version-1 has the requisite firmware to convert the same to a 64-zone voice output device with scanning facility at a later day. This requires modifications in the fabrication and additional software support. This modified version will be termed as Kathamala Version-II
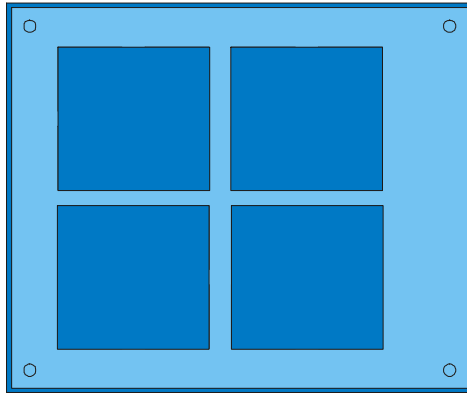
Technical Specification Of Kathamala Version –I.

16 Channel Supportive Voice Output Communication Aid
Device for Augmentative and Alternative Communication

1.	Total duration of recording time	**480 Seconds**.
2.	Highest number of key Zones	**16**
3.	Lowest number of key Zones	**1**
4.	Switch selectivity	**1, 2, 4, 16**
5.	Time duration in each Zone	**480 Seconds, 240 Seconds, 120 Seconds, 30 Seconds**.
6.	Maximum Audio Output	**500 mw R.M.S**.
7.	Speaker	**8 Ohms.**
8.	Micro phone Preamplifier	**Built in**
9.	Microphone type	**Best results with Electret condenser Microphone**.
10.	Maximum recorded voice zones	**16**
11.	Type of embedded controller	**RISC**
12.	Programming	**Assembly**
13.	Type of static recorder	**ISD**
14.	Size of the Device	**310 mm x 255 mm x 65 mm**
15.	Mounting of the Device	**Portable, Desk/Table Top**
16.	Type of Switches	**Micro switches with Tactile push to on Tops**
17.	Accessories & Indications	**Volume control, Built-in Microphone, Stop & Record Switch, 16 Press zone switches, 230-16 V AC Power Eliminator, Charging on Indication Built in Rechargeable Battery,4 way zone selector switch**
18.	Ambient Conditions	**0-95 % RH, 0-40 C, 3000 Mtr. Above M.S.L.**

TOP VIEW

FRONT VIEW

A Garland Of Voices

Kathamala Version 1
Voice Output Communication Aid

BROUGHT TO YOU BY
AMS
MICRO SOLUTIONS
KOLKATA

Charging   AC 15-20 V   Control On   Volume   MIC   Record   1-2-4-16   Stop-Play
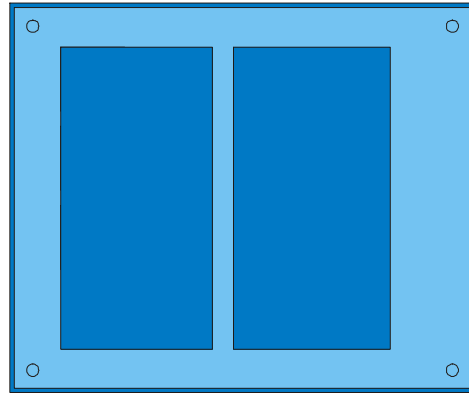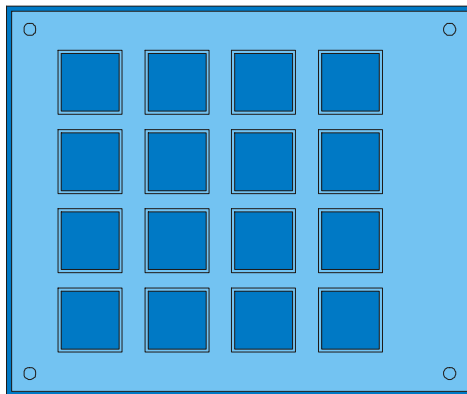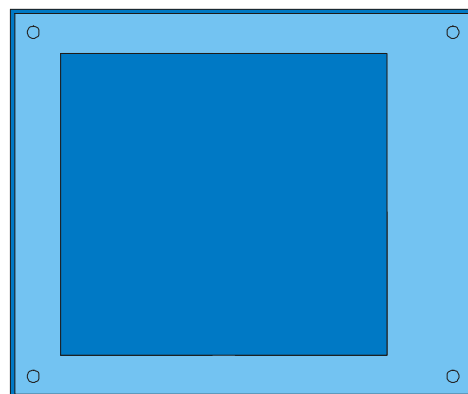Use Factory Supplied Adapter Only

Position 2
1-2-4-16

Position 3
1-2-4-16

Position 1
1-2-4-16

Position 4
1-2-4-16

Zone Selector Switch Positions

Position 1: 16 Zones- Each zone=30 Seconds

Position 2:   4 Zones- Each zone=120 Seconds

Position 3:   2 Zones- Each zone=240 Seconds

Position 4:   1 Zones- Each zone=480 Seconds

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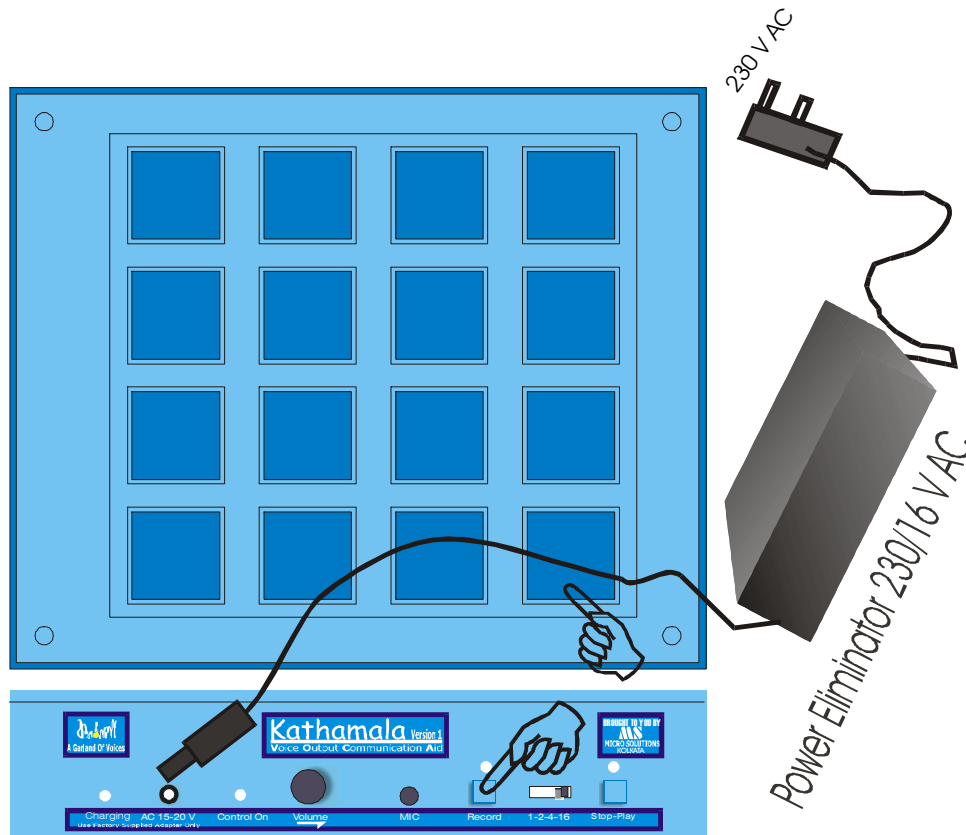
Press Any Key During Play Mode To Activate That Zone

In case Of Pressing Any Other Zone Key The Previous Play Back Zone Will Be Terminated And The Fresh Zone Will Be Active .

The LED Corresponding To Stop Button Indicates That The Channel Is On Play Mode.

Simultaneously Press The Record Switch And Any Key To Record Voice In That Key zone.

Press The Stop Button To Terminate The Recording.

Topple the unit upside
down and access the rear
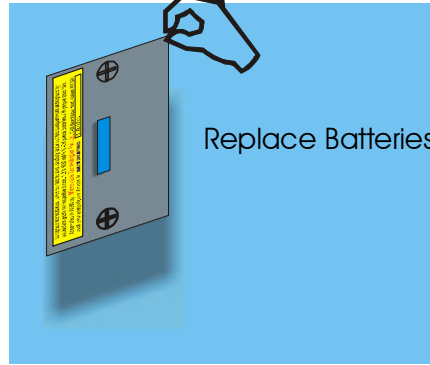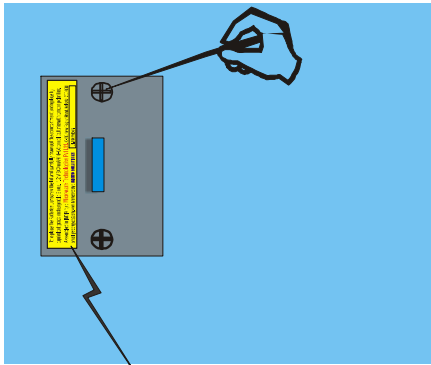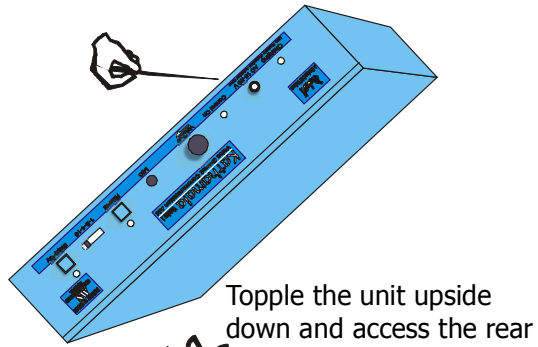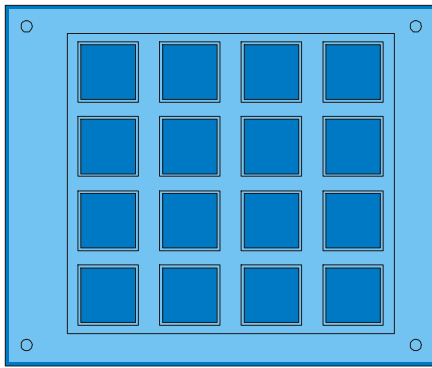
Replace Batteries

To replace the Batteries , unscrew the lid and carefully draw out the compartment andreplace by equivalent grade rechargeable 8 nos. 1.2 V 600 mAH Ni-Cd pencil batterieswith proper polarities.

Assembled in INDIA by : Microware Technologies Pvt Ltd. C-68 New Raipur Road, Kolkata 700 084

email: pscompaq@sify.com Marketed By : MICRO SOLUTIONS   Sl. Number.

For removing the battery follow the following steps
1. Access the rear side of the device
2. Unscrew the lid.
3. Carefully draw the battery compartment out
4. Remove all the 8 batteries at a time with equivalents.
5. Dispose of batteries following local pollution rules.
6. Polarities to be checked before replacement
7. Spring side : Negative , Button side : Positive

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