Bauer **REMI** model **3** … 'All-in-One' EWI
User Manual

References

For a general overview of the REMI project, please refer to this website:

www.mjbauer.biz/REMI_Intro.htm

Design notes and construction details are posted on the web-page here:

www.mjbauer.biz/REMI_3.htm

The latest firmware release and source code are available for download on GitHub here:

github.com/M-J-Bauer/REMI-3-all-in-one-EWI

This edition of the manual is applicable to REMI 3 firmware version 1.2.

Player User Interface

The "user interface" (UI) comprises the OLED display, 10 touch-pads and 'SET' button.

The UI allows the player to select a desired instrument preset and to adjust other settings on the REMI 3. Following is a list of player settings supported:

- Instrument Preset (1 ~ 8)
- Octave Shift (0, +1, –1 octave)
- Pitch Transpose (0, +/–12 semitones)
- Vibrato mode (control source, ON/OFF)
- Reverb Level (0, 5, 10, 20, 50 %)
- Pitch Bend (Enable/Disable)
- Speaker (ON/OFF)
- Battery status & type (Alkaline, NiMH)
- Pressure sensor calibration
- Shutdown (battery power off)

The display is normally turned off to conserve battery power consumption. Pressing the SET button while there is no note being played will activate the display. Take care not to accidentally touch the wrong pad when the button is pressed, because all button functions are executed whether or not the display is active.

A particular combination of touch-pads will select a menu item (usually a settable parameter, as in the above list) for display. The touch-pad selection also determines what action, if any, will occur when the 'SET' button is pressed. In each case, the action of the 'SET' button is shown in a text box at the bottom of the screen.

For example, if pad LH1 is pressed, the menu item shown is "Transpose" and the 'SET' button when pressed will cause the setting to be increased by 1 semitone.
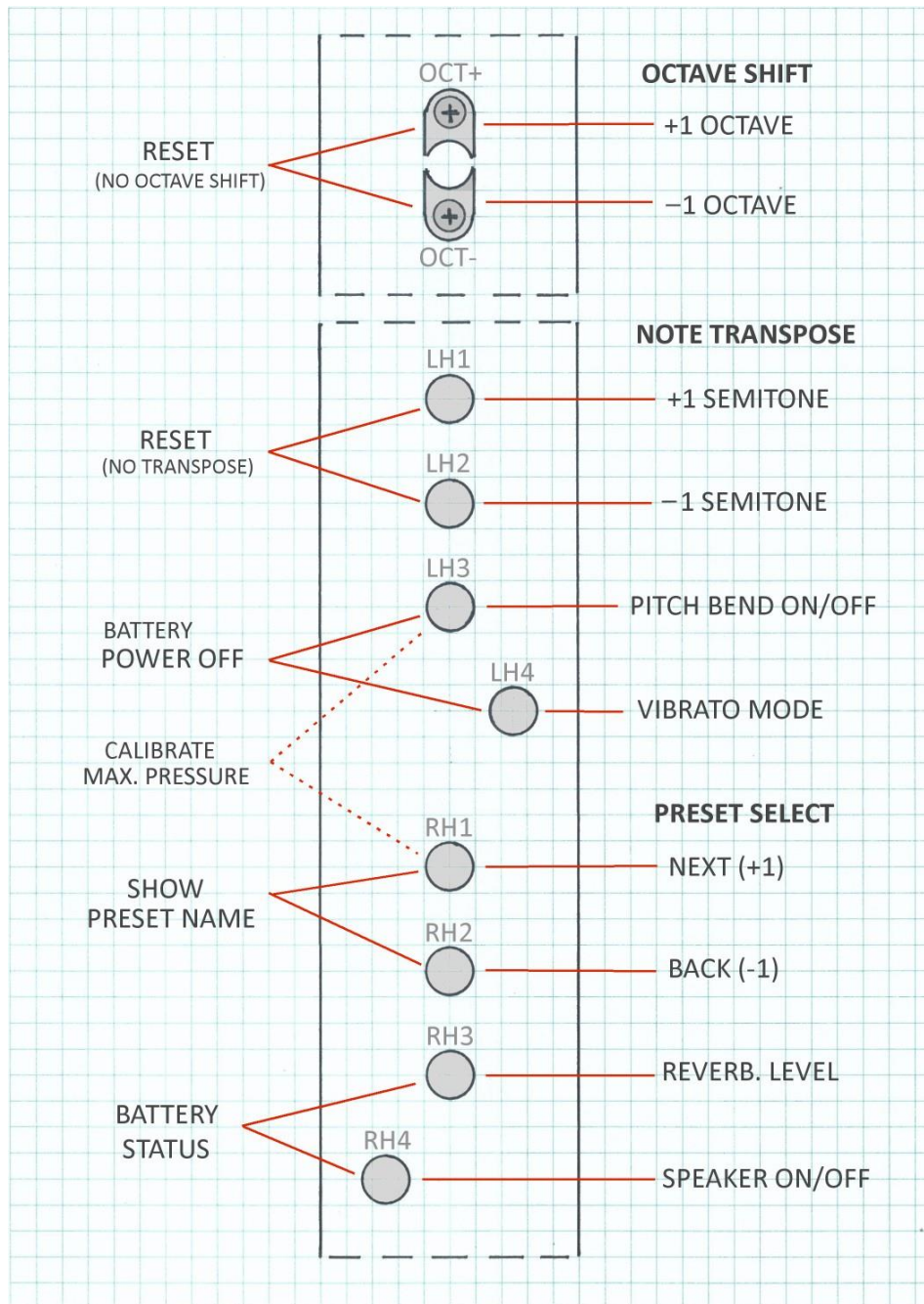
Battery Operation

To switch on the battery supply, press the POWER-ON button until the display illuminates. The red LED indicator should glow bright for 2 seconds, then dim during normal operation.

The instrument can be powered down (when operating on battery) in one of three ways:

1. Press the SET button while touching pads LH3 and LH4
2. Press and hold the SET button for at least 5 seconds
3. Auto shut-down – instrument left idle for more than 2 minutes

Low battery warning is indicated by the red LED pulsing every 2 seconds.

Battery status can be viewed by touching pads RH3 and RH4 together. (Press the SET button first, without touching any pads, if the display is blank.)

Battery Replacement

REMI 3 is powered by 2 'AA' size cells, which may be either alkaline or rechargeable NiMH types. The battery type must be set accordingly using the Battery Status UI function. The battery type will be set to 'Alkaline' automatically if the voltage exceeds 2.6V.

The battery compartment is accessed by removing two screws on the underside cover containing the Octave touch-pads. Take care to observe battery polarity.

Pitch Range and Offset

Two configuration settings – "Octave Shift" and "Note Transpose" – are provided so that the range of musical notes produced by the REMI can be shifted, i.e. transposed, up or down by a number of semitones. These settings are "persistent", i.e. they retain their values during power-down.

This feature allows the REMI to be configured to emulate recorders of different sizes, e.g. bass in C3, bass in F3, tenor in C4 (default), alto/treble in F5 and soprano/descant in C5. To set one of the five common recorder pitch ranges, use the Octave Shift and/or Note Transpose functions to obtain the pitch offset shown in the table below:

	Bass C3	Bass F3	Tenor C4	Alto / Treble F4	Soprano / Descant C5
Pitch Offset (semitones)	−12	−7	0	+5	+12

Instrument Presets

REMI 3 provides 8 instrument presets for the internal sound synthesizer. The Player UI allows selection of the desired preset. A different set of 8 presets can be configured only by modifying and re-building the firmware.

If using an external sound synth connected via the USB-MIDI port, the desired instrument preset or "program" must be selected via the synth control panel. REMI 3 does not transmit MIDI "Program Change" messages.

Fingering Scheme

REMI 3 uses a fingering scheme loosely based on the traditional recorder. The scheme was designed to be easy to learn and to provide a large range of notes – up to four octaves.

The player needs to learn only the finger positions of 12 notes comprising one octave. This scheme is best for beginners learning to play an EWI.

Unlike an acoustic recorder, REMI 3 fingering uses touch-pad LH4 to sharpen certain notes, i.e. C and F. The scheme was implemented in the REMI for compatibility with some commercial EWI's.

REMI 3 Fingering Chart

	C'	C#' Db'	D'	Eb' D#'	E'	F'	F#' Alt.	F#' Gb'	G'	Ab' G#'	A'	Bb' A#'	B'	C" Alt.
LH1	●	●	●	●	●	●	●	●	●	●	●	●	●	○
LH2	●	●	●	●	●	●	●	●	●	●	●	○	○	●
LH3	●	●	●	●	●	●	●	●	●	○	○	◇	○	○
LH4	○	●	x	x	x	○	●	x	x	x	x	x	x	○
RH1	●	●	●	●	●	●	●	○	○	◇	○	◇	○	x
RH2	●	●	●	●	●	○	○	◇	○	◇	○	◇	○	x
RH3	●	●	●	○	○	x	x	◇	○	◇	○	◇	○	x
RH4	●	●	○	◇	○	x	x	◇	○	◇	○	◇	○	x

	C"	C#" Db"	D"	Eb" D#"	E"	F"	F#" Alt.	F#" Gb"	G"	Ab" G#"	A"	Bb" A#"	B"	C'''
LH1	○	○	○	○	○	○	○	○	○	○	○	○	○	○
LH2	●	●	●	●	●	●	●	●	●	○	○	○	○	○
LH3	●	●	●	●	●	●	●	●	●	●	●	●	●	●
LH4	○	●	x	x	x	○	●	x	x	x	x	x	x	○
RH1	●	●	●	●	●	●	●	○	○	●	●	●	●	○
RH2	●	●	●	●	●	○	○	◇	○	●	●	○	○	x
RH3	●	●	●	○	○	x	x	◇	○	◇	○	◇	○	x
RH4	●	●	○	◇	○	x	x	◇	○	◇	○	◇	○	x

Legend:
● Pad touched   ○ Pad not touched
◇ Any pad(s) in group   x Don't care (No effect)

Two "octave pads" (OCT-, OCT+) on the underside of the instrument select one of 3 ranges of notes, each range spanning up to 2 octaves, as shown in the chart. When both octave pads are touched, the "middle" note range is selected (normally C4 to C6). By moving the thumb to the upper or lower pad, the range of notes is shifted up or down by one octave. The octave pads extend the overall range to four octaves (and more using the "Octave Shift" and "Note Transpose" settings).

Referring to the chart, note that the fingering combinations cover up to two octaves without changing the octave selection by the octave pads (LH thumb). The first octave follows quite closely the fingering patterns of the recorder, including C" (Alt) above the low C'. Contrary to the recorder, the second octave simply repeats the fingering pattern of the first octave, with the top pad (LH1) released, up to G". Above high G", the fingering gets a bit weird, but not as weird as a real recorder.