This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the manufacturer’s instructions, may cause harmful interference with radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/television technician for help.

For Technical Support, email tom@tomoberheim.com.
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True analog lives!

Thank you for purchasing the Two-Voice-PRO. Of all the synths I’ve created over the years, the original Two Voice has always been special to me. There was something very pure about its classic combination of two SEMs (Synthesizer Expander Modules) and a step sequencer. Nothing ever sounded or performed quite like it. And that’s why I decided to bring it back.

The new Two-Voice PRO is as true to the original as possible, but with a few interesting upgrades. It’s a two-voice, bi-timbral, pure analog synthesizer that incorporates two classic SEMs with a 16-step, two-voice analog sequencer and a 37-note, two-voice velocity & aftertouch sensitive, MIDI-capable keyboard. Additionally, it features a 56-point patch panel with 3.5mm jacks, which adds tremendous flexibility as well as the ability to expand and integrate its capabilities with analog synths, modular systems, and other gear.

At the heart of the Two-Voice PRO’s sound is the SEM. Its circuitry is almost identical to the original, much-coveted Oberheim SEM modules of the 1970s. Each SEM is a true analog synthesizer in its own right, very much like the original Minimoog, ARP 2600, and the Oberheim Four Voice and Eight Voice polyphonic synths. By this, I mean that the SEM is 100% analog — not just its signal path. I’ve always believed that the special, organic quality of a real analog synthesizer can only be created through true VCOs, VCFs, and VCAs, with their tiny imperfections and micro-fluctuations. These imperfections are the very things that give analog synths their warmth and character.

Like many early, classic synths, the settings on the SEMS cannot be stored in program memory. But the idea behind the Two-Voice-PRO, as with the original Two Voice, is that its front panel controls are meant to be played — not just using the notes on its keyboard or the steps on its sequencer. There’s really nothing quite as satisfying as grabbing a knob and sweeping an SEM filter while performing. But I’ll let you discover that for yourself.

I hope you enjoy making music with the Two-Voice Pro as much as I enjoyed creating it.

Tom Oberheim
Playback Assignments

The fun really begins when the two SEMs are integrated with the easy to use, 16-step Mini-Sequencer. This integration of the two SEMs with the Mini-Sequencer is controlled by the ASSIGNMENTS section on the Mini-Sequencer panel. This allows you to select one of four operation modes:

- Keyboard controlling both SEMs
- Keyboard controlling one SEM and the Mini-Sequencer controlling the other SEM
- Mini-Sequencer controlling both SEMs
- The random sample/hold control source controlling one SEM or both SEMs

Keyboard Modes

The 37-note two-voice polyphonic keyboard works in the following modes:

- Unison mode with and without Retrigger
- Two-voice polyphonic mode
- Split mode with the split point selectable

The keyboard has velocity and aftertouch capability which can be utilized to control various parameters in the SEMs, such as filter frequency and overall module loudness.

Mini-Sequencer

The Mini-Sequencer is a classic 16-step analog sequencer using either the TVS-PRO keyboard or rotary knobs to set the pitches, quantized to semi-tones. You can define a sequence using the keyboard or the knob settings and the sequence is immediately functional. Since the sequence is stored in a temporary note memory, you can also define a second sequence to produce two-voice polyphonic operation with up to 16 steps per sequence.

Once you have created a two-voice sequence, it can then be stored in flash memory. Up to 50 two-voice polyphonic sequences can be stored.

A sequence can be edited in the following ways:

- Two, three and four way ‘ratcheting’ (double, triple or quadruple gates within each sequence step)
- Step-by-step rests
- Gate length (global within a sequence)

Sequences stored in flash memory can be chained to make complex songs. Up to nine songs can be stored.

The following parameters can be defined in each step of a song:

- One of the pre-stored sequences
- Transpose per song step
- Number of repeats per song step
**Audio**

The TVS-PRO has the following audio features:

- Individual Level and Pan controls for each SEM
- A-440 tuning reference (available on SEM A EXT IN 1)
- Noise source (available on both SEMs EXT IN 2)
- Rear panel audio inputs processed by low noise preamps and available as inputs to the VCFs
- 250 mW dual channel headphone amps with level control
- Rear panel line level outputs

**Bendbox**

The Bendbox offers a powerful set of flexible performance and global tools. These functions include:

- Pitch and modulation wheels
- Transpose allows either or both note outputs from the keyboard to be transposed up or down 0, 1 or 2 octaves. You can save your own default transposition values as a default power-on setting. (See ‘Customizing Power-On Default Settings’ on page 17).
- Vibrato LFO with Frequency and Amount controls
- Vibrato amount can be controlled by either the modulation wheel or keyboard pressure
- Fine tune control allows global tuning of all four VCOs
- VCO2 detune allows just the VCO2 in both SEMs to be detuned

In addition, the pitch bend amount can be set between 0 and 12 half steps using the Bend Range control located in the keyboard control panel.

**Transpose Controls**

There are two push button switches, labeled ‘A’ and ‘B.’ The two switches perform the following functions:

- In SPLIT mode, if only the ‘A’ LED is lit, the TRANSPOSE buttons only affect transposition on the lower section of the keyboard. If only the ‘B’ LED is lit, the TRANSPOSE buttons only affect transposition on the upper section of the keyboard.
- In the POLYPHONIC modes, if only the ‘A’ LED is lit, the TRANSPOSE buttons only affect transposition of SEM A. If only the ‘B’ LED is lit, the TRANSPOSE buttons only affect transposition of SEM B.
MIDI

The TVS-PRO communicates MIDI information on MIDI channels 1 thru 7.

To set a MIDI channel:

1. Press the MIDI CHAN button in the KBD & MIDI section.
2. Select the channel with the UP or DOWN arrows.

Midi in

The TVS-PRO recognizes the following MIDI commands:

- Note ON
- Note OFF
- Pitchbend (range can be set on the TVS-PRO)
- Transpose (from an external keyboard)
- Mod Wheel (modified by Bendbox AMOUNT pot)
- Aftertouch (modified by Bendbox AMOUNT pot)

NOTE: An external MIDI keyboard connected to the TVS-PRO can also be used to transpose sequences. Make sure that the KEYB TRANS button is enabled on the TVS-PRO.
An external keyboard connected to the TVS-PRO’s MIDI IN port supports the following TVS-PRO keyboard modes:

- Unison mode with and without Retrigger
- Split mode with and without Retrigger
- Two-voice polyphonic mode

**Syncing the mini-sequencer with a MIDI device**

The TVS-PRO mini-sequencer can be synchronized to and triggered by an external MIDI device. When the sequencer is driven by MIDI CLOCK, it responds to MIDI START and MIDI STOP commands from the external MIDI device. SEQ A runs with basic MIDI channel (displayed by pressing ‘MIDI CHAN,’ and SEQ B runs on basic MIDI channel + 1.

*To transpose MIDI devices:*

1. Press ‘MIDI TRANS’ once. The LED should be solid, and the transposition is displayed in the ‘Sequence Number’ display.
2. Select octave with the ‘UP’ and ‘DOWN’ switches.
3. Press ‘MIDI TRANS’ once. The LED should be off.

*To synchronize the mini-sequencer to an external MIDI device:*

1. On the TVS-PRO, press MIDI CLOCK. The mini-sequencer will start when it receives an incoming MIDI CLOCK signal. (You do not need to press RUN on the TVS-PRO.)

*To multiply the mini-sequencer clock rate by a factor of 2 or 4:*

1. Press SHIFT once, then press CLK.
2. Select the desired rate with the UP and DOWN buttons in the SEQUENCE section. The number shown will be +2 for double rate, +4 for quadruple rate and if desired, back to +1 for the default rate.

**Setting the local keyboard mode on or off**

The TVS-PRO’s local keyboard can be turned on or off. ON means that the internal keyboard controls the SEMs and MIDI out; OFF means that the internal keyboard does not control the SEMs, but still outputs MIDI with 8-voice polyphony, ignoring the keyboard modes on the TVS-PRO.

*To set the local keyboard mode:*

1. Press the illuminated ‘MIDI CHAN’ button. You should see either an ‘on’ or ‘oF’ depending on the mode.
2. Select the channel with UP or DOWN or keep the current channel.

**Setting the bend range**

You can set the bend range of the TVS-PRO pitch bend wheel, and you can save it as one of your default power-on settings. (See ‘Customizing Power-On Default Settings’ on page 17).

*To set the bend range:*

1. Press the BEND RANGE button in the KBD & MIDI section.
2. Use the UP and DOWN buttons to select the range of the pitch wheel in semitones.
MIDI out

MIDI OUT information comes from two sources in the TVS-PRO:

- The TVS-PRO keyboard.

On the Mini-Sequencer MIDI OUT information is active whenever the Mini-Sequencer is playing. Sequence A is transmitted on the MIDI channel currently set in the KBD & MIDI section. Sequence B is transmitted on the currently set MIDI channel + 1.

The TVS-PRO keyboard sends the following MIDI OUT data:

- Note ON
- Note OFF
- Pitchbend
- Mod Wheel
- MIDI Clock
- MIDI Clock Start
- MIDI Clock Stop
- Velocity (adjustable with VELOCITY knob)
- Aftertouch

**MIDI Channel assignments when using TVS-PRO keyboard:**

- **UNISON** - Output is on basic channel and basic channel + 1
- **SPLIT** - Low section of the keyboard is on the basic channel. High section is on basic channel +1.
- **DUOPHONIC** - Output is on the basic channel.

**MIDI OUT from the Mini-Sequencer:**

- Control information going to SEM A is output on the basic channel.
- Control information going to SEM B is output on the basic channel +1.

**Sequencer transposition by keyboard:**

- Sequencer transposition by the TVS-PRO keyboard is output on the basic channel.

**NOTE:** In order to enable MIDI OUT from the TVS-PRO keyboard you must turn on RE-TRIGGER in the Keyboard Control section.
Velocity Control

Keyboard Velocity can control VCA loudness and VCF frequency modulation. This is accomplished by using the VCA switch for velocity-controlled loudness and the VCF Modulation controls for velocity-controlled VCF sweeps.

You can select between 8 different velocity curves by pressing VELO CURVE button and using the UP and DOWN arrow keys. Adjust the velocity value from 64 to 127 using the VELOCITY knob.

Modulation Settings:

- When the VCA switch is positioned to the left, ENV1 directly modulates the VCA.
- When the switch is in the ON/EXT position, the amount of ENV1 that modulates the VCA is controlled by velocity.
- Likewise, when the VCF modulation switch is set to ENV2, that envelope directly modulates the VCF.
- When the switch is in the EXT position, the amount of ENV2 that modulates the VCF is controlled by velocity.

Patch Panel

The modular nature of the TVS-PRO is greatly enhanced by the 56-jack patch panel located at the top of the front panel. This allows you to use standard 3.5 mm synthesizer patch cables to interconnect the various modules and functions of the Two-Voice Pro with itself — or with external devices such as analog synths, modular systems, and other gear — in interesting and creative ways.

The patch panel contains the following signal inputs and outputs from the TVS-PRO modules:

- Keyboard/Bendbox/Mini-Sequencer modules: 10 outputs
- SEM A module: 10 inputs and 9 outputs
- SEM B module: 10 inputs and 9 outputs
- Also contained on the patch panel are two 1-in, 3-out mults

NOTE: Marion Systems does not recommend using 1/8" patch cables.
Even if you just use the patch panel to make connections within the Two-Voice Pro itself you can create many interesting sounds. You won’t break anything by making ‘wrong’ connections here, so experiment!

Here are a few suggestions for patch connections:

- Connect WHEEL OUT to VCF CV IN to control filter cutoff with the Mod Wheel.
- Connect S/H OUT to VCF CV IN to control filter cutoff with sample & hold. Sample & hold start and rate are controlled by the sequencer clock, so press RUN and turn the CLOCK knob to set the rate.
- Connect PULSE OUT from VCO 1 to VCF CV IN to perform audio-rate modulation of the filter.
- Connect PULSE OUT from VCO 1 to VCO 2 CV IN to perform frequency modulation (FM) of oscillator 2.
- Connect LFO OUT to VCA CONTROL IN to create a tremolo effect. Rate is controlled with the LFO knob.

**Getting Started**

**Audio Hookup**

There are two identical sets of two-channel outputs on the TVS-PRO:

- Bendbox – Headphone Output with level control
- Rear panel – Audio Out Left & Audio Out Right

Both sets of outputs are driven by the same discrete power amplifier – the headphone outputs have an output impedance of about 50 ohms and the rear panel outputs have an output impedance of 1000 ohms. The headphone level control is active on the headphone output only.

**Rear Panel Connections**
1. **AC Power Connector**—Accepts a standard, grounded IEC power cord. Operates over a range of 100-240 VAC, 50-60 Hz, 15 watts.

2. **MIDI In, Out, and Thru**—Standard 5-pin MIDI DIN connectors.

3. **Audio Outputs**—Unbalanced, ¼ inch audio outputs. The output of each SEM can be panned individually within the stereo field.

4. **External Audio In**—Unbalanced, ¼ inch audio inputs. The Two-Voice Pro accepts external audio signals for processing through these connectors. Input A1 in is routed to SEM A. Input B1 in is routed to SEM B. Input level can be adjusted using the **ExT** knob in the VCF section of the SEMs.

5. **SEM A Control Voltage Out**—Standard, ¼ inch TS connector. This jack outputs a 1-volt-per-octave signal for interfacing with modular synthesizers and other gear that recognizes this standard.

6. **SEM A Gate Out**—Standard, ¼ inch TS connector. This jack outputs a signal for triggering external sequencers and other devices that support this type of connectivity.

7. **SEM B Control Voltage Out**—Standard, ¼ inch TS connector. This jack outputs a 1-volt-per-octave signal for interfacing with modular synthesizers and other gear that recognizes this standard.

8. **SEM B Gate Out**—Standard, ¼ inch TS connector. This jack outputs a signal for triggering external sequencers and other devices that support this type of connectivity.

The conversion of incoming MIDI messages to pitch control voltages and gates is a basic requirement for control voltage based synthesizers, and this operation is performed in the keyboard/sequencer module of the TVS-PRO to a high level of pitch accuracy. The resulting pitch control voltages and gates are routed to the SEMs and are also available on the TVS-PRO rear panel, and can be used to control external voltage controlled equipment.
Basic Operation

SEMs

For the purpose of this version of the Quickstart manual, we will not describe in detail the operation and use of the Synthesizer Expander Modules. We recommend that the parameters on the SEMs be configured according to the Basic Patch illustrated in the drawing below. This will allow the user to concentrate on the operation of the keyboard and Mini-Sequencer features of the TVS-PRO.

For the most part, the SEMs are unchanged from the originals which were first put on the market in 1974. The only change is that two additional VCAs have been added to allow the amount of ENV1 modulating the VCA and the amount of ENV2 modulating the VCF to be controlled by velocity.

When the VCA switch is positioned to the left ENV1 directly modulates the VCA. When the switch is in the ‘ON/EXT’ position the amount of ENV1 that modulates the VCA is controlled by velocity. Likewise when the VCF modulation switch is set to ‘ENV2’ then that envelope directly modulates the VCF. When the switch is in the ‘EXT’ position the amount of ENV2 that modulates the VCF is controlled by velocity.

The maximum amount of velocity is controlled by the VELOCITY control in the keyboard control section.

The two SEMs are described as ‘SEM A’ for the left SEM and ‘SEM B’ for the right SEM.

The VCF Low Pass Output of SEM A is connected to the external number one input of SEM B through the B1 IN audio jack.
Tuning the VCOs

To tune the four VCOs on the two SEMs:

1. In the ASSIGNMENTS section, select ‘KEYB’ for both SEMs.
2. On the Bendbox set the VCO2 DETUNE pot to zero.
3. Press and hold the ‘VELO CURVE’ button until it changes to ‘on’ and press the high A natural key.
4. Set all VCF Mixer pots in the VCF section to the off (‘12 o’clock’) position.
5. Activate the A-440 tone by turning on the SEM A VCF EXT #1 pot all the way to the left.
6. Turn on one VCO mixer pot, tune the VCO & turn off that pot.
7. Repeat for all four VCOs.
8. Turn off the A-440 tone by turning on the SEM A VCF EXT #1 pot to the off (‘12 o’clock’) position.
9. Press the ‘VELO CURVE’ button again. The TVS-PRO returns to normal playback mode.

Keyboard Electronics

- MIDI CHAN – allows selection of the MIDI Channel from 1 to 7
- VELO CURVE – allows selection of one of eight velocity curves. Velocity curve ‘0’ is full velocity.
- BEND RANGE – allows selection of the range covered by the pitch wheel from 0 thru 12 semitones

To check which firmware version is installed, press and hold the MIDI CHAN button.

Keyboard Modes

Creating a ‘polyphonic’ synthesizer with only two voices is difficult because of the limitations of how notes played on the keyboard can be assigned to voices. To make the operation of the TVS keyboard as flexible as possible, several modes are implemented.

The TVS-PRO keyboard works in three modes:

- Unison
- Split
- Polyphonic

The Unison mode and the Split mode are very similar. In Unison mode the various possibilities of how notes played on the keyboard affect the functioning of the SEMs applies over the complete keyboard. In Split mode the same rules apply — except that notes played below the split point affect SEM A and notes played at and above the split point affect SEM B.

To set the split point:

1. Press and hold the SPLIT button until the LED flashes.
2. With SPLIT held down, set the split point by pressing a key on the keyboard. The key that you press sets that note as the beginning of the upper split. Notes from this point upward will be played by SEM B.
3. Release the SPLIT button. You can save the split point as a default power-on setting. (See ‘Customizing Power-On Default Settings’ on page 24).
There are four sub-modes within the Unison or Split modes:

- Unison/Split ‘Legato’
- Unison/Split ‘Retrigger’
- Unison/Split ‘Play on Release, Legato’
- Unison/Split ‘Play on Release, Retrigger’

**NOTE:** Each keyboard mode change sends an ‘ALL NOTE OFF’ message on MIDI OUT. If necessary, a hung note can be switched off by pressing the MIDI CHAN button.

**To use Unison/Split ‘Legato’**
This mode is monophonic - each new pressed note replaces the previous one without re-triggering the envelopes. After the first release, nothing happens on other released notes.

*To enable this mode:*
- Press ‘UNISON’ or ‘SPLIT’ - the LED must be ON solid with RE-TRIGGER OFF.

**Unison/Split ‘Retrigger’**
This is the same as the previous mode with but with ‘RE-TRIGGER’ LED on. This mode is monophonic - each new pressed note replaces the previous one with re-triggering of the envelopes. After the first release, nothing happens on other released notes.

*To enable this mode:*
- Press ‘RE-TRIGGER.’

**Unison/Split ‘Play on Release, Legato’**
This mode is monophonic - each new pressed note replaces the previous one without re-triggering the envelopes. If several notes are pressed, releasing one of them plays the previous note pressed without re-triggering the envelopes.

*To enable this mode:*
- Press ‘UNISON’ or ‘SPLIT’ – the LED must be flashing.

**Unison/Split ‘Play on Release, Retrigger’**
This mode is monophonic - each new pressed note replaces the previous one re-triggering the envelopes. If several notes are pressed, releasing one of them plays the previous note pressed, re-triggering the envelopes.

*To enable this mode:*
- Press ‘RETRIGGER’
Trills
A trill is when a performer holds one note down, then presses another note rapidly, alternating between the two. The Trill Mode is enabled when the UNISON / SPLIT LEDs are flashing. (See ‘Customizing Power-On Default Settings’ on page 17.)

To set trills:
- Select the Keyboard Mode (Unison or Split) by pressing the appropriate button in the KEYBOARD CONTROL section. The LED starts blinking.

Polyphonic 2 Voice Toggling
The first note pressed after enabling this mode will play SEM A. The next note pressed will play SEM B. The third note pressed will play SEM A, etc. This mode of operation is sometimes called ‘ROTATE’ mode.

To enable this mode:
- Press ‘SEM A FIRST’ until the LED is off.

Polyphonic 2 Voice SEM A First
The first note played after setting this mode will play the SEM A. If this note is kept pressed, all other notes will play the SEM B by replacing the previous note as long the first note is not released. If the note playing SEM B is kept pressed, all other notes will play the SEM A by replacing the previous note.

To enable this mode:
- Press ‘SEM A first’ - the LED must be continuously ON.

Setting the local keyboard mode on or off
The TVS-PRO can turn its local keyboard on or off. ON means that the internal keyboard controls the SEMs and MIDI out; OFF means that the internal keyboard does not control the SEMs, but still transmits MIDI note information with 8-voice polyphony while ignoring the TVS-PRO keyboard modes.

To set the local keyboard mode:
1. In the KEYBOARD and MIDI section, press the button that is currently on (MIDI CHAN, VELO CURVE, or BEND RANGE). The display will indicate either ‘on’ or ‘off’ depending on the current state
2. Change the MIDI channel using the UP or DOWN buttons or remain on the current channel.
Mini-Sequencer

The ASSIGNMENTS section of the mini-sequencer is one of its most important sections. It is used to select the source of control signals for the two SEMs.

Each SEM can be controlled by one of the following sources:

- The keyboard — press KEYB for SEM A and/or SEM B.
- The Mini-Sequencer — press SEQ A and/or SEQ B for SEM A or SEM B. You can also play a notes on the keyboard during sequence playback.
- A sample/hold source — press S/H for SEM A and/or SEM B. You can change the range of the S/H as well.

To change the sample/hold range:

1. Press SHIFT and S/H. The percentage value of the S/H is displayed.
2. You can change this value from 0 to 99% using the UP and DOWN arrows. The default value is 50%.
You can switch between sequence and keyboard modes while the sequencer is playing by choosing keyboard priority. This can be a valuable tool while performing.

**To add keyboard priority to an SEM:**

1. While the sequencer is running on both SEMs (i.e. both SEQ A and SEQ B are selected), press SHIFT.
2. Press the KEYB button for either SEM A or SEM B. You can now play the keyboard on one SEM while the other continues to play its sequence.
3. To exit this mode, press the KEYB button again or press the SHIFT key twice. Both sequences should now be playing again.

In addition, the keyboard can be used to transpose the sequence when the Mini-Sequencer is controlling one or both SEMs.

The Mini-Sequencer functions in three modes:

- Panel mode
- Sequence mode
- Song mode

**Playing Sequences**

1. First, turn on the power. The TVS-PRO comes up in Panel (‘PA’) mode.
2. Set the ASSIGNMENTs so that both SEMs are driven by the mini-Sequencer. (Enable SEQ A and SEQ B.)
3. Press ‘RUN.’ The mini-sequencer plays whatever is in temporary memory.
4. Press the SEQUENCE STORAGE ‘UP’ or ‘DOWN’ buttons to select a prerecorded sequence number, then press RECALL. The selected sequence plays.
5. Press ‘UP’ or ‘DOWN’ to select another sequence, then press RECALL. The next sequence plays.
Panel Mode

Let's design a new sequence.

To design a new sequence using the knobs:

1. Press the SEQ ‘DOWN’ button to select ‘PA’ (panel mode).
2. Now press ‘SEQ EDIT A.’
3. You can press RUN and tweak the knobs to design in real time or press and hold FWD and BACK to design the sequence with the knobs, one step at a time, setting the number of steps with SEQ LENGTH as needed. The knobs adjust pitch in semitones, which are displayed when you hold either FWD or BACK. For instance, 0 is C, and 6 is F#.
4. You will notice that this new sequence only plays SEM A.
5. Press SEQ EDIT B and repeat the above procedure to design a sequence for SEM B.

If you used step mode to design the sequences, press RUN. You now have a 2-voice polyphonic sequence playing. All parameters are independent for SEQ A and B except for the number of steps and the speed, which are global.

To design a new sequence using the keyboard:

1. Press the SEQ ‘DOWN’ button to select ‘PA’ (panel mode).
2. Set the SEQ LENGTH as needed.
3. Tap (don’t hold) SHIFT.
4. Press ‘SEQ EDIT A.’ Play single notes on the keyboard to design the sequence. NOTE: When loading a sequence from the keyboard the Sequencer will automatically exit SEQ LOAD Mode after playing the last note of the sequence.
5. Tap SHIFT and press SEQ EDIT B to design a second sequence.
6. Now, if you like what you have, you can store it in Flash memory. To do this, press STORE, change SEQUENCE STORE to the desired sequence number and press STORE again. All parameters for SEQ A and SEQ B are saved and the assignment for SEM A and SEM B except for the keyboard transposition.
7. If you want the same sequence in both A and B, press and hold A or B in the SEQ EDIT section depending on which sequence you want to copy. The other button begins to flash - this will be the destination.
8. Press the flashing button and the sequence is copied.
Sequence Mode
With new sequences in Flash memory, you can enter Sequence Mode by pressing the SEQUENCE MODE button and selecting different sequences to play.

Editing Sequences
To edit a sequence, select the sequence and then press ‘SEQ EDIT A’ or ‘SEQ EDIT B.’ Simply step through the sequence using the ‘FWD’ button, and at any given step in the sequence, press an edit button to turn that function on or off. The editable parameters within a sequence are:

- RATCHET 2
- RATCHET 3
- RATCHET 4 (by selecting both of the above simultaneously)
- REST

The above editable parameters can be separately selected for each step in a sequence. In addition, the GATE LENGTH can be selected but only for the complete sequence.

Playing Sequences or Songs
There are different modes to run a sequence or a song. The sequencer can use an external or internal MIDI clock or even start the sequencer using the keyboard. This can be useful in a performance situation.

MIDI clock:
1. Press the MIDI CLK button to select this mode. The MIDI clock LED should be solid.
2. The system is completely controlled by the external clock.

Internal clock:
1. The MIDI clock must be OFF.
2. Press RUN to start or stop the sequencer. The MIDI clocking is available on MIDI output. (See MIDI section.)

Start sequencer by keyboard:
1. The MIDI clock must be OFF.
2. Press ‘SHIFT’ then ‘RUN’ to select this mode. The ‘RUN’ LED should flash.
3. Press a key on the keyboard to start to the sequencer.

Recalling Sequences
1. If not already done, select ‘Sequence Mode.’
2. Press RECALL once, the sequencer number should flash.
3. Select the sequence to recall with the UP or DOWN arrows.
4. Press RECALL again, the sequence number stops flashing.

If you recall a sequence while the sequencer is running, the new sequence will begin at the end of the current sequence.
Erasing Sequences

1. Press SHIFT.
2. Press STORE once. The LED flashes and displays ‘Er.’
3. Select the sequence to erase with the UP or DOWN arrows.
4. Press STORE again. The LED stops flashing. The selected sequence is erased.

Song Mode

Song Mode chains previously recorded sequences in which each step can specify an existing sequence. Each step can be transposed over a 3+ octave range and can be repeated as many times as desired. With this capability, very complex musical arrangements can be created. There are 9 song locations available.

To play a prerecorded song:

1. Press SONG MODE and select a song number with the UP and DOWN buttons.
2. Press RECALL and press RUN.
3. To play another song, stop the clock by pressing RUN again. There are 9 songs available.

   NOTE: It is necessary to stop the Clock in order to change Songs.

Creating a Song

Songs are created from existing sequences.

To create a new song:

1. Press SONG MODE until it flashes.

For each step in the song, do the following:

2. Select the SONG STEP using the SONG STEP ‘UP’ button
3. Press SEQ NO. and choose the desired sequence number using the SEQUENCE STORAGE UP and DOWN buttons.
4. Press TRANS and choose the desired number of ‘transpose up’ half-steps.
5. Press NO. OF REPEATS and choose the desired number of repeats.

When you have completed entering all steps in the song do the following:

6. Advance the SONG STEP to the next value.
7. Press SEQ NO. and choose ‘LP’ (LOOP) as the sequence number.
8. Press STORE and select the SONG NUMBER using the SONG UP and DOWN buttons.
If you are editing an existing song and you want to make it repeat, press the ‘DOWN’ sequence switch until ‘LP’ is displayed. Press the ‘DOWN’ sequence switch until the display indicates Stop (‘St’). At the end of the song, the sequencer will stop.

To erase a song:
1. Press ‘SONG MODE’ if not in SONG or SONG EDIT mode.
2. Press ‘SHIFT’ once. The LED should be on.
3. Press ‘STORE’ once. The LED should be flashing, and ‘Er’ is displayed.
4. Select the song number you wish to erase with the UP or DOWN arrows, or keep it on the current one.
5. Press ‘STORE’ again. The ‘STORE’ LED and the ‘SHIFT’ LED should be off, and the song is erased.

‘Shift’ Functions
The ‘SHIFT’ function adds additional functions to certain button-based features on the TVS-PRO:

- SHIFT+ SEQ EDIT (either A or B) – records a sequence with a keyboard.
- SHIFT + S/H – allows adjustment of the sample/hold range by using the SEQ LENGTH and the UP and DOWN buttons.
- SHIFT + ‘STORE’ – allows erasure of sequences or songs.
- SHIFT + MIDI CLK – allows adjustment of the MIDI clock divider.
- SHIFT + RUN – sets the mode to ‘keyboard triggers start of sequence.’
Customizing Power-On Default Settings

You can customize some of the power-on default settings of the TVS-PRO. The following parameters can be stored and will be recalled following a power up operation:

In the Mini-Sequencer section:
- MIDI clock divider
- Gate length

In the Keyboard section:
- MIDI channel
- Velocity curve
- Bend range
- Keyboard mode
- Retrigger ON or OFF on first press in unison or split modes
- Split point
- Trills

In the Bendbox section:
- Transposition

To store the current panel configuration:
1. Set the any of the above panel settings to your preference.
2. In the Sequence/Song Storage section, make sure the TVS-PRO is in Panel mode. If it is, ‘PA’ will be shown in the LED display.
3. If ‘PA’ is not shown in the LED display, press the SEQUENCE MODE button, then press the UP/DOWN arrow buttons to select ‘PA’ then press the RECALL button.
4. Press ‘STORE.’ ‘PA’ will begin flashing in the LED display.
5. Press ‘STORE’ again. The settings are now stored.

Now, whenever you power up the TVS-PRO, it will default to the settings you have chosen.
Warranty Information

Marion Systems Corporation warrants the TVS-PRO to be free of defects in materials and workmanship for one year from the date of purchase. If troubles arise, please contact Marion Systems so we can determine the best way to handle any needed repairs. You can reach us by email at tom@tomoberheim.com. When contacting us, please provide the following information:

- Product name & serial number
- Your name and address
- Your email address
- Your phone number
- The date and location where you purchased the product

If it is determined that the unit needs to be returned to Marion Systems Corporation, the return cost is the responsibility of the owner. The return of the unit to the owner will be covered by Marion Systems.