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J AM
MAN

User Guide

Unpacking and Inspection

After unpacking the unit, save all packing materials in case you ever need to re-ship. Thoroughly inspect the unit and packing materials for signs of damage. Report any shipment damage to the carrier at once; report equipment malfunction to your dealer.

Notice

This equipment generates and uses radio frequency energy and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to radio and television reception. It has been type tested and found to comply with the limits for a Class B computing device in accordance with the specifications in Subpart J of Part 15 of FCC Rules, which are designated to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause 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 the receiving antenna; relocate the computer with respect to the receiver; move the computer away from the receiver; plug the computer into a different outlet so that the computer and receiver are on different branch circuits. If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions. The user may find the following booklet prepared by the Federal Communications Commission helpful: "How to identify and Resolve Radio/TV Interference Problems." This booklet is available from the U.S. Government Printing Office, Washington, DC 20402, Stock No. 004-000-00345-4.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la class B prescrites dans le Règlement sur le brouillage radioélectrique édicté par le ministère des Communications du Canada.

This triangle, which appears on your component, alerts you to the presence of uninsulated, dangerous voltage inside the enclosure... voltage that may be sufficient to constitute a risk of shock.

CAUTION

RISK OF ELECTRIC SHOCK
DO NOT OPEN
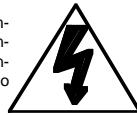
This triangle, which appears on your component, alerts you to important operating and maintenance instructions in this accompanying literature.

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JAM MAN

User Guide

Table of Contents

Introduction

Congratulations on your purchase of JamMan. You now possess a unique new delay device which we believe will become not only an indispensable tool in your setup — but also a new musical instrument. We're certain that, once you begin to realize the full capabilities of JamMan — whether you're composing, performing, teaching, or mixing, your music will never be the same.

Cleverly concealed behind JamMan's deceptively simple front panel, are really three unique effects boxes: a tap-tempo echo, a sampler, and a looping device.

Each of these offers features which are unavailable anywhere else — and all of them are designed to free you from programming. JamMan lets *your* tempo set the pace for echo rates, loop lengths, or samples. It can even control other equipment, such as sequencers and drum machines, via MIDI.

With 8 seconds of memory, a footswitch provided for hands-off control of tempo and reset functions, and complete remote control via MIDI, JamMan really lets you tap into your creativity.

Want more?

A second, optional footswitch allows complete footswitch control of all of the functions available within any JamMan mode.

If you want more memory, you can upgrade JamMan at any time from 8 seconds to 32 seconds. Complete instructions for adding memory are given in the manual.

To make sure you get the most out of JamMan, be sure to read the manual.

SELECT
Depending on the mode of operation, selects feedback level, audio trigger threshold, or selects a loop.

DISPLAY
Significance of symbols varies with mode of operation. Plus (+) and minus (-) symbols, numeric display of digits 0-16, and decimal point provide visual feedback in each mode.

TEMPO
Depending on the mode of operation, LED blinks at the current tempo, or lights during sample record and play.

RESET/BYPASS
Depending on the mode of operation, RESET resets the unit; BYPASS toggles muting.

TAP
Enters timing information. Two pushes define a tempo. Also toggles the selected function on/off.

INPUT
Sets the level of the incoming signal. Status LED indicates acceptable signal level (green), or overload (red).

OUTPUT
Controls the output level.

MIX
Controls the proportion of processed (wet) to unprocessed (dry) signals.

FUNCTION
Selects the function assigned to TAP and lights the corresponding LED (MUTE, LAYER or REPLACE). A blinking LED indicates function is selected and cued to be activated by next TAP. LEDs can also indicate selected echo rhythm.

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MODE
Allows selection of three basic modes: *ECHO*, *SAMPLE* or *LOOP* (*PUNCH-IN* or *PHRASED*).

When the unit is being used with an external MIDI Clock, this knob allows selection of loop size — expressed in MIDI quarter-notes (3 beats/loop, 4 beats/loop, etc.)

Setting Audio Levels

1. Turn the Mode knob to *ECHO*.

2. Turn INPUT and OUTPUT all the way down (fully counter-clockwise).

3. Set the instrument output or effects send being input to JamMan to a nominal level. With an instrument, this should be your loudest playing level; with a console, adjust the output or effects send to produce the highest level possible with the least amount of noise.

4. While sending audio to JamMan, gradually turn up the INPUT control until the status LED* lights green. Continue to advance INPUT until the LED shows red on only the loudest peaks. If the LED shows red continuously, turn the INPUT control down.

5. If JamMan is using a console's sends and returns, set the MIX control fully clockwise (100% wet). If you are using an instrument amplifier, start with MIX set halfway up.

6. Gradually increase the setting of the OUTPUT control until the audio level from the amplifier or mixer is approximately the same as when JamMan is bypassed.
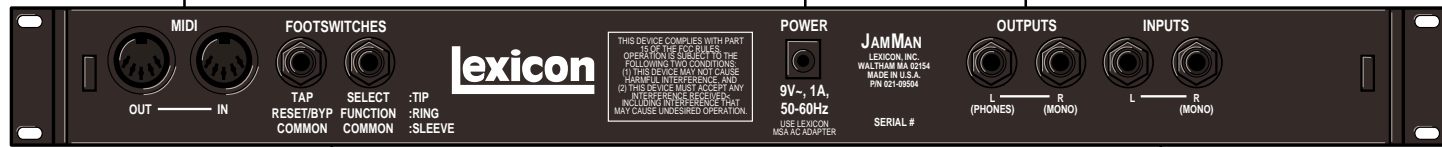
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* The status LED is off when the incoming signal is too low (less than-30dB). Green indicates acceptable levels (-30 to -6dB). The LED lights red to indicate overload (-6 to 0dB).

OUPUT
Single-ended (unbalanced) stereo outputs provide +4dBu nominal output level. Use the right output connector for mono output. If no connection is made at the right output, the left output can be used to drive headphones at modest volume.

MIDI
Two 5-pin DIN MIDI connectors are provided for MIDI IN and MIDI OUT.

POWER
Use Lexicon MSA power pack, or 9VAC 1 amp equivalent.

MIDI   FOOTSWITCHES

OUT —— IN

TAP   SELECT   :TIP
RESET/BYP FUNCTION :RING
COMMON   COMMON   :SLEEVE

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THIS DEVICE COMPLIES WITH PART 15 OF THE FCC RULES. OPERATION IS SUBJECT TO THE FOLLOWING TWO CONDITIONS: (1) THIS DEVICE MAY NOT CAUSE HARMFUL INTERFERENCE, AND (2) THIS DEVICE MUST ACCEPT ANY INTERFERENCE RECEIVED, INCLUDING INTERFERENCE THAT MAY CAUSE UNDESIRED OPERATION.

POWER

9V~, 1A,
50-60Hz
USE LEXICON
MSA AC ADAPTER

JamMan
LEXICON, INC.
WALTHAM MA 02154
MADE IN U.S.A.
P/N 021-09504

SERIAL #

OUTPUTS   INPUTS

L —— R
(PHONES) (MONO)

L —— R
(MONO)

FOOTSWITCHES
Two connectors, for momentary contact footswitches, allow footswitch control of frontpanel functions.

Tip   Sleeve

TIP

RING

TAP

Ring

SLEEVE   RESET/BYPASS
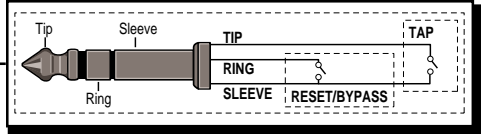
INPUT
Single-ended (unbalanced) inputs accept levels as low as -30dBu. Input impedance is 50 kΩ in stereo, 25 kΩ in mono. Either can be used for mono input.

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Audio Connections

Audio connections to JamMan are unbalanced and should be made with high quality shielded cables with 1/4" tip-sleeve phone jacks at the JamMan end.
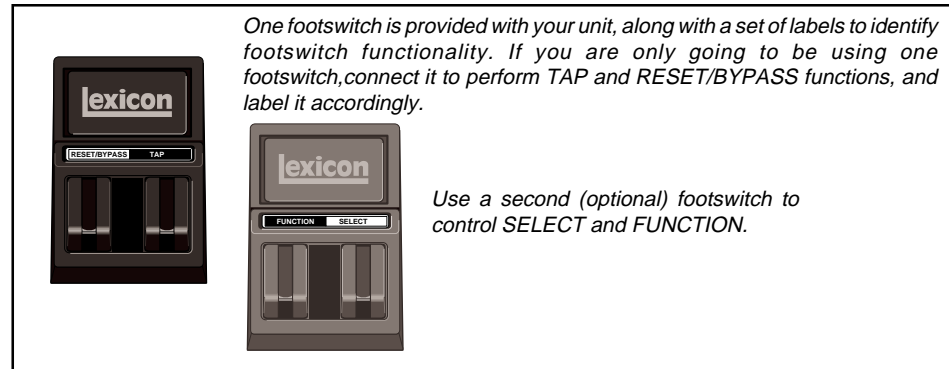
JamMan produces effects from either mono or stereo sources. With mono sources, the dry signal appears, along with audio effects, at both outputs. For instruments and sources with stereo outputs, use both inputs. We recommend using the outputs in stereo whenever stereo inputs are used, but if mono output is required, use the right output jack. The left and right signals are summed internally when only the right output is used.

Headphones

A stereo signal which is adequate to drive headphones is available at the left output (provided no connections are made through the right output). This feature is provided as a convenience for practice purposes, and is intended to provide only modest volume.

Footswitches

Footswitches connected via the rear-panel footswitch jacks allow control of TAP and RESET/BYPASS (or SELECT and FUNCTION). Two momentary foot-switches can be wired to a tip-ring-sleeve connector. A stereo Y-connector allows two identical single switches to be used.

One footswitch is provided with your unit, along with a set of labels to identify footswitch functionality. If you are only going to be using one footswitch,connect it to perform TAP and RESET/BYPASS functions, and label it accordingly.

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RESET/BYPASS   TAP

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FUNCTION   SELECT

Use a second (optional) footswitch to control SELECT and FUNCTION.

With *ECHO*, *SAMPLE*, and *LOOP* modes, JamMan is actually three complete boxes behind a single, easy-to-use front panel. Each operating mode is selected simply by turning the front panel Mode knob (shown below).

Each mode offers a unique and exciting set of functions which are accessible from the front panel, by footswitch control, or via MIDI.
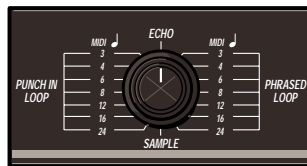
RESET/BYPASS, FUNCTION, SELECT, and TAP will perform different functions, depending on the mode that is selected here.

	ECHO	SAMPLE	LOOP	
			PUNCH-IN	PHRASED
RESET/BYPASS	Bypass	Reset	Reset	Reset at next loop boundary
FUNCTION	♫	Forward Sample Play	Mute	Mute at next loop boundary
	♫ (3)	Reverse Sample Play	Layer	Layer
	♫		Replace	Replace at next loop boundary
SELECT	Feedback	Audio Trigger Threshold	Loop number	Loop number
TAP	Echo Rate	Manual Record/Play	Defines 1st loop; toggles FUNCTION	Defines 1st loop; toggles FUNCTION

The function(s) of each front panel switch in each mode.

The next sections of the manual describe each mode in detail, with step-by-step instructions to get you started in each mode.

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With JamMan, you no longer have to struggle with calculations of appropriate delay times to create rhythmic echoes when you play. Now, you can tap a tempo, and JamMan will sync to you.

ECHO mode allows you to tap in a delay time in whatever tempo you want. Simply press TAP twice in rhythm to establish the tempo you want — the *TEMPO* LED on the front panel will start blinking at the echo rate you've set. Sixteen levels of feedback control (echo regeneration) are provided through the front-panel SELECT knob, or via footswitch.

Once you've tapped in the basic rhythm (for example, quarter-notes), pressing FUNCTION allows you to split the echo rate into eighth-note, triplet, or sixteenth-note echo rates, or to keep it in the basic quarter-note rhythm — the echo rate will always fit musically with the tempo you've established. Changing tempos is as easy as tapping in a different rhythm.

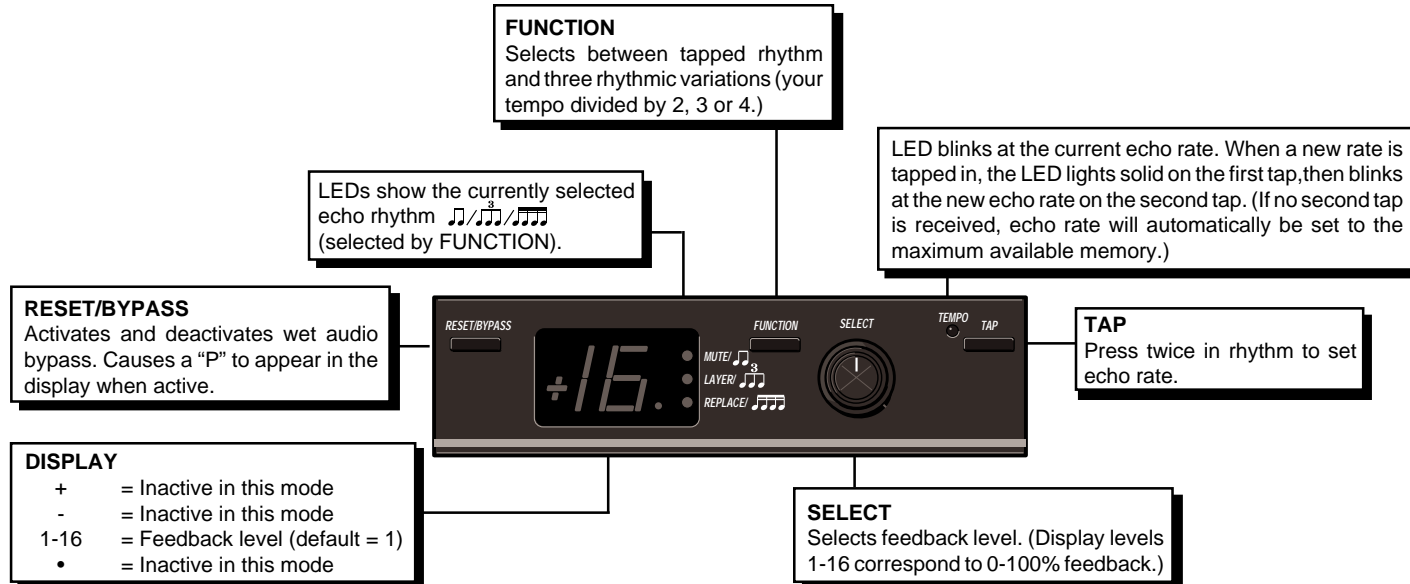Pressing RESET/BYPASS mutes the echo effect.

Set Mode knob to *ECHO*.
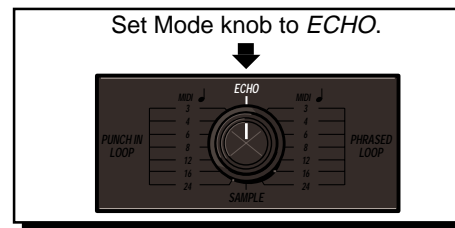
With JamMan on, and an audio source connected,

1. Turn the Mode knob to *ECHO.*

2. Set the front panel MIX control halfway between *DRY* and *WET*.

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Basic Echo

FUNCTION
Selects between tapped rhythm and three rhythmic variations (your tempo divided by 2, 3 or 4.)

LED blinks at the current echo rate. When a new rate is tapped in, the LED lights solid on the first tap,then blinks at the new echo rate on the second tap. (If no second tap is received, echo rate will automatically be set to the maximum available memory.)

LEDs show the currently selected echo rhythm ♫/♫♫/♫♫♫ (selected by FUNCTION).

RESET/BYPASS
Activates and deactivates wet audio bypass. Causes a "P" to appear in the display when active.

TAP
Press twice in rhythm to set echo rate.

RESET/BYPASS   FUNCTION   SELECT   TEMPO   TAP

÷16.

MUTE/♫³
LAYER/♫♫
REPLACE/♫♫♫

DISPLAY
+	= Inactive in this mode
-	= Inactive in this mode
1-16	= Feedback level (default = 1)
•	= Inactive in this mode

SELECT
Selects feedback level. (Display levels 1-16 correspond to 0-100% feedback.)

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When you run any sound through Jam-Man, you will hear a very quick echo. (This is JamMan's default echo rate of 80ms.)

The display indicates feedback level. When you select Echo mode, this control will default to 1 (no feedback). Turning the front panel SELECT knob clockwise will increase the number of echo repetitions you hear. The highest setting (16) provides infinite feed-back. Be careful! This can cause signal overload as echoes continually accumulate.

Change the echo rate

To change the echo rate, simply TAP two beats — JamMan will adjust the echo rate to whatever rhythm you tap — so the results will always be musical.

For example, TAP two beats in any tempo you want. Now, anything played through JamMan will have a one-beat echo repeat at whatever tempo you tapped. The *TEMPO* LED will flash in time.

To select a new echo rate at any time, just TAP twice. RESET/BYPASS allows you to mute the current rhythm while tapping in a new one.

Vary the rhythm

FUNCTION allows you to select among four echo rates on the fly: the rhythm you TAP in, and three variations on your original rhythm.

To hear how this works:

1. Play audio through JamMan, and TAP in two quarter-notes in time with your audio source.

2. Press FUNCTION. The first push will divide the echo rate in half. You should now be hearing eighth-note repetitions. — Note that the uppermost display LED is lit to indicate division of the original echo rate by 2.

3. Press FUNCTION again to hear your original echo rate change to eighth-note triplets. The middle display LED should light.

4. Press FUNCTION again to hear your original echo rate in sixteenth-notes. The bottom display LED should light.

5. Press FUNCTION again to return to your original echo rate. None of the display LEDs should be lit.

Note that you can set any of these rhyth-mic variations *before* you tap in a tempo — allowing you, for example, to tap in quarter-notes and get a sixteenth-note echo rate.

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More about *ECHO* mode

Remember that it takes only two TAPs to set an echo rate ...

If TAP is only pressed once, JamMan will set the longest echo rate possible (8 seconds, or 32 seconds, depending on the memory capacity of your unit.)

The *TEMPO* LED, will light solid on the first TAP, then start blinking at the selected echo rate after the second TAP. This LED continues to blink at the tapped in echo rate, no matter what rhythmic variation is chosen.

Pressing FUNCTION gives you four rhythmic variations of any rhythm you TAP ...

Tapped-in Rhythm

Rhythmic Variations   **FUNCTION Setting**

(No LEDs Lit)

MUTE /

LAYER /

REPLACE /

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Sample Mode

SAMPLE mode allows you to capture a single sample of as long as 8 seconds (32 seconds with memory upgrade).

Once a sample is recorded, you can set it to play forward or backward. — You can even change direction as many times as you like during playback. You can trigger play manually (or via footswitch), or set it to play in response to one of fifteen levels of audio threshold.

Set Mode knob to *SAMPLE*.
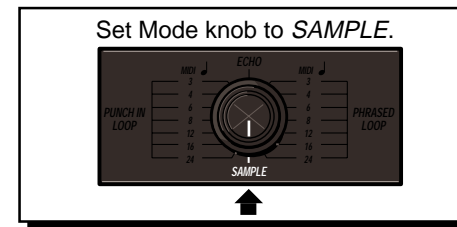
With JamMan on, and an audio source connected,

1. Turn the Mode knob to *SAMPLE.*

2. Set the front panel MIX control halfway between *DRY* and *WET.*

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Basic Sampling

FUNCTION
Toggles "+" and "-", selecting whether the recorded sample is to play forward or backward.

LED lights during sample record, flashes on start of sample play.

LEDs are Inactive in this mode.

RESET/BYPASS
Resets the unit to sample record ready. Does not affect audio threshold or +/- settings.

TAP
If no audio trigger is specified via SELECT, first push starts recording; second push stops recording. If an audio trigger has started recording, first push will stop recording. Once a sample is recorded, subsequent pushes restart sample play.

If an audio trigger is set to 2-16, pressing TAP overrides the audio trigger to start recording.

RESET/BYPASS   FUNCTION   SELECT   TEMPO   TAP

÷16.

MUTE/ ♪₃
LAYER/ ♫
REPLACE/ ♫

DISPLAY
  +   = Sample selected to play forward; flashing = ready to record
  -    = Sample selected to play backwards
1-16 = Audio trigger threshold
  •   = Indicates audio sample is stored
Single segment chase pattern indicates sample record; dual segment chase patterns indicate forward and backward sample play.

SELECT
Selects audio threshold which triggers start of sample record or play. (1 = manual trigger via TAP, 2-16 correspond to increased sensitivity — lower audio levels required for trigger.)

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Manually-triggered samples

1. Set SELECT to "1" to allow TAP to trigger sample record start and stop. A flashing plus symbol (+) indicates JamMan is ready to record.

2. Send an audio source into JamMan.

3. Press TAP. The display will show a single-segment chase pattern to indicate JamMan is recording.

4. Press TAP again to stop recording. If a second TAP is not received, recording will be stopped automatically when the memory capacity of the unit is reached.

5. These two TAPs define your sample. Once a sample has been captured, a decimal point will be displayed to indicate a sample has been recorded.

Now, pressing TAP will trigger sample play. Dual-segment chase lights will be displayed during sample play.

You can re-trigger sample play whenever you like, even during playback.

Backward sample play

Once a sample has been recorded, press FUNCTION to change the plus (+) in the display to a minus (-).

Now, pressing TAP will cause the sample (and the display chase lights) to play backwards.

You can press FUNCTION at any time during sample play to toggle forward and reverse playback.

Audio triggered playback

1. If you have already captured a sample, run an audio source into JamMan, and turn the front panel MIX control all the way to WET. This will let you hear your sample whenever it is triggered without hearing the material that is triggering sample play.

2. While sending audio into JamMan, slowly increase the setting of SELECT until your sample starts to play. (The TEMPO LED will flash when the audio threshold has been reached.)

   All of the display indicators are the same as for manually-triggered sample play — and FUNCTION toggles reverse play on your audio trigger.

3. Lower MIX to 50% to hear both the sample and the audio trigger.

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Audio triggered record

1. If you have already captured a sample, press RESET/BYPASS.

2. Now, your audio trigger will start the recording of a sample. Press TAP to stop recording, or let the memory capacity of your unit fill with your sample.

More about *SAMPLE* mode

If you are using an audio trigger and find that the beginning of your sample is being cut off on playback, raise the audio threshold.

If, on audio triggered sample playback, the sample is retriggering too easily, lower the threshold.

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JamMan provides two versions of its *LOOP* mode, *PUNCH IN* and *PHRASED.* These are differentiated primarily by whether you want the overdub functions you've selected to occur immediately, or at the start of the next musical phrase.

Either mode allows you to play a loop of any length (up to the memory capacity of the unit), which will replay indefinitely with no degradation of audio quality. Once a loop is recorded, you can add as many layers as you like. Depending on your choice of initial loop length, multiple loops (as many as eight) can be created and selected for play, or layering. Mute, replace, and cue functions are also available.

RESET, MUTE and REPLACE can be automated to start at the loop boundary by selecting PHRASED LOOP. In PUNCH IN LOOP, these functions will occur on your manual trigger.
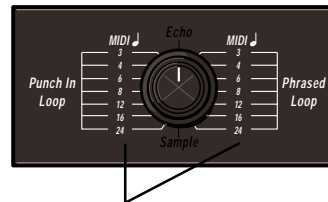
These numbers allow you to choose the number of MIDI quarter-notes in a loop when you are working with a drum machine, or a sequencer.

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JamMan sends out MIDI clock signals in the tempo established by your loop, allowing sequencers, drum machines, or other Jam-Man units to sync to *your* tempo. Alternatively, you can send MIDI Clock to JamMan, allowing you to capture loops which are perfectly timed to the MIDI tempo.

To get started in *LOOP* mode, connect an audio source to JamMan and,

1. Turn the Mode knob to *PUNCH IN LOOP* and set it to 4.

2. Set the front panel MIX control halfway between *DRY* and *WET*.

Basic Looping

DISPLAY
+ = Loop displayed is cued to begin at start of next phrase
- = When recording first loop, indicates less than 1 second of memory remains
1-8 = ID number of current, or cued loop
• = Indicates displayed loop is the final loop of the current sequence
0 = ready to define the first loop of a new sequence
Chase pattern indicates loop recording.

FUNCTION
Selects MUTE, LAYER, or REPLACE as the dub function assigned to TAP.

SELECT
Selects among a maximum of 8 loops. (Loop ID number is displayed.) The actual number of loops which can be made is determined by the length of your first loop.

LED lights while first loop is being recorded, then blinks at the tempo set by that loop.

TAP
First push starts recording. Second push stops recording and immediately plays the loop. Subsequent pushes turn on and off the selected dub function.

RESET/BYPASS   FUNCTION   SELECT   TEMPO   TAP

MUTE/ ♫ 3
LAYER/ ♫♫
REPLACE/ ♫♫♫

RESET/BYPASS
In Punch-In Loop mode, immediately resets the unit to begin a completely new sequence of loop recording. In Phrased Loop mode, reset will occur at the end of the current loop.
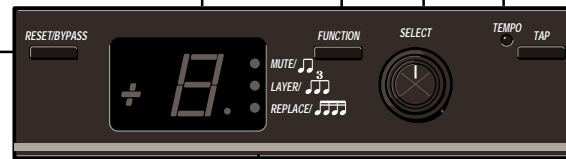
LEDs (activated via FUNCTION) show selected and cued dub functions.

● Off: Function not selected
◐ Blinking: Function cued
○ On: Function active

Punch In Loop

Make a Loop

1. Start off by playing a repeating 4-beat pattern — at any tempo you want.

2. Once you feel that the timing is solid, press TAP on the first beat of your pattern.

   The display will show a single-segment chase pattern to indicate that JamMan is recording.

3. Press TAP again on the downbeat of the next pattern repeat.

You've just created a loop! Two TAPs define a loop which starts replaying on the second TAP. Note that the *TEMPO* LED is now blinking at the tempo you've set, and the display now reads "1", indicating that your first loop is playing. Now that you've captured a loop, you can do a variety of things to it, such as layering it with additional sounds.
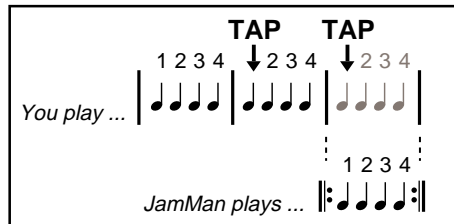
Add layers of sound to your loop

Note that the front panel LAYER LED is blinking, indicating that the LAYER function is cued.

Pressing TAP turns layering on, allowing you to add new material to your loop. You can start layering sound onto your loop wherever you want, and for as long as you want. Press TAP again to turn the layering function off.

Replace a portion of your loop

Press FUNCTION to select the RE-PLACE function. The LED will blink, indicating that JamMan is ready to record. Press TAP to start replacing, press TAP again to turn the replace function off. In Punch-In, you can replace only a portion of the loop, or replace the entire loop on the fly.

Mute

Press FUNCTION to select MUTE. The LED will blink, indicating that TAP now controls muting of your loop. Note that your loop continues while mute is in effect. When you press TAP again, your loop will still be in time.
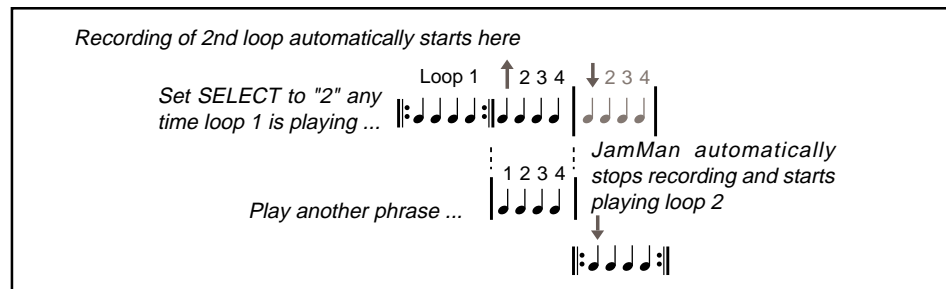
Cue the next function

Any of these functions can be cued to take effect on the next press of TAP.

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Playing with multiple loops

The ability to make multiple loops is one of the features that sets JamMan apart, and makes it an instrument you can *play*. Making additional loops is really as simple as making the first one, but getting a feel for it will probably take a couple of tries.

For this example, make a loop which is only a couple of seconds long. Play along with loop 1 for awhile. When you're ready to make another loop, cue up recording by turning SELECT clockwise to select "2". A plus symbol (+) in the display, indicates that recording of loop 2 is cued to start at the next loop boundary.

Once you've set SELECT, you're committed to recording the next loop. Recording will begin automatically at the next loop boundary. Loop 2 will stop recording and start playing as soon as the pre-determined loop size is reached.

Recording of 2nd loop automatically starts here

Set SELECT to "2" any time loop 1 is playing ...

Play another phrase ...

JamMan automatically stops recording and starts playing loop 2

The fact that recording starts and stops automatically, allows you to cue up recording of the next loop while you are playing, then continue playing into the next loop without missing a beat.

JamMan allows you to make as many as 8 loops in this manner — with another loop number being made available whenever SELECT is turned clockwise. The decimal point in the display will light when the loop number displayed is the last loop that can be made in the current sequence.

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Things to keep in mind

- All loops in a sequence will be the same length. The size of the first loop you make sets the size for all other loops in a sequence.

- The size of your first loop determines how many additional loops can be made — up to a maximum of 8.

- Loops must be recorded in numerical order.

- Once you've created a loop sequence, loops can be selected (via SELECT, footswitch, or MIDI Program Change message) to play in any order.

- When you start recording another loop, you will no longer be hearing the previous loop. Therefore, it helps to be playing along with an audible time reference, such as a foot tap, drum machine, sequencer, another player, a metronome, etc.

- A second footswitch connected to control SELECT and FUNCTION allows you to cue the next loop for recording without taking your hands off your instrument.

- Expanding JamMan memory to 32 seconds really opens up the creative possibilities of multiple looping.

Phrased Loops

Set Mode knob to any position in the *PHRASED LOOP* section.
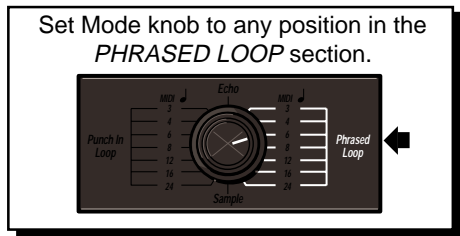
Selecting Phrased Loop with the Mode knob allows you to create loops exactly as with Punch-In loops — two TAPs still define the length and tempo of your loop. Once you have created a loop, however, RESET, MUTE and REPLACE functions, instead of occurring immediately, will occur *at the beginning of the next loop boundary.*

Selecting REPLACE, and pressing TAP, automatically starts recording at the beginning of the selected loop. You can turn off REPLACE before the end of the loop by pressing TAP a second time.

The LAYER function, as in Punch-In, is activated immediately on TAP.

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Using MIDI Clock

JamMan recognizes and transmits MIDI Clock, allowing you to synchronize connected MIDI devices to JamMan's tempo, or to have JamMan follow another device's tempo.

Within the *PUNCH IN* and *PHRASED LOOP* sections of the Mode knob, there are a set of numbers which allow you to select the number of MIDI quarter-notes you want in each loop.

When you are using JamMan with other MIDI devices, these numbers allow you to define your loop size in terms of MIDI quarter-notes.
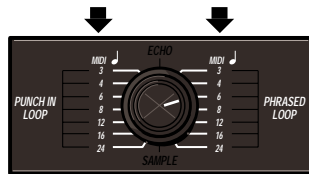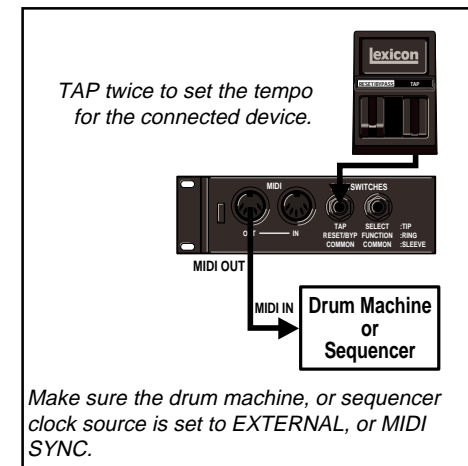

For the following examples, we'll assume a drum machine is connected to JamMan.

Control the tempo of another device

With a drum machine connected to JamMan's rear-panel MIDI OUT jack, set the JamMan Mode knob to the number of beats you want in your loop — for example, 8. When you create your first loop, JamMan transmits the appropriate MIDI messages to start playing the drum machine in perfect time with the loop you just created.

In this example, the drum machine will automatically be set so that 8 MIDI quarter-notes fit perfectly within one repetition of your loop.

No matter what tempo you TAP into JamMan, the drum machine will always stay in perfect sync.

TAP twice to set the tempo for the connected device.

Make sure the drum machine, or sequencer clock source is set to EXTERNAL, or MIDI SYNC.
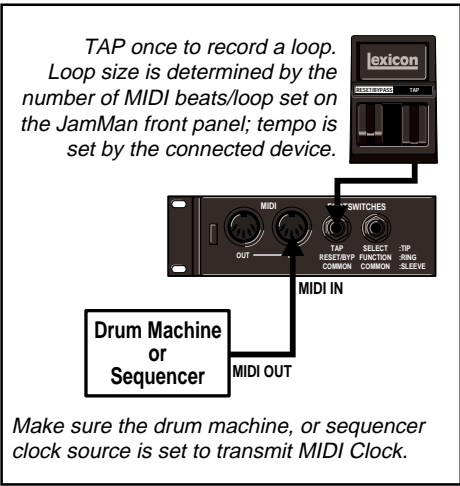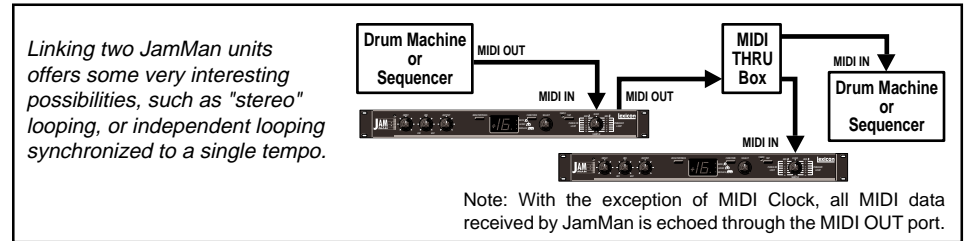
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Let another device determine JamMan's loop size

With a drum machine, or sequencer connected to JamMan's rear-panel MIDI IN jack, set the Mode knob to the number of beats you want in your loop — for example, 4.

When RESET/BYPASS is pressed, the *TEMPO* LED should flicker to indicate that MIDI Clock is being received.

Press TAP to start recording a loop. The *TEMPO* LED will light solid while the loop is being recorded. Unless a second TAP is received before 4 beats have elapsed, JamMan will automatically stop recording the loop after 4 beats and start playing the loop — in perfect time with the drum machine.

Note that if you select a tempo/loop size combination which exceeds JamMan's memory limit, no loop will be created.

TAP once to record a loop. Loop size is determined by the number of MIDI beats/loop set on the JamMan front panel; tempo is set by the connected device.

Make sure the drum machine, or sequencer clock source is set to transmit MIDI Clock.

Linking two JamMan units offers some very interesting possibilities, such as "stereo" looping, or independent looping synchronized to a single tempo.

Note: With the exception of MIDI Clock, all MIDI data received by JamMan is echoed through the MIDI OUT port.

Adding Memory

JamMan can be upgraded from 8 seconds of memory, to 32 seconds, simply by installing four 1M x 4 bit ZIP ICs.
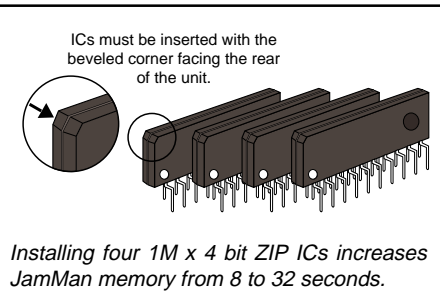
These can be purchased through your Lexicon dealer, direct from Lexicon, or from computer electronics suppliers. If you purchase the memory upgrade from Lexicon, the ICs will be labeled as shown below.

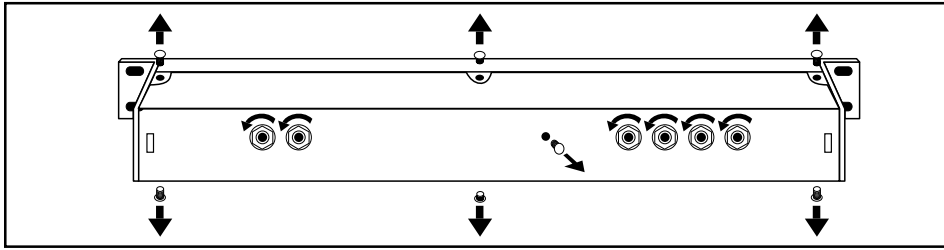| Manufacturer	Label
Motorola	MCM54400AZ
Hitachi	HM514400AZP
NEC	D424400V
Fujitsu	MB814400
Mitsubishi	M5M44400L
Micron	MT4C4001JZ

Installing the memory upgrade is not difficult, but care should be taken in handling ICs, as well as in disassembling and reassembling your unit. ICs can be damaged by static electricity, and incorrect insertion can damage both the IC and your unit. Observe the following precautions:

- Keep parts in original containers until ready for use.
- Avoid plastic, vinyl or styrofoam in the work area.
- Discharge personal static before handling.
- Minimize handling; avoid touching IC pins.
- Do not slide ICs over any surface.
- Insert ICs with the proper orientation.
- Watch for bent pins on ICs.

ICs must be inserted with the beveled corner facing the rear of the unit.

Installing four 1M x 4 bit ZIP ICs increases JamMan memory from 8 to 32 seconds.

Before performing the memory upgrade procedure, disconnect JamMan from its power supply.

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1. Remove the six (6) hex nuts on the rear panel connectors by turning them counterclockwise.

2. Remove the seven (7) screws which attach the JamMan cover. Note for reassembly that the screws at the center top, center bottom, and on the rear, are *shorter* than the others.

3. Place the unit upside down on a clean, static-free surface. Pull out the rackmount extensions on each side of the unit, and slide the cover off of the unit.

4. Locate the four ZIP ICs mounted at the center of the p.c. board just behind the front panel. Note that each is inserted into its socket with a beveled corner facing the rear of the unit.
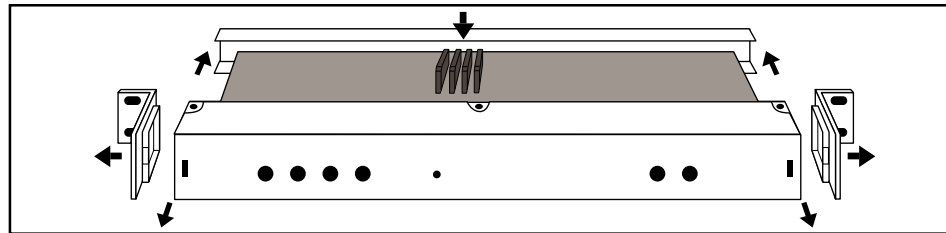
5. Gently pull each IC out of its socket. *Do not rock the ICs* to loosen them. Put these aside so that you do not confuse them with the upgrade ICs.

6. Carefully align each new IC over a socket, with the beveled corner toward the rear of the unit. Insert it, making sure no pins are bent. Make sure each IC is fully seated in its socket.

7. Reassemble the unit.

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Lexicon JamMan

Function		Transmitted	Recognized	Remarks
Basic Channel	Default Channel	X X	1 1	Can be disabled on power up[1]
Mode	Defaullt Messages Altered	X X -	3 X X	
Note Number	 True Voice	X -	X -	
Velocity	Note ON Note OFF	X X	X X	
After Touch	Keys Channels	X X	X X	
Pitch Bender		X	X	
Control Change	0-95	X	X	

Function		Transmitted	Recognized	Remarks
Program Change	True #	X -	1-20 -	mapped to front panel controls[2]
System Exclusive		X	X	
System Common	:Song Pos :Song Sel :Tune	X X X	X X X	
System Real Time	:Clock :Commands	O O	O X	
Aux Messages	:Local ON/OFF :All Notes OFF :Active Sense :Reset	X X X X	X X X X	
Notes:	With the exception of MIDI Clock, all MIDI data received is echoed through the OUT port. 1. See next page for power-up procedure to disable receipt of MIDI Progam Change messages. 2. See next page for MIDI Program Change map.			

Mode 1: OMNI ON, POLY   Mode 2: OMNI ON, MONO   **O : Yes**
Mode 3: OMNI OFF, POLY   Mode 4: OMNI OFF, MONO   **X : No**

MIDI Implementation Notes

All front panel controls can be accessed via MIDI Program Change messages as shown. These messages are recognized on MIDI Channel 1.

Recognition of these messages can be temporarily disabled, or assigned to another MIDI Channel with the following power-up procedure:

1. Simultaneously press RESET/BYPASS, and FUNCTION, while applying power to the unit. A "d" should appear on the display.

2. Press RESET/BYPASS, then turn the Mode knob until "15" is displayed.

3. Press RESET/BYPASS. The display will show "1", and the edit indicator will appear. Turn SELECT to assign 0 (off) or MIDI Channel 1-16.

4. Press RESET/BYPASS, then turn the Mode knob until "9" is displayed. Press RESET/BYPASS again to resume normal operation with the new assignment.

MIDI Program Change Map			
Pgm Chg #	Loop mode	Sample mode	Echo mode
1	tap	tap	tap
2	reset (punch-in)	reset	bypass
3	reset (phrased)	reset	bypass
4	replace (punch-in)	forward/reverse	divide by 2
5	replace (phrased)	forward/reverse	divide by 2
6	layer	forward/reverse	divide by 3
7	mute (punch-in)	forward/reverse	divide by 4
8	mute (phrased)	forward/reverse	divide by 4
9	fade short	audio threshold 1	feedback 1
10	fade medium	audio threshold 3	feedback 3
11	fade long	audio threshold 5	feedback 5
12	cue loop 1	audio threshold 7	feedback 7
13	cue loop 2	audio threshold 9	feedback 9
14	cue loop 3	audio threshold 11	feedback 11
15	cue loop 4	audio threshold 13	feedback 13
16	cue loop 5	audio threshold 15	feedback 15
17	cue loop 6	-	feedback 16
18	cue loop 7	-	-
19	cue loop 8	-	-
20	mute/restart	-	-

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Any changes made to Channel assignment are temporary. Recognition of these messages on Channel 1 will be re-enabled on power-up.

MIDI Fade

A fade option is available via MIDI. Program Change messages 9, 10, and 11 allow selection of three fade durations. Due to the nature of the fade, duration designations are simply "short", "medium", and "long".

Enabling fade causes a level reduction with each loop repeat. The actual duration of a fade will vary with loop length.

Note that when fade is active, all front panel function LEDs will light. If TAP is pressed while a fade is active, JamMan will resume loop play with LAYER cued. Play is resumed at the faded level.

MIDI Mute/Restart

MIDI Program Change 20 allows you to stop (mute) JamMan. When this message is received, the current loop is muted, and a stop message is transmitted via the OUT port. The front panel MUTE LED will light, and the *TEMPO* LED will flash to indicate JamMan is muted with a loop running.

Once JamMan is muted this way, a second Program Change 20 will restart both the current loop, and any connected drum machine, allowing you to resume play at the beginning of a loop.

Any other Program Change message (1-19), or any footswitch or front panel command received while JamMan is muted with Program Change 20, will cause JamMan to unmute and act on the command.

You can control JamMan from a MIDI Controller that sends MIDI Program Change messages.
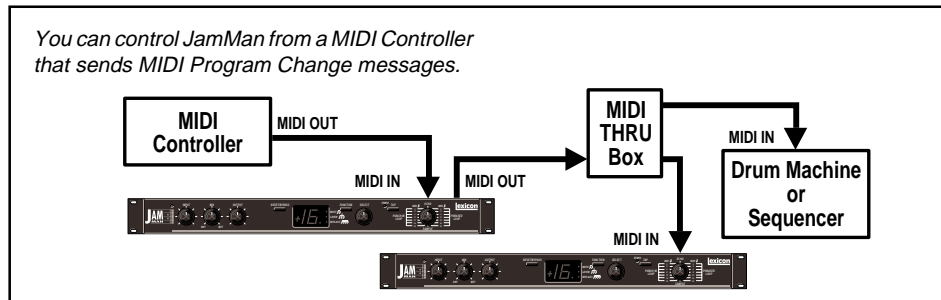
Specifications

Audio Inputs (2)
- *Level* -30dBu minimum
- *Impedance* stereo/50 kΩ unbalanced
  mono/25kΩ unbalanced

Audio Outputs (2)
- *Level* -2dBu nominal
- *Impedance* 60Ω unbalanced
- *Muting* reduces transients during power on/off

Footswitches
Tip/Ring/Sleeve phone jacks (2) for:
   Reset/Bypass and Tap (footswitch included)
   Function and Select (optional)

Frequency Response
- *Wet* 20Hz-15kHz, +1dB to -3dB
- *Dry* 20Hz-20kHz, ±0.5dB

THD+N
- *Wet* <0.05%@1kHz
- *Dry* <0.025%@1kHz

Dynamic Range
   85dB typical, 20Hz-20kHz bandwidth

Conversion
   16 bit linear PCM encoding;
   31.25kHz sampling rate

Power Requirements
   9VAC, 1A wall transformer provided

Dimensions
   19"W x 1.75"H x 4"D (483 x 45 x 102mm)

Weight
   Unit: 2 lbs, 12 oz (6.1kg)
   Footswitch: 8.5 oz (1.2kg)

Environment
- *Operating Temperature* 32° to 104°F (0° to 40°C)
- *Storage* -30° to 75°C
- *Relative Humidity* 95% non-condensing

Specifications subject to change without notice.