

U1mDrum

Jackbox
Drum Module
version 1.5



Operation Manual

1. Introduction

We would like to welcome you and thank you for your trial / purchase of Quadelectra Jackbox L1MDrum Module.

The Quadelectra Jackbox L1MDrum Module is an 8-bit drum sample module inspired by the legendary LinnDrum, which made its mark in the early 80s, and it's still praised for its distinctive gritty sound. The LinnDrum used 8-bit μ Law encoded samples which were stored in one or more EPROM chips, depending on the length of that sound. It's this process of decoding and playing back that gave LinnDrum its raw unique sound.

We've managed to recreate these results by following the same process, in order to deliver the most possible authentic experience. Which means that your L1M actually uses 8-bit μ Law samples which are also decoded and played in real time! Just like the reference hardware device.

But that's not all!

You see, one of the things you could do in an original LinnDrum was to alter the device drum set! To do that, musicians back in the day would open the unit itself and swap the actual sound chips on the board! By using our ASIC (Audio to String Interchange Conversion) and taking it one step further, you now can too change your L1M's drum set!!! Yes! We mean you can change individual samples or even the whole drum set. Since L1M stores and uses μ Law samples, just like its hardware counter part, you can even dump your own EPROMS or download others that are freely available in the internet and import them to your L1M! Of course you can also use WAV and AIF files if you wish; These files will be transcoded to match the format used by the L1MDrum.

The alterations you make to the stock drum sounds are saved in the form of a regular Rack Extension Patch File. Since the RE SDK does not provide a mechanism to import samples to RE's you must use our L1M Virtual EPROM Tool application to create these patches. The L1M Virtual EPROM Tool is absolutely free, and you can download it from our website.

2. The Front Panel

L1M's front panel is divided in 8 sections:

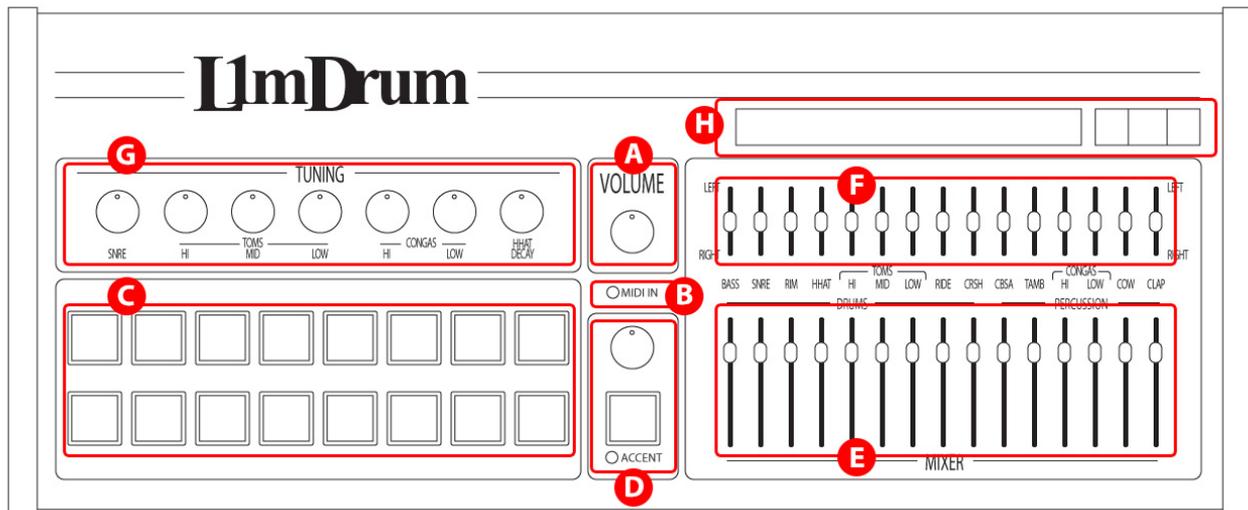


Fig.2-1: The L1mDrum Front Panel

- A. **Main Volume:** Simply -as you'd expect- sets the device global volume.
- B. **MIDI In:** Lits up indicating a MIDI Note On message.
- C. **Drum Pads:** These are the 16 drum pads which you can use to preview the sounds of the current drum set. Note that the pads "obey" the accent setting and they will trigger a sound at full velocity (127) instead of the default 100.
- D. **Accent:** The accent section of the device. Enabling the accent mode will cause the device to use only three velocity stages (weak, mid and strong hits) mimicking the behavior of the reference hardware device. See more about accent on chapter 4.1. The Accent Mode.
- E. **Level Mixer:** The level mixer allows you to set the volume for each drum sound individually. The level setting will also affect those drum sounds that have been routed from their dedicated outputs.
- F. **Panning:** For all sounds which share the main output stereo pair, there's also an option to pan them left or right.
- G. **Tuning Pots:** This section enables you to tune specific sounds from the drum set. See more about this functionality on chapter 4.2. Tuning Your Sounds
- H. **Patch Browser:** The Patch Browser in L1M's case is solely used to change the default drum samples of the device. You can load patches from our collection that's shipped with the device, or from other users, or even create your own. More on loading custom drum sets on chapter 4.3. Loading Custom Drum Sets.

3. The Rear Panel

The rear panel of L1MDrum looks like this:

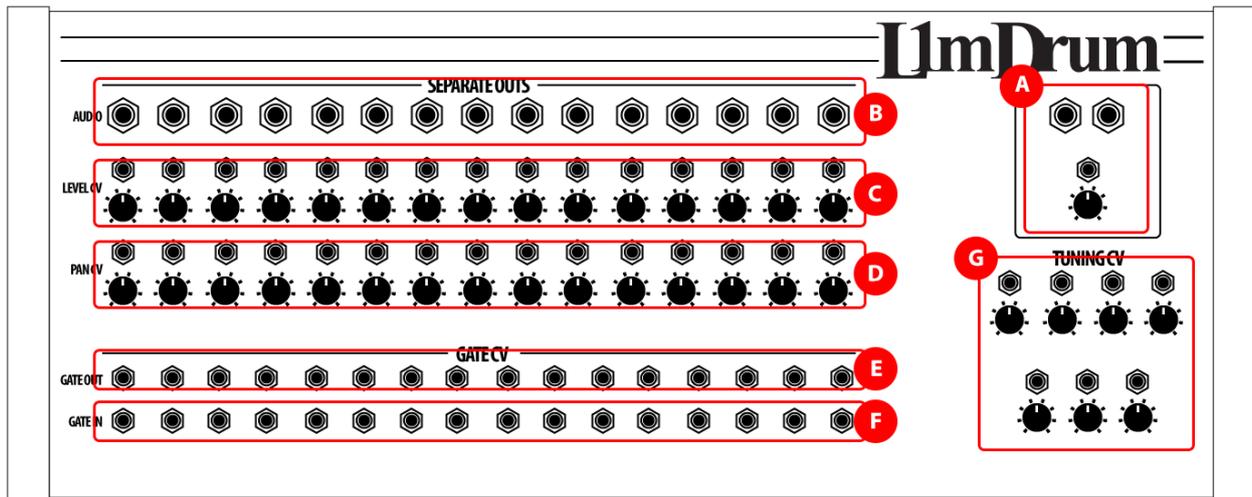


Fig. 3-1: The L1MDrum Rear Panel.

The panel is divided into 8 different sections:

- A. **Main Output:** The Main stereo output of the unit. All drum sounds are sent to this output after they are leveled and panned at the front panel. That is unless a specific sound is sent through its dedicated output (see B).
- B. **Separate Outputs:** Each drum sound has its own separate output. Separate outputs are monophonic, and once you connect one to another input, the sound to which is dedicated is muted from the main output (see A).
- C. **Level CV Mod Inputs:** You can connect CV signals from other devices to these CV inputs, to control the amplitude of each level.
- D. **Pan CV Mod Inputs:** You can also connect CV signals from other devices to the Pan CV Mod Inputs to control the pan position for each
- E. **Gate Outs:** You can use L1M to trigger external devices, such as other drum machines, by connecting the Gate Out of a specific drum sound to the gate in of that device.
- F. **Gate Ins:** Subsequently you can use other external devices to trigger the drum sounds from the L1MDrum by connecting their Gate / Trigger CV outputs to the Gate Ins of the L1M.
- G. **Tuning CV Mod Inputs:** Finally the Tuning CV inputs provide a way to control the tuning pots of your L1M using the CV output signals from other external devices.

Note: Open and Closed Hi-hat share the same audio output, level and pan cv inputs.

4. Features

In this section we further discuss some of the features of the device.

4.1. The Accent Mode

The accent mode for L1M works a bit different than the other Jackbox devices, in respect to the reference hardware device.

Original LinnDrum had 3 different types of hits for each drum (a weak, a mid, and a strong). When enabling the “Accent” function, the pads on the device will trigger the sounds at full velocity. Yet when playing sounds on your MIDI keyboard the Note On velocity is quantized between the three hits, just like in the original.

When disabling the “Accent” function, drum pads will return to the normal state (ie triggering sounds at the mid velocity setting), and the sounds you play from the MIDI will use the entire velocity range and resolution.

However in both modes you can change the velocity sensitivity using the “Accent” knob. Turning the knob fully left will flatten the velocity range to the upper / strongest value, while turning the knob fully right will return the velocity to it's full range.

4.2. Tuning Your Sounds

L1MDrum has the same tuning pots like its hardware counterpart. The tuning span is approximately one octave (+/- 6 semitones).

Snare tuning also affects the Side Stick (Rim shot) pitch too...

The sixth tuning pot changes the decay of the closed hi-hat. At it's highest value the knob will fully enable the decay slope, causing the closed hi-hat to sound like the open.

4.3. ASIC Drum Sets

L1MDrum uses the standard Rack Extension patch format to change some or all of its available drum sounds. This feature is not available directly through the Rack Extension SDK, and exists prior to its 3.0 iteration which enabled the loading of user samples. The creation of the patch files that use ASIC, requires an external application.

This application is called L1MDrum Virtual EPROM Tool and its available from our website free of charge!

In versions prior to 1.5, device settings such as Pan, Volume and Tuning were not saved with the patch. Since 1.5 this is not the case anymore.

4.4. Custom Samples

Version 3.0 of the Rack Extension SDK introduced the ability to load external samples.

We've made it possible to integrate this feature to the L1M as an extension over the existing ASIC option from the previous version, so that both methods of adding custom samples may co-exist. That being said, user samples are loaded on-top of existing stock or ASIC packed ones, and not in replacement of.

The loaded samples are subject to the same “rules” as their ASIC counter parts. Meaning that they are truncated to each sound’s designated memory length, and resampled to 8-bit μ Law encoding at 24Khz.

When a user sample is deleted, it then reverts to either the “stock EPROM” or the “user EPROM” sample stored within the patch. Thus trying to delete an empty user sample will not have any effect to either the underlying stock or packed sample.

To load a custom sample. Click the red mini USB jack on the upper left corner of the device:



This will reveal the “EPROM burner” tool (*okay, so we may have taken it a bit too far, but we just couldn't stop :)*)



You select the sound you wish to substitute by clicking the drum pads. The selected drum pad is highlighted with a soft red tint, and a downwards facing arrow. If the selected drum pad shares the same sound with others, (f.e. in the case of hi-hats, or toms), they will also be highlighted.

Regarded information such as the sound name is displayed at the “EPROM chip” on the top right of the “EPROM burner”.

At the bottom you can see the currently loaded user sample (if any) for that sound, and on the bottom-right, the buttons to edit, delete, select, load and sample, respectively.

At the top left there are 3 LEDs that reflect the status of that sound:

1. V1 PATCH DATA OK: When lit, indicates that there is an ASIC packed sound present in the patch for the selected sound.
2. SAMPLE OK: Indicates that there's a user sample present and loaded correctly to the memory.
3. OUT OF MEMORY: When lit, it indicates that the loaded sample is larger than the available memory, and therefore its truncated.

Beware that, by design, custom samples follow Reason's storage rules. Meaning that they can be either embedded or referenced inside a song, yet only referenced within a patch. In contrast to ASIC packaging keeps the actual sound data inside the patch.

APPENDIX I - MIDI / Remote Implementation Chart

The following is a full list of the available automation parameters, their MIDI Control Codes and their Remote Names

CC	Name	Short Name	Tiny Name
4	Velocity / Accent Sensitivity	VASens	VASn
7	Main Volume	Volume	Vol
67	Accent Mode	AccMode	AcMd
128	BASS: Level	LevelBA	LvBA
129	SNARE: Level	LevelSD	LvSD
130	SIDESTICK: Level	LevelST	LvST
131	HI HAT: Level	LevelHH	LvHH
132	HI TOM: Level	LevelHT	LvHT
133	MID TOM: Level	LevelMT	LvMT
134	LOW TOM: Level	LevelLT	LvLT
135	RIDE: Level	LevelRD	LvRD
136	CRASH: Level	LevelCR	LvCR
137	CABASA: Level	LevelCB	LvCB
138	TAMBURINE: Level	LevelTB	LvTB
139	HI CONGA: Level	LevelHC	LvHC
140	LOW CONGA: Level	LevelLC	LvLC
141	COWBELL: Level	LevelCB	LvCB
142	CLAP: Level	LevelCP	LvCP
143	BASS: Pan	PanBA	PnBA
144	SNARE: Pan	PanSD	PnSD
145	SIDESTICK: Pan	PanST	PnST
146	HI HAT: Pan	PanHH	PnHH

147	HI TOM: Pan	PanHT	PnHT
148	MID TOM: Pan	PanMT	PnMT
149	LOW TOM: Pan	PanLT	PnLT
150	RIDE: Pan	PanRD	PnRD
151	CRASH: Pan	PanCR	PnCR
152	CABASA: Pan	PanCB	PnCB
153	TAMBURINE: Pan	PanTB	PnTB
154	HI CONGA: Pan	PanHC	PnHC
155	LOW CONGA: Pan	PanLC	PnLC
156	COWBELL: Pan	PanCB	PnCB
157	CLAP: Pan	PanCP	PnCP
158	SNARE: Tuning	SNARTune	SDTn
159	HI TOM: Tuning	TMHITune	HTTn
160	MID TOM: Tuning	TMMDTune	MTTn
161	LOW TOM: Tuning	TMLOTune	LTTn
162	HI CONGA: Tuning	CGHITune	HCTn
163	LOW CONGA: Tuning	CGLOTune	LCTn
164	HI HAT: Decay	HHATDcay	HDcy

APPENDIX II: MIDI Drum Map

NOTE (MIDI) SOUND

C1(36) BASS	
	C#1(37) SIDESTK
D1(38) SNARE	
	D#1(39) HANDCLAP
F1(41) LOW TOM	
	F#1(42) CLOSED HH
G1(43) LOW TOM	
	G#1(44) CLOSED HH
A1(45) MID TOM	
	A#1(46) OPEN HH
B1(47) MID TOM	
C2(48) HI TOM	
	C#2(49) CRASH
D2(50) HI TOM	
	D#2(51) RIDE
	F#2(54) TAMBURINE
	G#2(56) COWBELL
	D#3(63) HI CONGA
E3(64) LOW CONGA	
A3(69) CABASSA	

Reverse Lookup

Name	MIDI (Note)
BASS	36 (C1)
CABASSA	69 (A3)
CONGA HI	63 (D#3)
CONGA LOW	64 (E3)
COWBELL	56 (G#2)
CRASH	49 (F#2)
HANDCLAP	39 (D#1)
HH CLOSED	42 (F#1), 44 (G#1)
HH OPEN	46 (A#1)
RIDE	51 (D#2)
SIDESTK	37 (C#1)
SNARE	38 (D#1)
TAMBURINE	54 (F#2)
TOM HI	48 (C2), 50 (D2)
TOM LOW	41 (F1), 43 (G1)
TOM MID	45 (A1), 47 (B1)

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