R93 BIG TIME

DIGITAL DELAY



User Guide

Version 1.0

PULSAR MODULAR

PULSAR™ MODULAR

R93 BIG TIME
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Preface

Long before I knew what was making that sound, I knew I wanted it. Effects I thought I already understood, put together in a way I had never heard. It stopped me every time.

It took me a while to learn whose hands were on that machine. Daniel Lanois. He would trap a sound live, while the take was still happening, and hit the Hold button to freeze a loop out of whatever had just played. Turn the Multiply knob and that loop would jump an octave. None of it was added afterwards in the mix. It happened in the room, as part of the performance.

He was doing it on a Lexicon Prime Time Model 93. He played it like an instrument. Once I knew that, I understood why so many producers and engineers went looking for one of their own after hearing what he did with it.

I decided it was time to bring this machine back in full, and to take it further in a DAW than the hardware could ever go.

The sampler is borrowed from the E-mu SP-1200. I added it because it extends what the delay already does and leaves the delay itself alone. If you know the hardware, the delay side will feel familiar.

R93 Big Time is part of the Revival series: machines I grew up with, rebuilt to work in a DAW rather than copied as museum pieces. Every control can be automated and MIDI-mapped, the delay syncs to tempo in subdivisions, and the workflow is built for a session instead of a rack. Use it for echoes, frozen loops, pitched textures and feedback that keeps changing.

Ziad Sidawi

Audio Equipment Designer, Pulsar Modular

PART I · STARTING

CHAPTER ONE

What R93 Big Time Is

R93 Big Time is a two-tap delay with a small sampler wrapped around its memory.

Taps A and B each have their own time, feedback and tone, and six algorithms set how they feed each other. Every repeat comes back a little darker and rougher than the one before.

The sampler works on audio the delay has already caught. REPEAT HOLD freezes the delay memory into a loop. You can trim it, pitch it, reverse it, and trigger a copy from the TRIG pad while the loop keeps cycling.



The panel at its default settings, with audio passing through it.

1.1 The Signal Path

Your track passes through R93 in this order:

1. **INPUT MIX** sets what goes into the delay, and how much of each tap feeds back.
2. **The delay.** DELAY A and B set the two times. ROLLOFF and LOW CUT shape each tap's repeats. The algorithm decides how the taps feed each other.
3. **OUTPUT MIX** blends the dry signal and the two taps, and sets the final level.

The dry signal never passes through the delay, so R93 adds no latency. Your DAW reports zero, and everything you hear late is the effect.

1.2 Important Expectations

Pitching is deliberately lo-fi. The pitch controls change the playback speed of the captured audio, so pitch and loop length move together, and wide settings sound stepped and grainy. Use them for character, bends and sampled-loop effects, not for transparent correction.

REPEAT HOLD works on one evolving loop. You can capture, trim, mute, pitch, reverse and retrigger that loop while you play, and it keeps changing as it cycles. Use a multitrack looper when you need overdubs that stay separate.

R93 can get loud. High feedback with several output faders up can drive the output past full scale. Watch the OVERLOAD lamp (4.7).

1.3 The Panel at a Glance

Where	What is there	Chapter
Top bar, left	The preset bar, then A/B and its copy arrow	12
Top bar, middle	GAIN 20dB, EMULATION, RAM	3, 4
Top bar, right	S/C, MIDI LEARN and the menu	4, 11, 12
Upper left	POWER, REPEAT HOLD and MUTE	1, 6
The display	DELAY A, DELAY B and LOOP LEN, with the TRIM bar under them	3, 6
Upper right	The algorithm table and its routing chart	3
PITCH	REV, the STROBE disc, the pitch SLIDER, FX, SNAP, the TRIG pad, GAIN and TUNE	7, 8
DELAY	SYNC, DELAY A and DELAY B	3
The VCO	SYNC, the four shapes, DELAY ADJUST, DEPTH and RATE	3, 9
INPUT MIX	IN, AUX, RECIRCULATE A and B, MASTER, and the HEADROOM lamps	4
ROLLOFF	ROLLOFF and LOW CUT for each tap, and DELAY MULTIPLY	3
OUTPUT MIX	PAN A and B, the five faders, and the M keys under A and B	5
Right column	OVERLOAD, PHASE INVERT, DELAY BYPASS, ECHO OUT 3-4	4, 5
Bottom	The help strip	12

1.4 Handling the Controls

Drag a knob or a fader up or down to move it. Hold Shift while you drag a pair, such as RECIRCULATE A and B, to move both together (4.6).

Double-click a control to return it to its default (OUTPUT MIX B is the one exception, 5.1). Point at a control to see its value; click the value to type a new one. You can type units: "250ms", "0.5s", "-6", "inf", "3k", "L30", "1/8".

Click a printed value on the panel, such as 2X on DELAY MULTIPLY or .5X on DELAY ADJUST, to jump there.

The knobs and faders follow your hand with a little weight, like a real control. A preset, an A/B switch or a session load sets them at once.

1.5 POWER

POWER, at the top left, switches the whole machine. Off, your signal passes through untouched and the meters rest. It is the same switch your DAW's bypass drives.

Switching off clears the delay memory, so a held loop does not come back. The TRIG pad keeps its sample. To take only the echoes out, use DELAY BYPASS (5.4).

CHAPTER TWO

Five-Minute Walk

Insert R93 on something playing, and leave everything where it starts. A fresh insert already echoes: tap A at 128 ms on the left, tap B at 256 ms on the right, one repeat each.

R93 has no wet/dry knob: the OUTPUT MIX faders are the balance (5.1). On an aux send, pull OUTPUT MIX IN all the way down, or you hear the dry twice.

Move the delay times. Turn **DELAY A** and **DELAY B**. They step rather than sweep, and the display shows where you landed.

Make it repeat. Push **RECIRCULATE A** up, in INPUT MIX. Near the top of the fader the track turns red: there the repeats stop dying away and start building. Back off until they decay.

Darken it. Pull **ROLLOFF A** down. Each repeat comes back duller than the last. This is the dub move.

Trade brightness for time. Turn **DELAY MULTIPLY** to 2X. Both delay times double, and the repeats get darker and coarser.

Freeze it. Press **REPEAT HOLD**. Whatever was in the delay memory is now a loop. Your live input stops feeding the delay while it is held.

Play the loop. Drag the pitch **SLIDER** on the far left. The loop pitches with it. Drag the handles on the TRIM bar, under the display, and the loop gets shorter.

Trigger it. Click the **TRIG** pad under the slider. The trimmed part plays once, at the slider's pitch, over the cycling loop.

Press REPEAT HOLD again to let live audio back in.

PART II · UNDERSTANDING THE CONTROLS

CHAPTER THREE

Working with Delays

Two taps read the same memory at different distances behind the input. This chapter is about what those taps sound like, and how much of themselves they hear.

3.1 DELAY A and DELAY B



The DELAY section: SYNC, then the A and B knobs.

Each knob sets how far behind the source its tap sits. Under about 20 ms the taps thicken and comb the sound. Past 60 ms or so you hear separate repeats.

The knobs step through 67 positions, so you find the same place twice without looking. With RAM at 256 ms the steps run from 1 ms to 256 ms. At 2048 ms the same steps read eight times longer, 8 ms to 2048 ms. Type a time in the value box and the knob lands on the nearest step.

The steps are not evenly spaced, and 34 of them are prime numbers. With RAM at 256 ms and DELAY MULTIPLY at 1X, PRIME lights on the display when a tap sits on one. Prime

times keep A and B from lining up, so the repeats stay irregular instead of stacking into one pattern.

Starting point: A short, B at about twice A.

3.2 DELAY SYNC

SYNC, above the knobs, switches both delay knobs from milliseconds to your session tempo. On, each knob steps through 19 note values, from 1/64 at the bottom to a dotted whole note at the top.

The display shows the note value times DELAY MULTIPLY. If that is longer than the memory holds, OVR lights beside the field: turn the knob down, lower MULTIPLY or set RAM to 2048 ms. Without SYNC, OVR lights when DELAY ADJUST or the VCO push a tap past the memory. PRIME stays dark in SYNC.



SYNC on for the delay and the VCO. DELAY A and B read note values; both are past the memory, so OVR lights beside them.

3.3 DELAY ADJUST

One knob offsets both taps at once, smoothly, from 1.50X fully counter-clockwise to 0.50X fully clockwise. Clockwise shortens, as on the hardware. The center, (cal) 1X, is the calibrated position, and UNCAL lights on the display whenever you are off it.

Use it rather than the stepped knobs when you want movement. Turning DELAY A jumps between positions. Turning DELAY ADJUST slides the delay, so the repeats bend in pitch as you move, like tape speeding up or slowing down. In SYNC it scales the note value the same way.

The VCO moves DELAY ADJUST, not the stepped knobs (chapter 9).

3.4 DELAY MULTIPLY

Four positions, 1X to 8X. Each step up doubles both delay times and pays for it with a darker, grittier repeat. The BANDWIDTH scale under the knob shows the trade: 12, 6, 3 and 1.5 kHz. At 8X everything that comes back is thick and blurred.

On a held loop each step is an octave down (7.5).

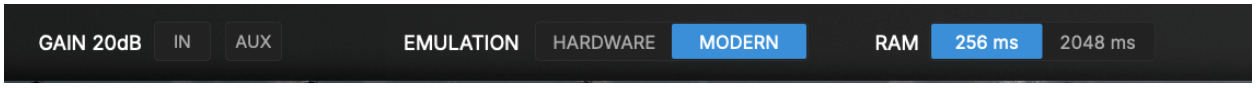
3.5 RAM

RAM, in the top bar, sets how much memory the delay has: 256 ms or 2048 ms. The default is 256 ms.

At 2048 ms every delay step and every loop is eight times longer, with no loss of brightness. Use 256 ms for slaps, doubling and flanging (its shortest step is 1 ms), and 2048 ms for delays in bars and for long frozen loops.

A held loop keeps the length it was captured with. Switching RAM while REPEAT HOLD is on changes nothing until the next capture.

3.6 EMULATION



EMULATION set to MODERN, between GAIN 20dB and RAM in the top bar.

EMULATION, in the top bar, chooses how the echoes are voiced. The dry signal is the same in both.

HARDWARE, the default, gives the repeats the unit's grit and hiss, and a hard ceiling when they get loud. The VCO behaves as on the unit (9.1).

MODERN keeps the repeats clean and open, with a soft top that rounds off loud peaks. Each repeat still darkens as it goes round.

The switch is click-free, so you can change it while the delay plays.

3.7 ROLLOFF and LOW CUT



ROLLOFF for each tap, with its LOW CUT cap, above DELAY MULTIPLY and its BANDWIDTH scale.

Each tap has a horizontal fader with two caps: ROLLOFF A on top, ROLLOFF B below. They filter the tap's repeats only, never the dry.

ROLLOFF, the right cap, sets how bright the repeats stay as they pile up, from 15 kHz at the right end down to 800 Hz. At 15 kHz, the default, it does almost nothing. Pull it left and each repeat loses more top than the last, so the tail falls into the track instead of sitting on it. It is also the fix for a frozen loop that grows harsh as it cycles.

LOW CUT, the left cap, thins the low end of each repeat, from OFF at the left end up to 2 kHz. Use it to keep long tails from muddying the bass. It always stays an octave under its ROLLOFF.

Shift-drag moves A and B together; Shift and Alt (Option on the Mac) moves them in opposite directions. Alt-drag a cap to narrow or widen the band. Cmd-drag (Ctrl on Windows) slides all four caps at once.

3.8 The Algorithms



The algorithm table and its routing chart. The A and B boxes glow with each tap's level.

The six names in the table are six ways of wiring the two taps to each other. Click a name to choose it. The chart beside the table draws the routing, and its A and B boxes glow as the taps sound.

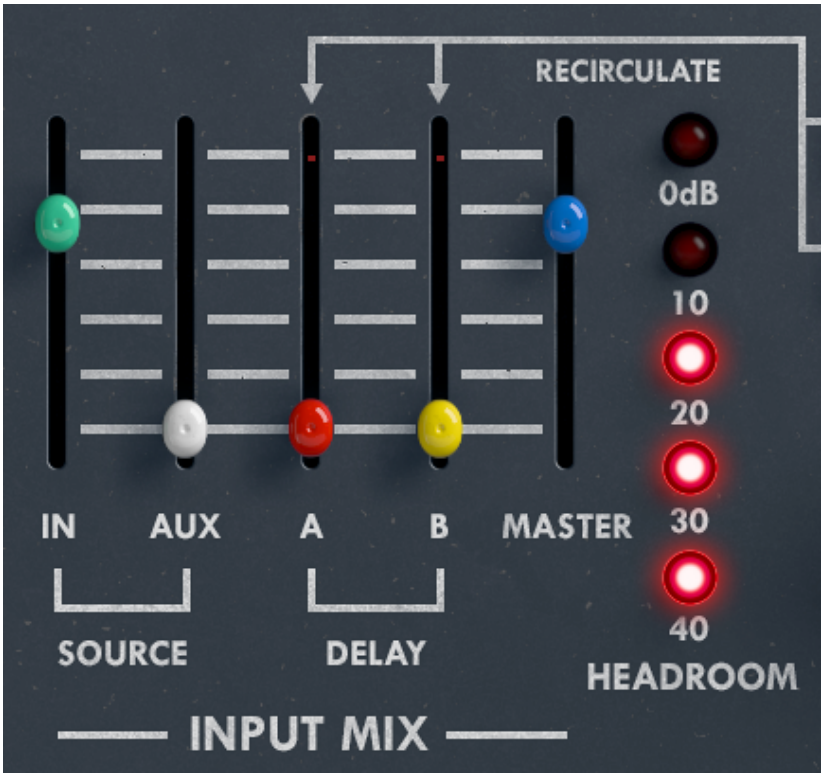
At zero feedback most algorithms sound alike. Push RECIRCULATE up and they separate.

- **CLASSIC** is the hardware routing. Both taps feed back to the delay input together. It will run away at high feedback.
- **REVERB** is like CLASSIC, but it sustains without escalating. Use it for a wash that holds.
- **PARALLEL** keeps the taps apart: A repeats A, B repeats B. Two independent delays in one box.
- **SERIES** feeds A into B, so B echoes A's echoes. Good for staged, cascading repeats.
- **PING-PONG** bounces the repeats from A to B and back. With the taps panned apart it is the classic stereo throw.
- **CRISS-X** crosses the feedback: A feeds B and B feeds A. With different times on A and B, this is where odd rhythms live.

A switch of algorithm is instant, also during REPEAT HOLD, so a click or a sudden change at that moment is expected. The whole table is one control for MIDI Learn.

CHAPTER FOUR

INPUT MIX AND RECIRCULATE



INPUT MIX with audio playing: IN, AUX, RECIRCULATE A and B, MASTER, and the HEADROOM lamps.

The five INPUT MIX faders set what goes into the delay, and how much of the delay goes back into itself.

4.1 IN and AUX

IN sets how much of your track reaches the delay. **AUX** does the same for a second audio input. Both read in dB, with 0 dB at the top of the fader. AUX starts off.

AUX lets the echoes be made of something other than the track R93 sits on. Put R93 on a vocal, feed the snare to AUX, and the vocal's delays come back as snare hits. Pull IN down to build the delay from AUX alone.

4.2 S/C: Feeding AUX

AUX is the sidechain input. Click **S/C** in the top bar to open it, then choose R93 as the sidechain destination in your DAW. The dot on S/C is amber while it is open with no audio arriving, and green when audio arrives.

The DAW lists the input as Sidechain in Live, Side Chain in Logic, Key Input in Pro Tools, and as a second input bus in REAPER and Cubase.

4.3 GAIN 20dB

The two keys in the top bar, IN and AUX, add 20 dB to that input. Use them for quiet sources, such as a low-level synth or a track recorded far below full scale. The lift reaches the dry at the output as well as the delay. Both start off.

4.4 RECIRCULATE A and B

The A and B faders are the feedback amounts, from 0 to 100 %. Both start at 0 %, so each tap repeats once. Low settings give a couple of repeats; high settings give a long tail.

Near the top of each fader the track turns red. Past that point the repeats stop decaying and feed on themselves: a runaway, or the sound you came for. The red zone moves with the algorithm and with the other fader, because the algorithms share feedback between the taps differently. It also moves with INPUT MIX MASTER and DELAY MULTIPLY (4.5). On REVERB it is amber, because that algorithm sustains without escalating.

Treat the zone as a guide. With ROLLOFF and LOW CUT in the path, the runaway can start a little earlier. If the repeats keep getting louder, lower RECIRCULATE or pull ROLLOFF left.

4.5 MASTER

MASTER sets the level of everything going into the delay, from −16 dB to +15.5 dB. It never closes. It also scales the recirculation: raise it and the repeats last longer, and the red zone on RECIRCULATE comes down. A higher DELAY MULTIPLY does the same. The HEADROOM lamps read what MASTER sends.

4.6 Moving Faders in Pairs

- **Shift-drag** RECIRCULATE A or B to move both together. Shift and Alt (Option on the Mac) moves them in opposite directions.

- **Alt-drag** (Option on the Mac) IN, AUX, A or B to trade the source against the delay: IN and AUX move one way, A and B the other.

The same gestures work in OUTPUT MIX (5.1).

4.7 HEADROOM and OVERLOAD



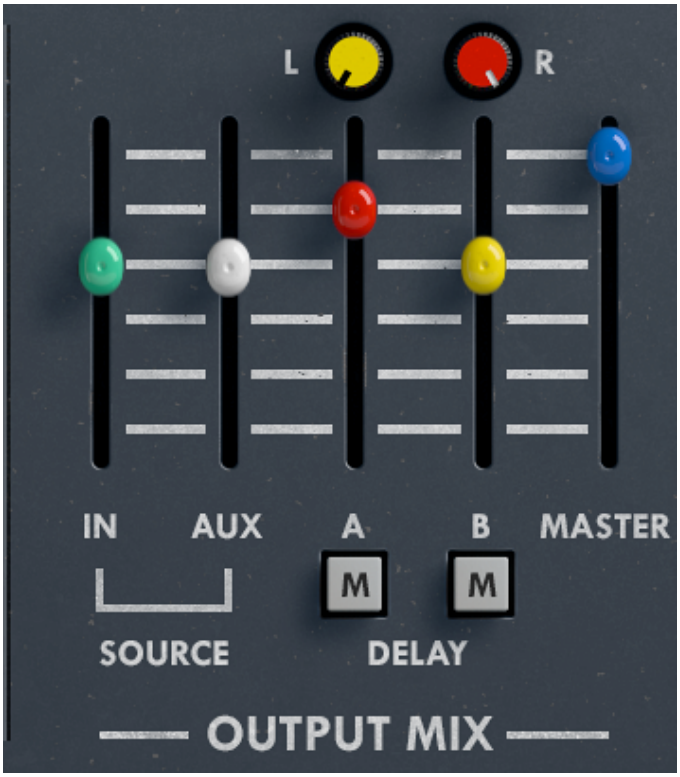
OVERLOAD lit red by a hot input, above PHASE INVERT, DELAY BYPASS and ECHO OUT 3-4.

HEADROOM is the column of five lamps beside INPUT MIX, marked 0dB, 10, 20, 30 and 40. It shows how close the delay input is to its limit, filling from the bottom. The top lamp holds after a clip. If it lights, lower INPUT MIX MASTER.

OVERLOAD, at the top of the right column, watches the summed output. Amber means it is close to its limit; red means it is at or past it. It reads before OUTPUT MIX MASTER, so pulling MASTER down does not clear it: lower A, B, IN or AUX instead. Chapter 14 puts the two together.

CHAPTER FIVE

OUTPUT MIX, PHASE AND BYPASS



OUTPUT MIX: PAN A and B above the faders, and the M keys under A and B.

5.1 The Output Faders

There is no wet/dry knob on R93. The OUTPUT MIX faders set the balance. **IN** and **AUX** carry your dry signal out, **A** and **B** carry the two taps, and **MASTER** sets the final level.

These are different faders from the ones of the same names in INPUT MIX. Those decide what goes into the delay. These decide what leaves R93.

Fader	Default
IN, AUX	0 dB, the dry at its own level
A	−5.3 dB
B	−11.4 dB
MASTER	at the top

Double-click A or B to set that fader to −5.3 dB. Shift-drag and Alt-drag work as in INPUT MIX (4.6).

On an insert, leave IN where it starts and set the echo level with A and B. **On an aux send** or a return track, pull IN and AUX all the way down, so only the taps leave, and set the amount with the send.

5.2 M: Muting a Tap

The **M** keys under A and B gate a tap at the output. This is the fader-pull move from the hardware: drop a tap out for a bar, bring it back. The tap keeps running while muted, and a held loop is untouched, so it returns at its current point in the cycle.

Shift-click either M to set both.

5.3 PAN A and PAN B

The two small knobs above A and B place each tap in the stereo field, from L100 to R100. They start hard left and hard right, so the taps are already split. Double-click returns them there. Shift-drag moves both together; Shift and Alt moves them in opposite directions.

PING-PONG and CRISS-X need the taps apart to be heard as movement. On a mono track the PAN knobs grey out.

5.4 DELAY BYPASS

The DELAY BYPASS lever, in the right column, takes the delay out of the output. While it is on you hear your input as INPUT MIX IN, AUX and MASTER set it; the OUTPUT MIX faders, PAN, the M keys and PHASE INVERT do not act on it. What comes back when you switch it off is a setting, in the menu under **Delay Bypass**:

- **Clear Buffer**, the hardware behavior, and the setting on a fresh install. R93 remembers your last choice for new inserts. The repeats drain away while you are out, so switching back gives a clean start.
- **Keep Running**. The delay keeps cycling inside while you are out, unheard. Switching back drops you into whatever it has become. Use it to cut the delay for four bars and bring it back changed.

The setting belongs to the insert and is saved with the session. The lever, the footswitch, a MIDI note and automation all follow it. The pad is silent while the delay is bypassed. Point at the lever and the help strip says which setting is in use.

5.5 PHASE INVERT

Three levers: IN, DLY A and DLY B.

IN flips the dry signal at the output. Use it when dry and echoes fight at short delay times and the low end goes thin.

DLY A and **DLY B** flip their tap at the output and in its repeats. That is why they matter at short times and high feedback: they change how the repeats interfere with each other. Short times, high RECIRCULATE and one tap flipped give a comb filter you tune by ear.

The levers switch without a click.

5.6 ECHO OUT 3-4

ECHO OUT 3-4, at the bottom of the right column, sends the echoes to their own outputs.

- **Off** (Combined, the default): everything leaves on outputs 1-2.
- **On** (Separate): the two taps and the pad leave on outputs 3-4. The dry and AUX stay on 1-2.

Use it to process or record the echoes on their own track: in your DAW, route R93's second output pair to a track. If the host offers no second pair, the lever greys out. ECHO OUT is not stored in presets, because it follows your track's routing.

CHAPTER SIX

Capturing and Shaping Loops



REPEAT HOLD on. Its lamp is lit, the display marks REPEAT HOLD, and the TRIM bar draws the held loop.

6.1 REPEAT HOLD

REPEAT HOLD freezes whatever is in the delay memory and loops it.

The delay is always writing, so recent audio is always ready to catch. Press REPEAT HOLD when you hear a moment worth keeping. The loop is as long as the memory: up to 256 ms or 2048 ms, depending on RAM, times DELAY MULTIPLY.

While it is held, your live input no longer reaches the delay. It still reaches the output through OUTPUT MIX IN and AUX, so you can play over the loop.

Everything else keeps working on the loop. The feedback recirculates, ROLLOFF and LOW CUT keep filtering, the VCO keeps moving and the taps keep reading at their own times. A frozen loop drifts and wears the longer you leave it.

Press again to release. By default the loop plays out: live audio writes over it, so the old loop fades away as it is overwritten. To stop it at once instead, right-click REPEAT HOLD and choose **Cut on Release**.

The right-click menu also holds Grid Lock (11.1).

6.2 MUTE

MUTE, the crossed-speaker key beside REPEAT HOLD, takes the echoes out so you can set up the next loop where nobody hears it.

During REPEAT HOLD, MUTE silences the delay, the held loop and the repeats alike. You hear the dry and nothing else. Underneath, the delay records again, so what you play while muted is written over the loop. Un-mute and the new material is the loop, with your trim, pitch, reverse, feedback and algorithm as you left them.

What you play while muted replaces the old loop. If the old one was precious, save it first (chapter 10); the pad keeps its copy through a mute. To drop a loop out and get the **same** loop back, use the M keys in OUTPUT MIX instead (5.2).

With REPEAT HOLD off, MUTE silences the echoes at once. The pad is never muted. Right-click MUTE for Grid Lock: on a tempo-locked session it makes both presses land on the beat.

6.3 Swapping the Loop Without Stopping

1. Get a loop cycling with REPEAT HOLD.
2. Press MUTE on a beat. The echoes go quiet.
3. Play the next phrase. You hear yourself dry.
4. Press MUTE again on a beat. The new phrase is cycling.

Play right up to the un-mute: the loop you get is the material recorded in the window that ends there. LOOP LEN on the display tells you that window's length before you start.

6.4 The TRIM Bar



The TRIM bar with both handles moved in. LOOP LEN reads the trimmed length.

The bar under the display is the captured buffer. It draws the waveform. With REPEAT HOLD on it shows the held loop; with REPEAT HOLD off, the pad's sample.

Drag the two handles to choose which part plays. Everything between them loops; the rest stays in memory, silent. A four-bar capture becomes a one-beat stutter without recapturing.

The handles snap to the nearest zero crossing when you let go, so a tight loop does not click at the join. The start always stays before the end. The handles are anchored to the audio: change DELAY MULTIPLY and the window plays slower or faster, but it holds the same sound.

Right-click a handle for Grid Lock, which snaps it to the session grid instead.

Shift-drag the bar to pull the trimmed part into your DAW as a WAV: drop it on a track.

6.5 LOOP LEN

The third field of the display shows how long the trimmed window plays, with DELAY MULTIPLY taken into account. With REPEAT HOLD off it shows what you would get if you froze now, so set it before you capture: change DELAY MULTIPLY and RAM until LOOP LEN reads close to the length you want, then play and press.

6.6 Trimming with REPEAT HOLD Off

With REPEAT HOLD off the handles still move. The bar shows the pad's sample, and the pad plays what the handles bracket, so this is where you trim the pad. The positions apply to the next capture too.

The dots icon at the corner of the bar, and a right-click on the bar, open the loop menu (chapter 10).

CHAPTER SEVEN

Pitching the Loop



The PITCH section with the SLIDER raised and REV on.

These controls act on the held loop and on the TRIG pad. With REPEAT HOLD off and the pad silent they move, but there is nothing to hear. Their positions are kept.

Pitch and loop length move together, and wide settings sound grainy (1.2).

7.1 The SLIDER

The main pitch control, an octave either way: +12 to −12 semitones. Up speeds the loop and lifts it; down slows it and drops it.

How it moves between pitches depends on SNAP (7.2). In continuous mode it glides, over about 150 ms, like a tape machine coming up to speed. The mod wheel stretches the glide up to 2 seconds; each play and bounce starts again from 150 ms.

7.2 SNAP

The SNAP lever chooses how the pitch moves.

- **Ramp** (lever to the right, the default): continuous. The pitch sweeps through every value and glides from one to the next. Use it for dives and rises.
- **Staircase** (lever to the left): semitones. The pitch locks to whole semitones and steps straight to each one, with no glide. This is how the SP-1200 pitches, and the mode to use when you play the loop from a keyboard. It holds whatever moves the pitch: the slider, MIDI keys, automation or a preset.

7.3 TUNE

TUNE, the small knob at the bottom right of PITCH, is fine pitch, up to 100 cents either way. Use it to make a capture sit against the session when it is close but not right. Double-click returns it to 0.

7.4 The STROBE

The STROBE disc, at the top of PITCH, is a tuning aid. It stands still when the pitch is an exact number of semitones from the capture. It turns clockwise when sharp and counter-clockwise when flat. Nudge TUNE until it stops.

If it drifts when you expect it to stand, check that TUNE is at 0 and DELAY ADJUST is at (cal) 1X.

7.5 DELAY MULTIPLY as an Octave Switch

On a held loop, DELAY MULTIPLY only goes down. Each step drops the loop another octave and stretches it to match: 2X is an octave below the capture, 4X two, 8X three. The number goes up, the pitch goes down. It also darkens and coarsens the sound.

Watch what you feed it. A bass is already near the bottom, so 2X can take it under your monitors and 4X out of hearing. If the loop seems to vanish, it has gone too low, not been cleared.

For pitches above the capture, or for steps smaller than an octave, use the SLIDER. Stack the two: DELAY MULTIPLY for the octaves, the SLIDER for the interval.

7.6 REV

REV plays the held loop and the pad backwards. A struck chord arrives as a swell into its own attack, and a vocal tail becomes a rise. You can flip it while a shot plays: the shot turns round at once, without a click.

7.7 Which Control to Reach For

- **DELAY ADJUST** bends both delay times and pitches the repeats as a side effect, with or without REPEAT HOLD. Reach for it for tape-style bends on a live delay.
- **The SLIDER** pitches the held loop and the pad, gliding or in semitones. Reach for it to play the loop.
- **TUNE** fine-tunes the held loop and the pad. Reach for it to tune the loop to the track.

CHAPTER EIGHT

The TRIG Pad

The pad keeps the trimmed slice of your capture, so you can trigger it as a one-shot while everything else keeps running.

8.1 What the Pad Plays

When you press REPEAT HOLD, the capture is copied into the pad, and the TRIM handles decide which part of it plays. Move them and the pad triggers the new window. Loading a loop from disk fills the pad too (10.2).

The pad keeps its copy when you release REPEAT HOLD, so you can trigger the last capture over a completely different delay. The next REPEAT HOLD press replaces it, unless nothing was playing: a capture of silence leaves the pad as it was.

8.2 The Pad's States

Pad	Meaning
Outline only	EMPTY. Nothing captured yet. Press REPEAT HOLD once, or load a loop.
Filled	LOADED. A click triggers it.
Pulsing	ARMED. Grid Lock holds your press until the next grid line.
Bright	PLAYING. The shot is sounding.

8.3 Triggering It

Click the pad, send it a MIDI note or a CC button, assign it to the footswitch, or automate it.

A mouse click triggers on the press, and its automation lane stays at TRIG while you hold the button, so a DAW recording automation writes a pulse that plays back as the same shot. A drawn automation curve triggers each time it rises past the middle of the lane.

A MIDI note, a CC button or the footswitch triggers at the exact moment it arrives and writes no automation. The MIDI in your clip is the record (11.2).

Each trigger plays the trimmed window once, at the pitch the controls give at that instant. Triggering again cuts the previous shot and restarts it, so fast hits become a stutter.

8.4 LAYER and SOLO

Right-click the pad to choose.

LAYER, the default, plays the pad over the cycling loop. Hold a drone, trigger stabs over it.

SOLO mutes the delay taps while the pad sounds, then lets them back. The pad replaces the loop instead of sitting on it. REPEAT HOLD does not change state.

The same menu holds Grid Lock and Grid Subdivision (11.1).

8.5 GAIN and FX

GAIN, the small knob beside the pad, sets the level of the pad alone, from −12 dB to +12 dB. The held loop and the live delay stay where they are. Double-click returns it to 0 dB.

FX, the lever above SNAP, sends each shot into the delay as well, so it gets repeats and recirculation like live audio. GAIN sets both. While REPEAT HOLD is on, the shot does not write into the held loop. FX starts off.

8.6 What Gets Saved

The pad's audio is not stored in presets or in the session. Save any loop you want to keep (chapter 10).

CHAPTER NINE

The VCO



The VCO: SYNC, the four shapes, DELAY ADJUST, and DEPTH inside RATE.

The VCO adds repeating movement to the echoes, from a gentle chorus to a deep pitch wobble. It moves the delay time, and the pitch of the repeats bends with it.

9.1 DEPTH

DEPTH is the inner knob of the double knob. It sets how far the VCO moves the delay, from 0 to 100 %. At 0, the default, the VCO runs but does nothing.

The knob spends half its travel under 10 %, where chorus and gentle movement live: about 10 % at twelve o'clock. The top half is for deep wobble.

What DEPTH moves depends on EMULATION (3.6):

- **HARDWARE**: as on the unit. The repeats bend upward in pitch, and the more DEPTH, the less DELAY ADJUST acts. At full DEPTH, DELAY ADJUST does nothing.

- **MODERN**: the VCO swings DELAY ADJUST around where you set it, both ways. The repeats never play backwards, and the edges of Square and Ramp are rounded so they do not click.

9.2 RATE

RATE is the outer ring. It sets the speed, from 0.1 Hz to 256 Hz; the default is 1 Hz. Above about 50 Hz the effect turns metallic, like a ring modulator, rather than a wobble. The unit stopped at 20 Hz; everything above is R93's addition.

9.3 The Four Shapes

The column left of DELAY ADJUST picks the waveform. Triangle is the default.

Shape	Sound
Ramp	Glides one way, then snaps back. On a delay, the tape-echo sag.
Triangle	A steady, even sweep. The hardware shape and the neutral choice.
Square	Jumps between two delay times: two alternating pitches. Keep DEPTH low.
Sine	The roundest sweep. Gentle chorus.

9.4 VCO SYNC

SYNC, above the shapes, locks RATE to your session tempo, with the same 19 note values as the delay. It also locks the phase to the transport, so the movement lands with the bar. Switching it on during playback jumps the phase once to line up.

9.5 Where to Start

- Very short delays, any shape: flanging. Set RAM to 256 ms for the shortest times.
- Delays around 15 to 30 ms, slow RATE, moderate DEPTH: chorus.
- Fast RATE, shallow DEPTH: vibrato.
- Slow RATE, deep DEPTH: long pitch glides through the repeats.
- Any of these during REPEAT HOLD: the frozen loop moves too.

PART III · WORKING WITH R93

CHAPTER TEN

Saving and Loading Loops

Open the loop menu with the dots icon at the corner of the TRIM bar, or right-click the bar. It holds Save Loop, Load Loop and Recent Loops. Loops live in their own Loops folder, beside the Presets folder; **Open Loop Folder** in the gear menu opens it (12.6).

10.1 Save Loop

Save Loop writes the whole capture to a WAV file, not only the trimmed part, so you can re-trim it when it comes back. It is greyed until the pad holds audio.

The file also carries the settings that shaped the capture: the trim points, DELAY MULTIPLY, RAM, DELAY ADJUST, the algorithm, both RECIRCULATE amounts, both ROLLOFF and LOW CUT settings, and the VCO. Your mix stays out of it: pitch, phase, pan and the output faders belong to the session you are in.

The file is an ordinary WAV that any application opens. When R93 loads a file it saved, the loop comes back exactly as it was, trim included, however often you save and reload it.

To move only the trimmed part into your DAW, Shift-drag the TRIM bar (6.4).

10.2 Load Loop

Load Loop takes any WAV.

- A file R93 saved restores the capture settings listed above and leaves your mix alone.
- Any other WAV loads its audio and leaves your settings as they are. R93 asks how to fit it: one row per DELAY MULTIPLY step, each marked as fitting, darker or cut short. A longer step fits more of the file and darkens it.
- A loud, bright file is lowered just enough not to clip; the message says by how much. A file that fits loads untouched, and files R93 saved are never lowered.
- A short file gets its trim set tight around the audio, so the pad plays the sample, not a tail of silence.

The pad is ready to trigger as soon as the file loads. With REPEAT HOLD on, the file replaces the cycling loop at once, and you hear the swap. With REPEAT HOLD off, it waits in the pad and enters the delay at your next REPEAT HOLD press.

10.3 Recent Loops

The last eight files you used, newest first. A file that was moved or renamed is greyed.

CHAPTER ELEVEN

Tempo, MIDI and the Footswitch

11.1 Grid Lock

Grid Lock puts a gesture on the session grid instead of triggering it the moment you click. It is off by default and set per control: right-click REPEAT HOLD, MUTE, a TRIM handle or the pad.

For REPEAT HOLD, MUTE and the pad, your press waits for the next grid line, and the control shows that it is waiting. The action lands exactly on the line, at any buffer size, live or in a bounce. A capture starts on the beat, not where your hand landed.

For the TRIM handles, nothing waits: the handle snaps to the nearest grid line as you drag, so a trimmed loop is a musical length.

One Grid Subdivision applies to every grid-locked control; the default is 1/16. Set it from the same right-click menu on any of them. With the transport stopped there is no grid, and REPEAT HOLD, MUTE and the pad act at once.

DELAY SYNC and VCO SYNC follow the session tempo too (3.2, 9.4).

11.2 MIDI Learn

Click **MIDI LEARN** in the top bar to arm it, click the control you want, then send a CC or a note. To remove a mapping, right-click the control and choose MIDI Forget.

Knobs and faders take a CC. REPEAT HOLD, MUTE, DELAY BYPASS, S/C, REV and the pad take a note: each Note On toggles the switch or triggers the pad. The pad also takes a CC button, which triggers on each press.

The pitch SLIDER takes 25 notes, an octave either side of a center note, so you can play the loop from a keyboard. In Learn, click the slider and play the note you want as the center. Set SNAP to semitones (7.2) so each key lands at once. A note can map to one control only; R93 refuses a note already taken and says which control has it.

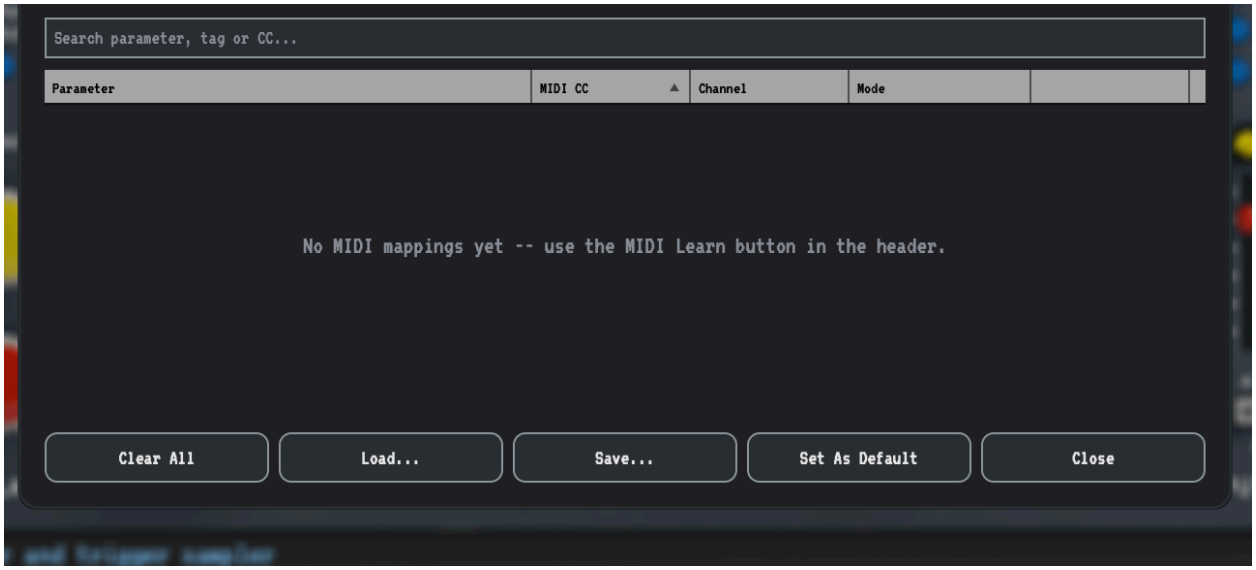
MIDI is the record. Notes, CC buttons and the footswitch act at the exact moment they arrive and write no automation. Record the MIDI and playback does exactly what you heard, with nothing doubled. The panel shows each switch as it sounds, and the session stores it that way.

The **mod wheel** always sets the pitch glide time (7.1). It cannot be learned to anything else.

11.3 Managing Mappings

The map is saved on the computer, not in the preset or the session, so a session moved to another computer does not bring it. The menu's **MIDI** page holds:

- **Manage MIDI Mappings**: the list of mappings, to clear one by one or all at once.
- **Load** and **Save**: keep maps as files, for different controllers.
- **Set Current MIDI Mappings As Default** and **Clear Default MIDI Mappings**: the map a new insert starts with.



The MIDI mappings panel, empty on a new computer.

MIDI Channel, in the menu, sets the channel this insert listens to. The default is All.

11.4 The Footswitch

One pedal drives one control: REPEAT HOLD (the default), MUTE, DELAY BYPASS or the pad. Choose it in the menu under **Footswitch**.

Run **Detect Footswitch** once and press the pedal when asked. R93 learns its CC and whether it is momentary or latching. Run it again when you change pedals. The setting is saved on the computer, like the MIDI map.

Several inserts on the same MIDI channel all respond to the pedal. Give them different channels to keep them apart.

CHAPTER TWELVE

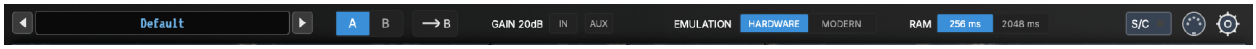
Presets, Sessions and the Menu

12.1 The A/B Slots

The A/B keys in the top bar hold two settings to compare. The lit letter is the one you hear. The slot you leave keeps its settings. The arrow beside them copies the slot you hear over the other.

A switch between slots never moves POWER. Loading a preset fills both slots with the same sound.

12.2 The Preset Bar and the Browser



The top bar: the preset bar, A/B and its copy arrow, GAIN 20dB, EMULATION, RAM, S/C, MIDI LEARN and the menu.

The preset name sits at the left of the top bar, between two arrows. The arrows step through the whole bank, folder by folder. A dot by the name means a control has moved since the last load or save. A preset whose file was deleted outside R93 shows its name dimmed, in italic, with "(deleted)".

Click the name to open the browser.



The preset browser. Folders at the left, presets at the right, and the description line under them.

- Click a preset to load it. Double-click to load it and close the browser.
- Click a preset's star to make it a favorite.
- Type in the search box to search names, folders, descriptions and tags. Start a word with # to search tags only.
- TAGS adds or removes tags on the selected preset.
- Drag a preset onto a folder to move it. Right-click a preset or a folder for more actions, such as editing the description and tags, and showing the file in Finder or Explorer.

The buttons are NEW FOLDER, SAVE, SAVE AS, RENAME, DELETE and CLOSE. SAVE overwrites the loaded preset; SAVE AS names a new one; DELETE moves it to the Trash.

12.3 What a Preset Stores

A preset stores every control on the panel, POWER included, with the Grid Lock settings, the Grid Subdivision, the trim positions and the pad's LAYER or SOLO.

It never stores REPEAT HOLD or MUTE, which always load off, ECHO OUT 3-4, which follows your track, or any captured audio. Your MIDI map, MIDI channel, footswitch and Delay Bypass mode are not in presets either: a preset carries the sound, not your rig.

12.4 The Factory Presets

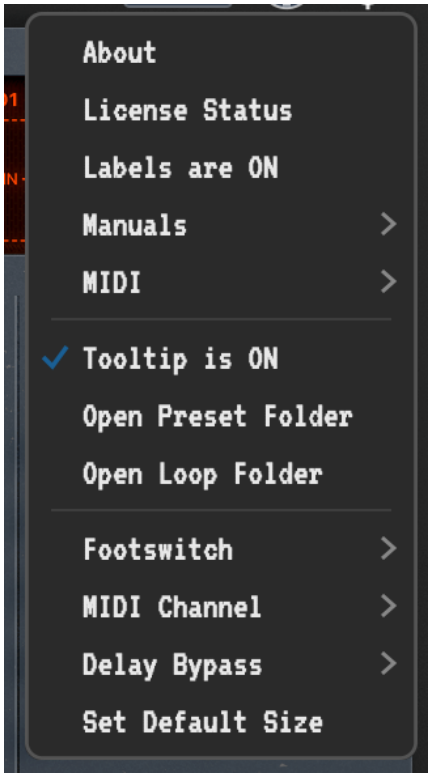
The 52 factory presets sit in the Factory folder, in eleven numbered folders: Foundations, Algorithms, Rhythmic Sync, Tail Shaping, Modulation, Lo-Fi and Hardware, Ambient, Self-Oscillation, Looper, By Source, and Guide Recipes. Guide Recipes holds the six recipes of chapter 13, under their numbers. The Looper presets, marked "Capture Required", need a REPEAT HOLD capture before they make a sound.

The preset named Default loads on every new insert. To change it, set R93 as you want it, right-click in the browser and choose "Save these settings as the startup default". An update with Presets selected replaces it with the factory Default (15.2).

12.5 What the Session Saves

The session saves every control, the window size, the loaded preset's name, the MIDI Channel and the Delay Bypass mode. It does not save captured audio: use Save Loop (chapter 10). REPEAT HOLD and MUTE come back off.

12.6 The Menu



The menu, opened from the gear at the right end of the top bar.

The gear opens the menu. Everything in it is setup, not sound. Point at a row and the help strip explains it.

- **About**: version and license.
- **License Status**: the license window (15.3).
- **Labels**: the value boxes on the controls, on or off. Hold Shift to see them while they are off.
- **Manuals**: the Quick Guides on the web, and this guide in English, German or Japanese, Dark or Print.
- **MIDI**: the mappings (11.3).
- **Tooltip**: the help strip, on or off, for every open insert at once.
- **Open Preset Folder** and **Open Loop Folder**.
- **Footswitch** (11.4), **MIDI Channel** (11.3) and **Delay Bypass** (5.4).
- **Set Default Size**: new inserts open at the current window size.

12.7 The Help Strip



The help strip, showing the line for REPEAT HOLD.

The strip along the bottom of the window gives one line about whatever your mouse is over: its name, its value or the state it is in now, and what that does to the sound. Flip a switch and the line changes with it. It updates live while you drag, and it explains the menu rows too, down to each Grid Subdivision. A line that ends in "R-click for options." means a right-click on that control opens a menu. It is the fastest way to learn the panel.

The help strip leaves out the key shortcuts. This guide has them with each control, for example 1.4, 4.6 and 12.8.

12.8 Hover Audition

Hold Cmd and Option (Ctrl and Alt on Windows) and point at a control: it drops to its neutral setting while you hold the keys, so you hear the mix **without** it. Point at OUTPUT MIX A and tap A falls out; point at PAN B and tap B returns to center.

Every control you point at joins in until you let go of the keys. It works on the faders, PAN, DELAY ADJUST, TUNE, the SLIDER, DEPTH, RATE, ROLLOFF and LOW CUT. The controls never move, and your settings are back the moment you let go.

12.9 Window Size

Drag the corner to resize. The aspect ratio is locked. The window shrinks to half its default size and grows to twice it, or to 90 % of the display on a smaller screen. On Linux, see 18.3.

PART IV · IN PRACTICE

CHAPTER THIRTEEN

Recipes

Each recipe is also a factory preset, in the Guide Recipes folder, under its number.

13.1 Dub Delay That Falls Apart

CLASSIC, DELAY SYNC on, DELAY A around 1/8, RECIRCULATE A high but below the red, ROLLOFF A pulled well left. Ride RECIRCULATE A up on the last beat of a phrase and pull it back. Each pass is darker and dirtier than the last: the sound does the work, not a filter sweep.

Not thick enough? DELAY MULTIPLY to 2X.

13.2 Stereo Throw

PING-PONG, with PAN A and B where they start, hard left and hard right. With RAM at 256 ms and DELAY MULTIPLY at 1X, set the two delay times to different prime steps (PRIME lights). Start with RECIRCULATE low. The repeat bounces across the image, and the prime times keep it from settling into a pattern.

13.3 Frozen Chord, Played

Play a chord and press REPEAT HOLD. Drag the TRIM handles in until the loop comes round without a bump at the join; the zero-crossing snap does most of that. Set SNAP to semitones and play the SLIDER: the chord is now an instrument.

Step DELAY MULTIPLY from 1X to 2X to drop the chord an octave and put it under the track.

13.4 Stutter

Capture, then trim hard to a short window, with Grid Lock on the TRIM handles so the window is a musical length. Set the pad to SOLO and trigger it in a fast series. Each trigger cuts the last, and the cycling loop stays muted underneath.

13.5 Let It Cook

Set the menu's **Delay Bypass** to **Keep Running** first. Play something worth keeping and press REPEAT HOLD. Switch DELAY BYPASS on. Play four bars of something else with the delay silent. Switch DELAY BYPASS off. The loop has been running the whole time and comes back changed, more so if the VCO was moving.

13.6 Flanger

RAM at 256 ms. Both delay times very short, RECIRCULATE moderate, DEPTH up, RATE slow, Triangle. Flip PHASE INVERT DLY A for a hollower version.

CHAPTER FOURTEEN

Gain Staging

HEADROOM watches what goes into the delay; OVERLOAD watches what leaves R93 (4.7). What happens past the limit depends on EMULATION (3.6): HARDWARE stops hard at its ceiling, like the unit, and MODERN rounds loud peaks into a soft top. Several faders high plus heavy RECIRCULATE gets you there in either mode.

The practical order:

1. Set INPUT MIX MASTER so the HEADROOM lamps stay below the top on peaks. For a quiet source, use GAIN 20dB first (4.3).
2. Balance the dry and the echoes with the OUTPUT MIX faders until OVERLOAD stays dark.
3. Use OUTPUT MIX MASTER last, for the level leaving R93.

PART V · REFERENCE

CHAPTER FIFTEEN

Installation and the First Insert

Install the format your DAW uses. R93 is the same in each. On iPad and iPhone, R93 Big Time comes from the App Store (chapter 17). On Linux, see 18.1.

Format	Platform	Installed at
VST3	macOS	/Library/Audio/Plug-Ins/VST3/Pulsar Modular/R93 Big Time.vst3
VST3	Windows	C:\Program Files\Common Files\VST3\Pulsar Modular\R93 Big Time.vst3
AU	macOS	/Library/Audio/Plug-Ins/Components/R93 Big Time.component
AAX	macOS	/Library/Application Support/Avid/Audio/Plug-Ins/Pulsar Modular/R93 Big Time.aaxplugin
AAX	Windows	C:\Program Files\Common Files\Avid\Audio\Plug-Ins\Pulsar Modular\R93 Big Time.aaxplugin
VST3	Linux	~/.vst3/R93 Big Time.vst3
LV2	Linux	/usr/lib/lv2/R93 Big Time.lv2 (.deb) or ~/.lv2/R93 Big Time.lv2 (.tar.gz)

All formats are 64-bit. The installer offers the formats, the presets and the user guides as separate items.

15.1 Where Presets, Loops and Guides Live

Platform	Folder
macOS	/Users/Shared/Pulsar Modular/R93 Big Time, with Presets, Loops, User Guides and Licenses inside
Windows	C:\Users\Public\Documents\Pulsar Modular\R93 Big Time, with Presets, Loops, User Guides and Licenses inside
Linux	~/.local/share/Pulsar Modular/R93 Big Time, with Presets, Loops and User Guides inside, for each user account

Each preset is one .R93Preset file. Preset files travel between macOS, Windows and Linux, and to iPad and iPhone through IMPORT (17.3). To back up, copy the folder.

15.2 What a Fresh Insert Gives You

A new insert loads the Default preset (12.4). With the Presets item selected, an update replaces the factory presets with fresh copies, your Default included, so new inserts also open at the default size again. Presets you saved under your own names are never touched. To keep your Default or a change to a factory preset, save it under a name of your own before you update. Afterwards, load your copy, choose "Save these settings as the startup default" and set the size again with Set Default Size (12.6). Or leave Presets unselected when you update.

15.3 License

Without an activated license, R93 plays a soft noise instead of your audio, and the license window opens by itself. You can also open it from the menu, License Status:

1. Paste your license key.
2. Click Activate.

Your audio returns at once, with no restart.

Button	Does
Activate	Activates this computer with the key.
Deactivate	Frees this computer's seat.
Refresh	Checks the license now.
Account	Opens your account page on the web, where you manage your computers.

The license renews online by itself. If it cannot reach the server, R93 keeps playing until the date in the line across the top of the panel: "CHECK OVERDUE - plays until ...". Connect to the internet and click Refresh. "COMPUTER CHANGED" means the computer has changed and the license is being renewed for it (R93 keeps playing), and "LICENSE NOT ACTIVE" means the server refused it. A click on the line opens the license window. On iPad and iPhone there is no license to activate (chapter 17). On Linux, see 18.1.

15.4 Uninstalling

To keep your presets and loops, copy the R93 Big Time folder first. Then delete:

- the plug-in files in the first table (on Linux, uninstall as in 18.1 instead);
- the R93 Big Time folder in /Users/Shared/Pulsar Modular or C:\Users\Public\Documents\Pulsar Modular;
- the settings (help strip switch, footswitch, recent loops): on macOS in your user Library under Application Support/Pulsar Modular/R93 Big Time; on Windows in your user application data under Pulsar Modular\R93 Big Time;
- the MIDI map, in Pulsar Modular MIDI/R93 Big Time beside it. Copy it first to keep your mappings.

If you are leaving the computer for good, deactivate the license first. On iPad and iPhone, touch and hold the R93 Big Time icon, tap Remove App, then Delete App. The presets stored in the app go with it: export the ones you want to keep first (17.3).

15.5 Specifications

Formats	VST3, AU, AAX; VST3 and LV2 on Linux (18); AUv3 and a standalone app on iPad and iPhone (17)
Channels	mono or stereo, plus a sidechain input (AUX) and an optional second stereo output (ECHO OUT 3-4)
Delay time	1 ms to 256 ms in 67 steps; 8 ms to 2048 ms with RAM at 2048 ms; up to 8 times longer with DELAY MULTIPLY
Latency, tail	no latency; a tail of 8 seconds, as reported to the host
MIDI	MIDI in (MIDI Learn, notes, footswitch); no MIDI out

15.6 Controls: Ranges and Defaults

Control	Range	Default
DELAY A, DELAY B	67 steps, or 19 note values with SYNC	128 ms, 256 ms
DELAY SYNC, VCO SYNC	on or off	off
DELAY ADJUST	1.50X to 0.50X	1.00X
DELAY MULTIPLY	1X, 2X, 4X, 8X	1X
RAM	256 ms, 2048 ms	256 ms
EMULATION	HARDWARE, MODERN	HARDWARE
Algorithm	CLASSIC, REVERB, PARALLEL, SERIES, PING-PONG, CRISS-X	CLASSIC
GAIN 20dB IN, AUX	0 dB or +20 dB	0 dB
INPUT MIX IN, AUX	off to 0 dB	IN −14.7 dB, AUX off
RECIRCULATE A, B	0 to 100 %	0 %
INPUT MIX MASTER	−16 dB to +15.5 dB	+8.9 dB
ROLLOFF A, B	800 Hz to 15 kHz	15 kHz
LOW CUT A, B	off to 2 kHz	off
OUTPUT MIX IN, AUX	off to +14.8 dB	0 dB
OUTPUT MIX A, B	off to +0.7 dB	−5.3 dB, −11.4 dB
OUTPUT MIX MASTER	off to 0 dB	0 dB
PAN A, B	L100 to R100	L100, R100
M (A, B)	on or off	off
PHASE INVERT IN, DLY A, DLY B	on or off	off
DELAY BYPASS	on or off	off

Control	Range	Default
ECHO OUT 3-4	off (Combined), on (Separate)	off
DEPTH	0 to 100 %	0 %
RATE	0.1 Hz to 256 Hz, or 19 note values with SYNC	1 Hz
Shape	Ramp, Triangle, Square, Sine	Triangle
SLIDER	−12 to +12 semitones	0
TUNE	−100 to +100 cents	0
SNAP	continuous or semitones	continuous
REV	on or off	off
GAIN (pad)	−12 dB to +12 dB	0 dB
FX	on or off	off
Pad mode	LAYER, SOLO	LAYER
REPEAT HOLD, MUTE	on or off	off
Cut on Release	on or off	off
Grid Lock (REPEAT HOLD, MUTE, each TRIM handle, pad)	on or off	off
Grid Subdivision	note values	1/16

CHAPTER SIXTEEN

Troubleshooting and FAQ

I hear no delay at all. Work down the list. POWER, top left, is on. INPUT MIX IN is up. OUTPUT MIX A and B are up, and their M keys are off. DELAY BYPASS is off. MUTE is off. ECHO OUT 3-4 is off, or outputs 3-4 are routed. On an aux send, the send is up.

I pressed REPEAT HOLD and hear nothing. Check MUTE, right beside it. It silences the loop.

The SLIDER does nothing. It acts only on a held loop or a pad shot. The same is true of TUNE, the STROBE and SNAP.

The STROBE turns when I want to be in tune. You are between semitones. Set SNAP to semitones, TUNE to 0, and DELAY ADJUST to (cal) 1X so UNCAL goes dark.

DELAY ADJUST does nothing. In HARDWARE with DEPTH at full, the VCO sets the delay time alone (9.1). Lower DEPTH.

The red zone said I was safe and it ran away anyway. With ROLLOFF and LOW CUT in the path, the runaway can start a little before the zone. Treat it as a guide and trust your ears.

I lost a loop when I pressed REPEAT HOLD again. The second press captures over the first and replaces the pad's copy. Only a press on silence leaves the pad alone. Save Loop before you press REPEAT HOLD again.

The pad will not trigger. An outline only means it is empty: press REPEAT HOLD once, or load a loop. If it is filled and silent, check OUTPUT MIX A and B and their M keys, the pad GAIN, and DELAY BYPASS.

The pad was empty when I reopened the project. Captured audio is not saved in presets or projects. Use Save Loop.

My MIDI map is missing on another computer. The map is saved per computer (11.3). Save it as a file and load it there.

The footswitch does nothing. Run Detect Footswitch from the menu and check its target. Several inserts on the same MIDI channel all respond.

My MIDI pad hits play twice, or my switches flip back on playback. Delete old automation on the Trigger, Repeat Hold or Mute lanes. MIDI writes no automation, so the MIDI clip alone drives them.

AUX does nothing. Click S/C in the top bar. Amber means nothing is arriving yet: in your DAW, send a track to R93's sidechain input. Then bring AUX up in INPUT MIX and OUTPUT MIX.

The echoes are missing, but outputs 3-4 meter. ECHO OUT 3-4 is on. Route outputs 3-4 to a track, or switch it off.

The DAW says zero latency, but I hear delay. Both are true. The dry signal is not delayed; what you hear late is the effect.

The output is clipping. Watch OVERLOAD, and lower the individual OUTPUT MIX faders, not MASTER (chapter 14). MODERN rounds loud peaks; HARDWARE stops hard.

A file I loaded came in quieter than the original. It was loud and bright enough to clip, so R93 lowered it just enough. The load message says by how much.

CHAPTER SEVENTEEN

iPad and iPhone

R93 Big Time runs on iPad and iPhone with iOS 15 or later. The sound, the controls and the presets are the same as on your computer. The app from the App Store holds two forms:

- **AUv3 plug-in**: for hosts such as AUM, Cubasis and Logic Pro for iPad.
- **Standalone app**: processes the microphone or the input of an audio interface, through the input and output iOS is using: it has no audio settings of its own, and it listens to every MIDI input. It starts with its input muted every time, to prevent feedback: tap Unmute Input once headphones or an interface are connected.

There is no license to activate on iPad and iPhone. The menu has no License Status, and R93 Big Time never plays the soft noise of an unlicensed computer (15.3).

17.1 Touch

- **Drag**: turns a knob or moves a fader, the SLIDER or a TRIM handle.
- **Double-tap**: returns the control to its default (1.4).
- **Tap a control, then its value while it shows**: opens the keyboard for an exact value. Return sets it.
- **Tap**: does what a click does, on the switches and levers, a name in the algorithm table, the TRIG pad and the printed values (1.4). A tap on the dots icon of the TRIM bar opens the loop menu (chapter 10). Save Loop and Load Loop open the iOS file picker, in the app and in the plug-in alike: Save Loop names the file R93 Loop with the date and time, and you can rename it and save it to any place the picker shows, such as On My iPad or On My iPhone; Load Loop takes a loop from any of those places. Recent Loops, shared by the app and the plug-in, lists the last eight loops you saved or loaded. Load MIDI Mappings and Save MIDI Mappings use the same picker.
- **Hold a control still**: the help strip explains it while your finger rests on it (12.7). After half a second, a control with a right-click menu opens that menu: Grid Lock on REPEAT HOLD and MUTE, Cut on Release on REPEAT HOLD, Grid Lock on a TRIM handle, MIDI Forget on a mapped control. A hold on the TRIG pad plays it; its menu is the Trigger Pad row (17.2).

A finger has no Shift key, so the menu has the row Link Pairs. With Link Pairs ON, a drag on one fader or knob of a pair moves the other one with it, and a tap on either M key sets both (4.6, 5.2, 5.3). A preset, a typed value or automation never moves the other one. Moving a pair in opposite directions, the Alt-drags (3.7, 4.6), the Cmd-drag of the four ROLLOFF and LOW CUT caps (3.7), Hover Audition (12.8) and dragging the TRIM bar into your DAW (6.4) need a mouse and a keyboard.

17.2 The Menu and the Panel

The menu has two rows of its own here: Link Pairs is ON / OFF (17.1) and Trigger Pad, the pad's menu (LAYER or SOLO, Grid Lock, Grid Subdivision and MIDI Forget; 8.4, 11.1). It has no License Status, Open Preset Folder, Open Loop Folder or Set Default Size: there is no license to manage, no folder to open and no window size to set. About shows the version, with no license line.

Manuals offers the Quick Guide and the user guides on the R93 Big Time page of pulsarmodular.com. The app opens them in your browser. A plug-in inside a host cannot open a browser, so it copies the link and says so in the help strip: paste it into your browser.

The panel always fits the screen, or the window the host gives the plug-in. On iPhone the app runs sideways only, as the panel is about three times as wide as it is high; on iPad it runs upright or sideways.

17.3 Presets on iPad and iPhone

Where presets live. Presets are stored inside the app and shared by the app and the plug-in. They are part of the device's backups, and deleting the app deletes them (15.4). There is no folder to open.

Browsing. Tap a preset to load it; double-tap loads it and closes the browser. Touch and hold a preset or a folder for the menu that a right-click opens on the computer. A finger drag scrolls the lists: to move a preset or a folder, choose Move to folder in its menu; to star a preset, tap its star.

Import and export. EXPORT shares the selected preset as a file, for example to the Files app or by AirDrop. IMPORT adds preset files from the Files app to the selected folder.

Deleting. DELETE removes a preset or a folder for good, after asking: iPad and iPhone have no Trash.

Factory presets and updates. The factory presets are copied into the app the first time it starts. An update adds the new factory presets of that version and leaves every preset already there as it is, your Default included. A factory preset you delete does not come back.

CHAPTER EIGHTEEN

Linux

R93 Big Time for Linux is the macOS and Windows plug-in built for Linux: the sound, the controls and the presets are the same. It installs as VST3 and LV2 on 64-bit x86 Linux with glibc 2.34 or later: Ubuntu 22.04, Debian 12, Fedora 35, Linux Mint 21 and their later versions, and current Arch-based distributions. 'getconf GNU_LIBC_VERSION' shows the version on your computer.

18.1 Installing and Activating

The download holds two packages that install the same plug-in. Use one of them, never both:

- **.deb package** (Ubuntu, Debian, Linux Mint, Pop!_OS): in its folder, run 'sudo apt install ./r93-big-time_<version>-1_amd64.deb'. It installs the LV2 for the whole computer, links the VST3 into every user account's ~/.vst3, and gives each account the factory presets and the user guides. An account created later gets them with 'sudo dpkg-reconfigure r93-big-time'.
- **.tar.gz archive** (any distribution, no administrator rights): in the unpacked folder, run './install.sh'. It installs into your own ~/.vst3, ~/.lv2 and ~/.local/share.

After installing, rescan the plug-ins in your DAW. Ardour and Mixbus load the LV2 when they start, but a new or updated VST3 needs their own scan: Window > Plugin Manager > Discover New/Updated. Until then, a session that uses the VST3 opens with R93 Big Time missing: scan, then open the session again. To update, install the new version the same way. As on macOS and Windows, it writes the factory presets again, your Default included, and refreshes the user guides; the presets you saved under your own names stay as they are. To keep a changed factory preset or your own Default, save it under a name of your own first (15.2).

Uninstalling. Run 'sudo apt remove r93-big-time' for the .deb package, or './uninstall.sh' in the folder you installed the .tar.gz archive from. Both keep your presets, loops, user guides and settings. To remove them too, delete the R93 Big Time folders in ~/.local/share/Pulsar Modular, ~/.config/Pulsar Modular and ~/.config/Pulsar Modular MIDI. Keep the Licensing folder in ~/.config/Pulsar Modular: it holds every Pulsar Modular license on the computer.

License. Until R93 Big Time is activated, it plays a soft noise instead of your audio and opens the license window by itself (15.3). Activate it there as on the other platforms: one activation covers every host and both formats for your user account on this computer.

A new computer. The license is tied to this installation of Linux: reinstalling the system or cloning it counts as a new computer. Before you reinstall, or move R93 Big Time to another computer, click Deactivate in the license window; uninstalling does not do it.

18.2 Formats and Hosts

- **REAPER**: use the VST3. REAPER cannot automate the LV2 parameters of JUCE plug-ins such as R93 Big Time.
- **Ardour and Mixbus**: both formats work.
- **Bitwig Studio**: use the VST3. Bitwig has no LV2 host.
- **Parameter values**: hosts show the LV2's parameters as plain numbers; the VST3 shows the values as the panel does.
- **Mono and stereo**: the VST3 runs on mono and stereo tracks (15.5). The LV2 is stereo only, so use the VST3 on a mono track.
- **POWER and the DAW's bypass**: in the VST3 they are one switch, as on macOS and Windows (1.5). In the LV2, the DAW's bypass switches R93 off as POWER does: your signal passes through untouched, the POWER lamp goes dark and the meters rest, but the POWER setting itself does not change.

18.3 Files, Window and Performance

Each user account has its own presets, loops and settings:

- **Presets**: ~/.local/share/Pulsar Modular/R93 Big Time/Presets
- **Loops**: ~/.local/share/Pulsar Modular/R93 Big Time/Loops
- **User guides**: ~/.local/share/Pulsar Modular/R93 Big Time/User Guides; Manuals in the menu opens them in your PDF viewer
- **Settings and the MIDI map**: ~/.config/Pulsar Modular/R93 Big Time and ~/.config/Pulsar Modular MIDI/R93 Big Time
- **License**: ~/.config/Pulsar Modular/Licensing, shared by every Pulsar Modular product on the computer

Open Preset Folder and Open Loop Folder in the menu open these folders in your file manager, and in the browser's right-click menu Show in file manager takes the place of Finder and Explorer (12.2). A preset or folder you delete in the browser goes to the desktop's trash, so you can restore it from your file manager.

Window size. The window shrinks to half its default size and grows to twice it, within 90 % of the screen (12.9). Resize the VST3 by dragging its corner, and the LV2 by dragging the window frame. Set Default Size in the menu keeps the size for new inserts. On a HiDPI screen, both formats follow the DAW's own interface scale.

Mouse and keyboard. Use the keys given for Windows: Shift and Alt for the moves in pairs (4.6), Ctrl-drag for the four ROLLOFF and LOW CUT caps (3.7), and Ctrl and Alt for Hover Audition (12.8). A desktop that moves windows with Alt and a drag, such as Xfce, takes those drags: set the key it uses to move windows to Super.

Audio dropouts. Crackles at small buffer sizes usually mean that the DAW is missing realtime privileges. Add your account to the audio group (‘sudo usermod -aG audio $USER’), give that group realtime limits, then log out and back in. On a laptop, also switch to the performance power profile (‘powerprofilesctl set performance’) for low-latency sessions.

Appendix A. Credits and Independence

Independence

R93 Big Time is not affiliated with, and is not endorsed by, Harman International Industries, Incorporated, or any owner of the Lexicon or Prime Time marks. It is likewise not affiliated with, and is not endorsed by, E-mu Systems or any owner of the SP-1200 mark. Those names are used in this guide as historical references to the instruments that inspired this product, and for no other purpose.

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Credits

R93 Big Time is a product of **Pulsar Modular**.

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Please kindly report any errors or omissions in this user guide to psupport@pulsarmodular.com.

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