

SUM DR2

A 16-channel active summing mixer, in the spirit of the modern two-bus summing boxes, with a colour send on every stem.

A Lab plug-in. The Lab is where new GFX plug-ins are built in the open: they may change sound or controls between versions.



Overview

SUM DR2 adds up eight stereo stems on a clean, discrete active bus: unity gain, no passive network, no make-up gain and no make-up noise. At its own small-signal level it is a wire; push it and a very small, level-dependent warmth appears (about 0.001 % distortion at -18 dBFS, 0.07 % at 0 dBFS). The bus never clips.

Three colour circuits sit beside it. HARMONICS adds odd and even harmonics on the edge of distortion: the top simmers, the bass growls. PARALLEL LIMIT is a fast, aggressive limiter in the "every ratio key in" style, blended in beside the untouched mix. IRON is the output transformers on the whole mix.

New in this Lab version: a **COLOUR SEND on every pair**. The hardware can colour the whole mix or one of its last two stems. Here each stem sends as much as you like to HARMONICS and PARALLEL LIMIT, the way aux sends feed effects, and the colour comes back beside the untouched stems (it never replaces them). There is no delay anywhere, so the colour lines up with the stems sample for sample: no combing.

SUM DR2 has no DRIFT: a summing mixer should do the same thing every time.

Reach for it for

- Summing stems in the box with an analogue bus
- Drums and bass with harmonics and parallel glue, vocals and pads kept clean
- Console iron on a whole mix
- A clean / coloured A / B on the mix (BYPASS = the plain sum)

Setting up in REAPER

1. Put SUM DR2 on a bus track and set the track to 16 channels (ROUTE > Track channels).
2. Send each stem to its own pair on the bus (1/2, 3/4 ... 15/16) and turn off the stems' master / parent send.
3. The mix leaves on 1/2; outputs 3 - 16 are silent.

Controls

The header

PRESETS / < > / display	The preset list (click the display too) and previous / next, wrapping round. "Reset all to defaults" at the end of the list also resets the MONO keys and the sends.
BYPASS	The key's top lights amber when bypassed: the output crossfades (15 ms) to the plain sum of the 16 inputs, with no colour, MONO or trim, so you can compare the colour against a clean sum without a click.
S / M / L / ?	Panel size; the credits and this manual's address.

The channels (one plate per pair, each in its own colour)

Signal LEDs	One green LED per channel, lit when there is signal (above about -50 dBFS).
SEND	0 to 10: how much of the pair (after MONO) feeds HARMONICS and PARALLEL LIMIT. All at 10 (the default) colours the whole

mix; turn a pair down to keep it cleaner, or to 0 to keep it out of the colour completely.

MONO

Lit in the pair's colour: the pair is folded to mono.

The colour

HARMONICS BLEND

0 to 10 (glows red): how much of the harmonics comes back into the bus. 0 = out.

ORDER

Which comes first on the send: HARMONICS into the limiter, or the limiter into HARMONICS (printed under the key). Swapping dips both for 20 ms, so it never clicks.

PARALLEL LIMIT BLEND

0 to 10 (glows blue): how much of the limited signal comes back beside the dry mix. 0 = out. The red LED beside it glows with the gain reduction.

IRON AMOUNT

0 to 10 (glows orange): the output transformers on the whole mix. The first step fades in solid, punchy console iron (a low bump, a gentle top); further up drives the core, so the lows saturate and the top rounds off a little more. 0 = out.

MASTER OUT

Meter

L and R ladders of LEDs, -42 to +3 dBFS in 3 dB steps, coloured like the channels from 15-16 blue at the bottom to 1-2 red at the top. The peak holds 1.2 s, then falls; click to clear.

LEVEL TRIM

-3 to +3 dB in 0.5 dB steps (glows green, lit outwards from 0), for exact recalls.

Knobs: drag (hold Shift for fine moves) or use the mouse wheel; double-click or Ctrl-click returns to the default. Every move glides, so nothing clicks.

Presets

Presets set the three colour dials, ORDER and the trim; they leave the SEND knobs and MONO keys alone, as they belong to the mix.

Init / Clean Sum

Every colour out: the clean active bus.

Harmonics Glow	HARMONICS 4: warmth and a little sparkle.
Harmonics Edge	HARMONICS 8.5: obvious grit and growl.
Parallel Glue	PARALLEL LIMIT 2.5: density without losing the hits.
Parallel Smash	PARALLEL LIMIT 5.5: loud and aggressive.
Iron Punch	IRON 2: console iron, just in.
Iron Drive	IRON 7.5: the core driven.
Full Colour	HARMONICS 4.5, PARALLEL LIMIT 3.5, IRON 4.
Full Colour, Limit First	The same with the limiter before the harmonics.
Harmonics and Glue	HARMONICS 6, PARALLEL LIMIT 2.5, IRON 3.

Tips

- Leave the SEND knobs at 10 to colour the whole mix, then pull back the stems that should stay clean (vocals, acoustic instruments) and leave drums and bass up.
- Use BYPASS to hear the plain sum: the difference is the colour you've added.
- Put SUM DR2 on the bus that the stems feed, not on the master track after other processing.

Latency: none.

File: gfx-lab-sum-dr2.jsfx