

C2ME

A 70s British broadcast-console channel: the input stage, the channel EQ and a stereo pair of compressor / limiter modules in one unit, with its gain reduction shown on REAPER's track meter.

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. This is the Stable C2ME with one addition: TRACK GR METER.



Overview

C2ME puts C2E's channel EQ and C2M's dynamics modules side by side, the way a channel and the centre bay sit on a broadcast desk. The signal comes in through the input stage (a transformer and the console's op-amp), passes through the EQ and the two dynamics modules in the order you choose, and leaves through the output transformer and the desk's stereo WIDTH matrix.

The two dynamics modules work on the two sides of the stereo signal: **A** is the left, **B** the right. With LINK on (the normal way to use them) they act as one stereo unit. Each has a peak limiter and a compressor.

It is a mix tool, so there is no clip stage at the output: what you set is what you get. Levels are calibrated so that 0 dBu on the dials is -18 dBFS in REAPER.

TRACK GR METER

C2ME tells REAPER how much it is turning the sound down, so the gain reduction shows on the track's own meter (a bar hanging down from the top) and in the mixer, with the plug-in window closed. It shows the compressor and the limiter together, on whichever side is working harder, and takes MIX into account: at 50 % MIX the bar shows what the blend really takes off.

It needs REAPER 7 or later. Switch it on in Preferences > Project > Track/Send Defaults: Track meter display, "Display gain reduction for plug-ins that support it" (for new tracks); on an existing track, right-click its meter. Older REAPERs simply ignore it. The panel and the sound are the same as the Stable C2ME.

DRIFT

DRIFT is the desk's supply, bloom and iron: the power rail wanders slowly, so the input stage's headroom breathes; the compressors' VCA colour and recovery time drift a little; and each side's transformer core wanders on its own. 0 is steady, 3 is the standard amount and 10 is an old desk on a warm day.

Reach for it for

- A complete vocal or instrument channel in one plug-in
- Gentle glue on a mix bus or drum bus, with the console's colour
- Broadcast-style voice: tight compression with a safety limiter
- Parallel compression without a second track (MIX)
- Narrowing or widening a stereo source without touching its centre (WIDTH)

Controls

The header

PRESETS

Opens the preset list (with "Reset all to defaults" at the end).

◀ / ▶	Steps to the previous or next preset, wrapping round.
Preset display	Shows the preset's name. Click it for the preset list too.

INPUT

O/L	Lights when the input stage is being pushed into its headroom (above about 0 dBFS into the op-amp).
TRIM	The level into the channel, -20 to +20 dB. Drive it up for more of the input transformer and op-amp colour; back it off for a cleaner sound.
PH	Flips the polarity (phase) of both sides.

FILTERS

HPF	High-pass filter, 20 to 400 Hz, 12 dB per octave. Fully left (OFF) is out of circuit.
LPF	Low-pass filter, 2.5 to 20 kHz, 12 dB per octave. Fully right (OFF) is out of circuit.
F	Switches both filters in and out together.

EQUALISER

EQ	Switches the four bands in and out (the section greys out when it's off).
HF	2.7 to 16 kHz, ± 15 dB. A gentle shelf, or a bell with BELL lit.
HMF	1.1 to 6.8 kHz, ± 15 dB, a bell.
LMF	180 Hz to 2.4 kHz, ± 15 dB, a bell.
LF	47 to 470 Hz, ± 15 dB. A gentle shelf, or a bell with BELL lit.
GAIN / FREQ	Each band's boost or cut and its frequency. The bells are "proportional Q", like British broadcast desks: broad and gentle for small moves, tighter as the boost or cut grows.

PEAK LIMIT (each module)

RECOVERY 75ms / 5s / AUTO	How fast the limiter lets go: quickly, slowly, or AUTO, which recovers quickly after short peaks and slowly after long passages.
THRESHOLD	-4 to +16 dBu. The "0" marks 0 dBu (-18 dBFS). Peaks above it are held down.
LIMIT	Switches the limiter in. The red LED beside it lights while it is limiting.

COMPRESSOR (each module)

GAIN	Make-up gain, 0 to +20 dB.
RATIO	1.5:1 to 5:1, with a soft knee.
RECOVERY	0.1 to 4 s: how quickly the compressor lets go.
THRESHOLD	-20 to +10 dBu. The "0" marks 0 dBu.
FAST	A 1 ms attack (off: 10 ms) for catching transients.
AUTO	Programme-dependent recovery: quick after short bursts, slow after long loud passages. RECOVERY is ignored while it is on.
COMP	Switches the compressor in.
GR meter	Two columns: C (red) shows the compressor's gain reduction, L (amber) the limiter's, in dB.

Module keys

LINK	The two modules act as one stereo unit: they share the louder side's level and their controls move together. Switching LINK on copies module A's settings to B.
IN	Switches the module in or out (crossfaded; the module greys out when it's out).

The right strip

EQ RESPONSE	The curve of the filters, the EQ and TRIM, ± 18 dB.
ORDER	EQ > DYN or DYN > EQ. The modules swap places on the panel too, and the change is ducked for a few milliseconds so it never clicks.
MIX	Parallel compression: 100 % is fully processed; lower values blend the uncompressed signal back in.
WIDTH	The desk's stereo image matrix, after everything else: 0 % is mono, 100 % (the "0" mark) leaves the sound untouched, 200 % doubles the sides. The centre is never changed, so mono compatibility holds at every setting.
DRIFT	Supply + bloom + iron, 0 to 10 (see above). The orange arc shows how much.
IRON	The input and output transformers in or out. In: the low end saturates first and the top is softly rounded.
PEAK	The highest output peak, in dBFS. Click it to clear it.
IN / OUT	Input and output level meters, -48 to +3 dBFS. OUT has a floating peak segment.

Presets

Init	The defaults: both modules linked, a gentle 3:1 compressor at 0 dBu with 2 dB make-up, the limiter at +12 dBu, a flat EQ.
Vocal Channel	An 80 Hz high-pass, a little air at 10 kHz and presence at 3.6 kHz, a touch of low-mid cut, and smooth AUTO compression with the limiter on AUTO.
Broadcast Voice	Firm 5:1 FAST compression into the limiter, dynamics before the EQ: dense and even, for speech.
Drum Bus	4:1 FAST compression with quick recovery, 70 % MIX for parallel punch, weight at 70 Hz and a lift at 12 kHz.

Bass DI	Tight FAST compression with the limiter close behind, an 8 kHz low-pass, weight at 80 Hz and growl at 1.2 kHz.
Acoustic Guitar	A 100 Hz high-pass, the boom taken out at 180 Hz, sparkle at 12 kHz and gentle 2.5:1 compression.
Mix Bus Glue	1.5:1 with AUTO recovery and only 1.5 dB of make-up, dynamics first, a little air and weight: holds a mix together.
Room Squash	Heavy 5:1 FAST compression with 16 dB of make-up at 50 % MIX and more DRIFT: smashed room sound blended under the dry.
Desk Colour Only	No dynamics and no EQ: TRIM up 6 dB into the iron and the input stage, with DRIFT at 6 - just the desk's sound.

Tips

- Start with LINK on: the stereo image stays steady because both sides are turned down together.
- Use DYN > EQ when you want the EQ to shape an already-controlled sound (a bright vocal stays bright without the boost pumping the compressor); EQ > DYN when the compressor should react to the EQ'd sound.
- For parallel compression, set heavy compression (high RATIO, low THRESHOLD, FAST) and bring MIX down until the dry transients come back.
- Watch PEAK when you push TRIM and GAIN: there is no clipper at the output.
- WIDTH below 100 % is a good way to tame a very wide stereo keyboard or room mic without losing its centre.

File: gfx-lab-c2me.jsfx (needs no system files)