

MULTIBAND MASTERING SOLUTION FOR EURORACK

ENDORPHINES®

GOLDEN MASTER 3U & 1U



FIRMWARE VERSION X!

CONTENT

WARRANTY.....	3
VISIT US.....	3
INTRO.....	4
CONNECTING THE POWER.....	5
TECHNICAL SPECIFICATIONS.....	5
SIGNAL CHAIN AND FEATURES.....	6
INTERFACE.....	7
REAR CONNECTIONS.....	9
HOW EQUALIZER WORKS.....	11
HOW COMPRESSOR WORKS.....	12
IN GAIN: GLOBAL COMPRESSION DEPTH.....	13
LOW/MID/HIGH KNOBS.....	14
STYLE CHARACTERS.....	14
SUGGESTED USE BY MUSIC STYLE.....	16
HOW MID/SIDE PROCESSING WORKS.....	16
NARROW MODE.....	17
WIDE MODE.....	17
FIRMWARE UPDATE.....	19
CREDITS.....	20
COMPLIANCE.....	20

WARRANTY

1-year warranty is guaranteed from the product's purchase date in case of any manufacturing errors or other functional deficiencies during runtime.

The warranty does not apply in case of:

- damage caused by misuse
- mechanical damage arising from careless treatment (dropping, vigorous shaking, mishandling, etc.)
- damage caused by liquids or powders penetrating the device
- heat damage caused by overexposure to sunlight or heating
- electric damage caused by improper connecting

The warranty covers replacement or repair, as decided by us. Please contact us via email for a return authorization before sending anything. Shipping costs of sending a module back for servicing is paid by the customer.

VISIT US

<https://endorphin.es>

<https://youtube.com/@endorphines>

<https://facebook.com/TheEndorphines>

https://twitter.com/endorphin_es

<https://www.instagram.com/endorphin.es/>

<https://www.modulargrid.net/e/modules/browser/vendor:167>

For technical requests: [**support@endorphin.es**](mailto:support@endorphin.es)

For dealer / marketing inquiries: [**info@endorphin.es**](mailto:info@endorphin.es)

ENDORPHIN.ES is a registered trademark.

It is doing business as FURTH BARCELONA, S. L. (EU VAT ID: ES B66836487).

INTRO

GOLDEN MASTER is a **stereo multiband processor** available in both **3U / 6HP** and **1U / 22HP** Eurorack formats. Inspired by classic studio mastering processors and radio loudness units from the 90s, it combines **three-band EQ**, **three-band compression**, and **mid/side processing** in a compact performance-oriented module.

All three processing sections are available at the same time, allowing GOLDEN MASTER to shape tone, control dynamics, and adjust stereo image simultaneously. The audio signal is split into three frequency bands: **LOW**, **MID**, and **HIGH** with each band handling a different part of the spectrum.

With **24-bit / 96 kHz audio processing**, GOLDEN MASTER provides high-resolution stereo processing for full patches, live performance, and end-of-chain use. Each band has a single control that can boost or cut its level, making it easy to shape the overall balance of a patch or full mix. The compressor adds punch, density, and dynamic control, while the mid/side section helps manage stereo width and focus. At the end of the chain, a brickwall limiter sets the maximum output level and helps keep the signal under control.

GOLDEN MASTER is designed as an **end-of-chain processor** for modular eurorack systems, live performance, and compact mastering-style processing. It can be used to polish a full patch, add loudness and punch, control peaks, tighten the low end, or make a stereo mix feel more finished and stable.

The **1U version** includes additional rear-panel pin headers for deeper integration with compatible cases and internal audio routing. The **AUX IN** and **MIX OUT** headers allow the module to be connected inside the case without using front-panel patch cables. An additional 6-pin connector can route the master output directly to the ¼-inch output jacks of an Intellijel Performance Case, providing a cleaner and more secure setup for live performance.

- Video manual: <https://youtu.be/YiC1MF3fm0>
- Why do you need a Golden Master: <https://youtu.be/jNi4JB58Q0M>

CONNECTING THE POWER

Before installing a new module in your case, ensure your power supply has a free power header and sufficient available capacity to power the module.

Connect the module directly to the power bus-board with supplied 10-16 ribbon cable like any other eurorack module. Pair of **RED/BROWN** pins on the ribbon cable corresponds to **NEGATIVE -12 VOLTS**.

Make sure to align the power cable with the '**RED/BROWN STRIPE**' label on the module that corresponds to -12V, to the 10-pin connector and with typically a white line for the 16-pin connector on the bus board.

TECHNICAL SPECIFICATIONS

- **GOLDEN MASTER 3U**: +12V: 135 mA; -12V: 25 mA; 30mm depth, 6HP
- **GOLDEN MASTER 1U**: +12V: 125mA; -12V: 12mA; 42mm depth, 22HP

SIGNAL CHAIN AND FEATURES

The Golden Master signal path is built as a compact mastering-style chain for modular levels.

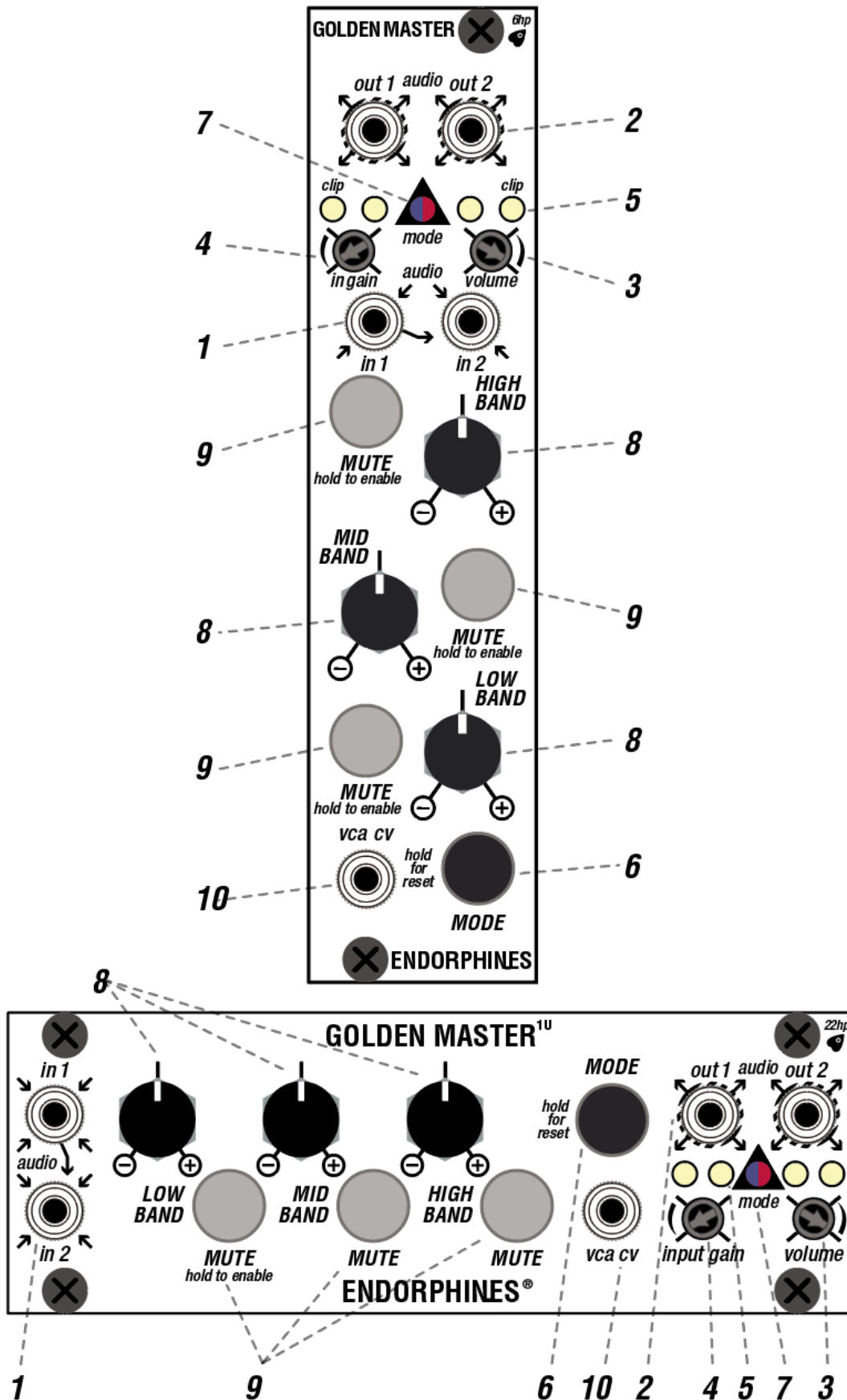
First, the signal enters the stereo input stage. An internal digital saturation stage can bring the signal to the optimal working level, which is useful when you want to drive the compressor harder or add more density before the multiband processing.

The signal is then split into three frequency bands: **LOW**, **MID**, and **HIGH**. Each band has its own EQ setting, compressor behavior, mute / compressor enable control, and stereo image processing. After the three bands are processed, they are summed back together and sent to the final brickwall limiter.

The limiter sets the maximum output level and helps keep the signal under control at the end of the chain. This makes Golden Master useful not only for final mix processing, but also for sound design, feedback patching, and controlling loud or unpredictable modular signals.

- Stereo multiband processor inspired by classic mastering and loudness tools
- Three simultaneous processing sections: **EQ**, **compression**, and **mid/side processing**
- Three frequency bands: **LOW**, **MID**, and **HIGH**
- Per-band EQ with up to **+8 dB boost** and **-20 dB cut**
- Per-band mute / compressor enable buttons
- Three-band compression for punch, density, and dynamic control
- Stereo image processing for controlling width and focus
- Final brickwall limiter with **1 ms look-ahead**
- **24-bit / 96 kHz audio I/O** with **32-bit internal processing**
- Pseudo-balanced outputs for use with Eurorack patch cables or balanced connections
- Suitable as an end-of-chain processor, mix finisher, or creative sound design tool

INTERFACE



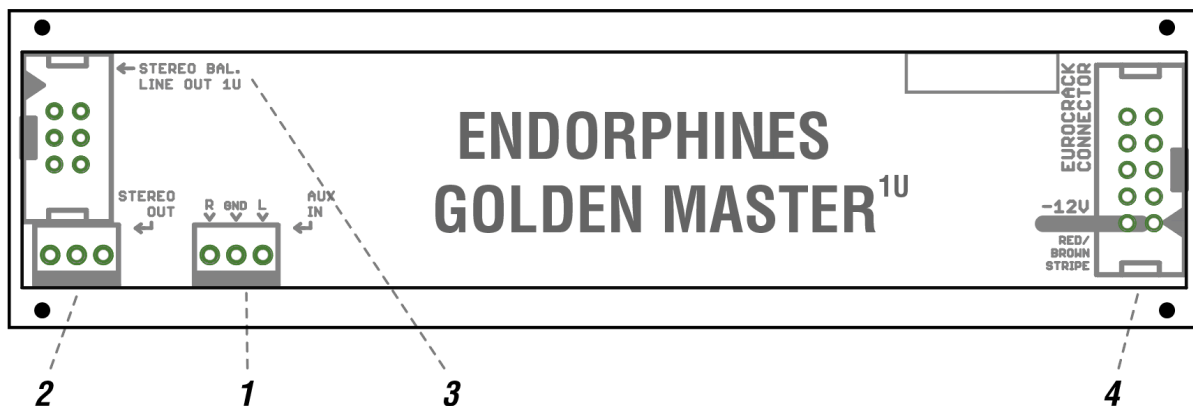
1. **IN LEFT (MONO), IN RIGHT JACKS:** line or modular level left and right stereo audio inputs. *INPUT LEFT* – is *normalised*, i.e. pre-routed → to *INPUT RIGHT* when no audio cable is plugged into the *IN R jack*. Accept standard eurorack mono cables 1/8" cables. Modular levels up to +/-6.5V with soft clipping introduced with higher audio amplitudes.
2. **OUT LEFT (MONO), OUT RIGHT JACKS:** final separate left and right stereo audio outputs. Accept standard mono eurorack 1/8" patch cables. Using 1/8" TRS cables can be used as *pseudo-balanced* outputs as a DI-box with better performance with noise cancellation since the ring is connected to ground, catches the same hum which then self-cancels from the audio from the tip.
3. **VOLUME KNOB:** final audio volume: maximum at full CW, silent at full CCW. Maximum at full CW, silent at full CCW. Set it once and forget it.
4. **INPUT GAIN KNOB:** controls the overall compression depth for all three bands at once. Starting from [firmware version X!](#), this knob works as a global compressor *macro* control not only as a simple input gain control. At full CCW, compression is minimal and the signal stays more open and dynamic. Turning the knob clockwise lowers the effective threshold, making the compressor work harder. Higher settings add more density, loudness, and dynamic control. Near the end of the range, a small amount of additional digital gain is also applied, allowing the signal to hit the compressor harder for more aggressive compression and saturation. This control works globally, no matter which *MODE* (6) is currently selected.
5. **VU METER LEDs:** 4 LEDs act as a volume unit meters, 2 LEDs per left and 2 right channel. The inner pair of LEDs lights up according to the audio signal. The outer pair of LEDs lights up when signal clipping occurs.
6. **MODE BUTTON:** shortly press to select one of the 3 modes to edit with *MODE LED* (7):
 - **BLUE** (default): EQ or band's amplitude
 - **RED**: Compressor settings
 - **FUCHSIA**: Mid/Side stereo widening (CW) or narrowing (CCW)
 Long press resets the controls to their default (typically clean) states
7. **MODE LED:** red-blue LED shows the current editing mode with Mode button (6).
8. **LOW / MID / HIGH BAND KNOBS:** depending on the *MODE* (6) they adjust:
 - **EQUALIZER MODE:** level of each band.
 - **COMPRESSOR MODE:** compressor character, from light to beat FX.
 - **MID/SIDE MODE:** increase or decrease stereo enhancement per band

9. MUTE/COMPRESSOR ENABLE BUTTONS: single press on these buttons works as immediate mute per band. When the band is muted, its button LED is semi-dimmed. You can use it as a live performance feature, but also to precisely set the compressor while muting other bands. Long press (more than 1.5 seconds) enables the compressor and its button LED is fully lit. Only after the compressor is enabled on a certain band, will you be able to set its parameter with *LOW/MID/HIGH BAND KNOBS* (8) set to *compressor* mode (6).

10. VCA CV JACK: post-VCA, pre-VOLUME knob CV input. CV range: 0...+5V. 0V corresponds to silence and 5V corresponds to full volume.

REAR CONNECTIONS

The **GOLDEN MASTER 1U** version features extra rear connections (those are not available in the 3U version).



1. AUX IN: accepts audio input from other Mix Bus compatible modules and is basically another stereo input to be mixed with the rest 4 channels.

2. MIX OUT is post-master volume knob audio output, compatible with other Mix Bus modules.




3. STEREO BALANCED LINE OUT is a 6-pin connector for the Intellijel Jacks IO v2 board. Let's route the final post master volume knob output straight to the TRS jacks on the Intellijel cases.

4. POWER CONNECTOR is 10 pin typical +/-12V eurorack power connector.

OPERATION MODES

GOLDEN MASTER's processing chain consists of three simultaneous multiband sections: **EQUALIZER**, **COMPRESSION**, and **MID/SIDE PROCESSING**.

Use the **MODE** button (6) to select which section is currently being edited. The **MODE LED** (7) indicates the selected mode with a dedicated color:

<i>MODE LED COLOR</i>	<i>SELECTED MODE</i>	<i>LOW / MID / HIGH KNOB FUNCTION</i>
	EQ	Adjusts the gain of each band
	COMPRESSOR	Shapes the compression character of each band
	MID/SIDE	Adjusts the stereo width of each band

The **LOW/MID/HIGH** knobs (8) always control the three frequency bands, but their function changes depending on the selected mode.

All three processing sections remain active at the same time. Switching modes only changes what the knobs are editing; it does not bypass or disable the other sections.

When you switch to another mode, the previous settings are stored internally. To avoid sudden parameter jumps, each knob uses pickup behavior: the parameter will only start changing once the physical knob reaches the stored value for the selected mode.

EQ: **LOW/MID/HIGH** knobs (8) adjust each band's volume with 100% in the middle, -20 db CCW and +8db boost CW. Band crossover points are around 300 Hz and 3 kHz. See detailed explanation [HOW EQUALIZER WORKS](#) below

COMPRESSOR: **LOW/MID/HIGH** knobs (8) set the compression character for each band. From CCW to CW they determine whether the compressor feels clean, punchy, smooth, loudness-focused, or effect-like.

IN GAIN / THRESHOLD knob (4) globally controls how strongly the compressor works on all three bands, regardless of the selected **MODE** (6). Fully counterclockwise gives minimal compression, the middle position gives balanced compression, and fully clockwise gives very strong to super extreme compression. Use lower settings for transparent mastering and natural dynamics. Use higher settings for loudness, density, pumping, and creative compression effects. Near the

end of the range, the control also adds a small amount of digital gain to drive the compressor harder.

→ **NOTE:** to make the compressor work on each band you have to enable it with long MUTE/compressor enable (9) buttons press.

See detailed explanation with music styles in [HOW COMPRESSOR WORKS](#) below

MID/SIDE: *LOW/MID/HIGH* knobs (8) set the stereo spread of each band. It is a powerful tool for removing muddiness by focusing the low-end in the center of the mix, freeing up space on the sides. From mono (full CCW) to normal (middle) to wide stereo spread (full CW) - see [HOW MID/SIDE PROCESSING WORKS](#) paragraph below.

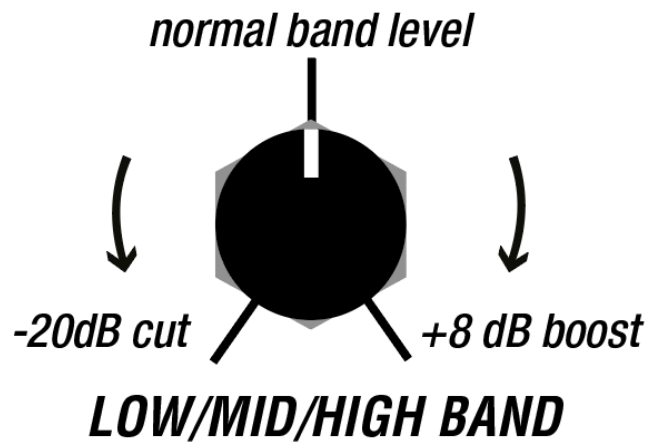
HOW EQUALIZER WORKS

An equalizer, or **EQ**, is used to adjust the level of different frequency ranges in an audio signal. It allows you to boost or cut selected parts of the spectrum in order to shape the tone, balance the mix, remove unwanted energy, or make certain elements feel more present.

GOLDEN MASTER has a **three-band stereo equalizer**. The incoming signal is split into three frequency bands, processed separately, and then summed back together. Each band can be boosted or cut with its corresponding **LOW**, **MID**, or **HIGH** control.

The crossover points are set around **300 Hz** and **3 kHz**, creating three broad musical bands:

- **LOW BAND** - approx. 20 Hz...300 Hz: bass guitar, kick drum, bass synths, low toms, sub energy
- **MID BAND** - approx. 300 Hz...3 kHz: guitars, synths, vocals, snares, toms, body and presence
- **HIGH BAND** - approx. 3 kHz...20 kHz: hi-hats, cymbals, percussion, brightness, air, noise, upper harmonics



The **LOW** band controls the weight and power of the sound. Use it to add or reduce bass, tighten the low end, or control excessive rumble.

The **MID** band controls the body, character, and presence of many instruments. Use it to bring sounds forward, reduce boxiness, or shape the main musical content of a mix.

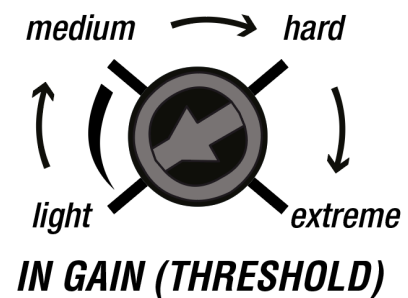
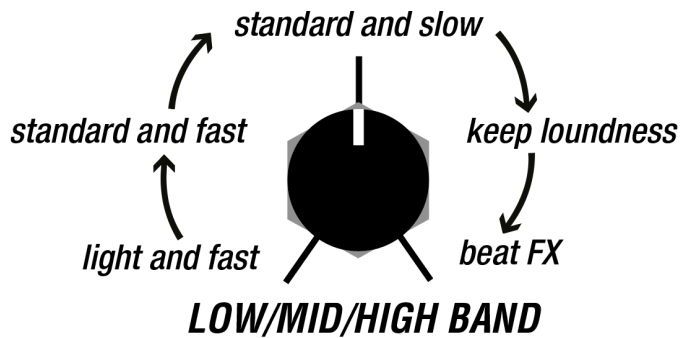
The **HIGH** band controls brightness, detail, and air. Use it to add sparkle and definition, or to soften harshness and high-frequency noise.

→ **NOTE:** The level of cut/boost is asymmetric; maximum boost is limited to +8dB, while the cut is extended to -20dB like on professional DJ mixers.

HOW COMPRESSOR WORKS

To better understand the GOLDEN MASTER, let's have a small theory lesson of how a compressor works. In the audio signal usually we have loud parts (e.g. strong hits on the strings) and quieter parts (notes played with soft velocity). The difference between those parts is called the dynamic range of a signal. What the compressor does is it attenuates the loud parts towards more quiet ones - i.e. reducing the dynamic range of the audio. Of course that depends on the compressor settings such as: ratio, threshold, attack and release. Why we compress is that in the end we get a more smooth and consistent audio. Some audio sources like bass guitar are especially sensitive in dynamic range and therefore need to be compressed especially to be perceived without 'drops' of the volume in the speakers. At the compressor GOLDEN MASTER has an automatic makeup gain to ensure all the gain reduction we've made from the compressor is being compensated. This way you get a balanced audio that also goes through a limiter to ensure all the unwanted peaks or the audio clipping is eliminated to avoid damaging your PA equipment.

GOLDEN MASTER has a three-band stereo compressor. The compression behavior is shaped by the *LOW / MID / HIGH* knobs (8), while the *IN GAIN / THRESHOLD* knob (4) controls the overall compression depth applied to all three bands at once.



The **LOW/MID/HIGH** knobs (8) do more than simply change the level of each band. Together, they select different compression characters for the low, mid, and high frequency ranges. Depending on their position, the compressor can behave more gently, more tightly, more smoothly, or more aggressively.

The **IN GAIN / THRESHOLD** knob (4) works as the main compression depth control. Turning it clockwise makes all three compressors work harder:

- **FULLY COUNTERCLOCKWISE:** compression is minimal
- **AROUND THE CENTER:** medium compression for general mix control and mastering-style glue
- **FULLY CLOCKWISE:** very strong compression, from heavy control to extreme creative effects, with a small amount of additional digital gain near the end of the range

In simple terms: **LOW / MID / HIGH** define the compression character. **IN GAIN / THRESHOLD** defines how strongly that character is applied.

IN GAIN: GLOBAL COMPRESSION DEPTH

The **IN GAIN / THRESHOLD** knob (4) adjusts the global compression depth for all three bands at once. At full CCW, the compressor works very lightly or almost not at all. This is useful when you want to keep the original dynamics of the sound.

As the knob is turned clockwise, the effective threshold is lowered and the compressor starts working harder. Peaks are controlled more strongly, the sound becomes denser, and the overall level feels more stable.

At high settings, the compression becomes strong and obvious. This can be used for loud, controlled masters, heavy pumping, or creative dynamic effects. Near the fully CW position, the knob also adds a small amount of digital gain, pushing the signal harder into the compressor for extra density and saturation.

THRESHOLD POSITION	COMPRESSION DEPTH	CHARACTER
Fully CCW	Light	Open, dynamic, lightly processed
Around 33%	Light / Medium	Gentle smoothing and polish
Around 50%	Medium	Balanced glue, density, and control
Around 66%	Hard	Stronger loudness and tighter dynamics
Fully CW	Super extreme	Heavy compression, pumping, creative squash

LOW/MID/HIGH KNOBS

The **LOW**, **MID**, and **HIGH** knobs shape how the compressor reacts in each frequency band. They define the style of compression rather than only the amount.

This means you don't need to think in terms of attack, release, ratio, knee, or gain-reduction range. The controls can simply be understood as musical character controls for each band:

- The **LOW** knob changes how the compressor treats bass, kick, low synths, and low-frequency energy.
- The **MID** knob changes how the compressor treats body, presence, vocals, guitars, synths, and melodic material.
- The **HIGH** knob changes how the compressor treats hats, noise, transients, air, brightness, and upper harmonics.

Together, these knobs let you move between transparent mastering compression, punchy beat control, smooth loudness shaping, and more aggressive effect-like compression.

STYLE CHARACTERS

→ LIGHT AND FAST

This character gives quick, gentle control. It catches peaks without heavily changing the source. The sound stays open, clear, and natural. It is useful when the material already sounds good and only needs small dynamic correction.

Best for: ambient, downtempo, harp, acoustic instruments, clean guitars, soft modular patches, delicate percussion, subtle mastering.

→ **STANDARD AND FAST**

This character is tighter and more energetic. It reacts quickly and adds punch, glue, and loudness without becoming too slow or soft. It works well on rhythmic material where the groove should remain clear and forward.

Best for: house, techno, drum machines, synth bass, rhythmic modular patches, percussion loops, punchy guitars, general electronic mixes.

→ **STANDARD AND SLOW**

This character gives smoother and more natural compression. It reacts less aggressively to fast peaks and lets the sound breathe more. It is useful for full mixes, live material, and sources that need glue rather than obvious compression.

Best for: downtempo, house, ambient with beats, live instruments, guitars, harp, melodic synths, full mix processing.

→ **KEEP LOUDNESS**

This character is slow, stable, and even. It helps maintain perceived loudness without making the compression feel too nervous or choppy. It is especially useful for sustained sounds, soft dynamics, and material where the level should remain controlled but musical.

Best for: ambient, drone, cinematic material, downtempo, harp, guitars, pads, soft synths, balanced full mixes.

→ **BEAT FX**

This character is the most obvious and effect-like. It gives strong dynamic movement, pumping, and aggressive control. It is less about transparent mastering and more about making compression part of the sound.

Best for: techno, hard techno, electro, industrial, drum loops, breakbeats, modular rhythms, sidechain-like movement, creative performance effects.

SUGGESTED USE BY MUSIC STYLE

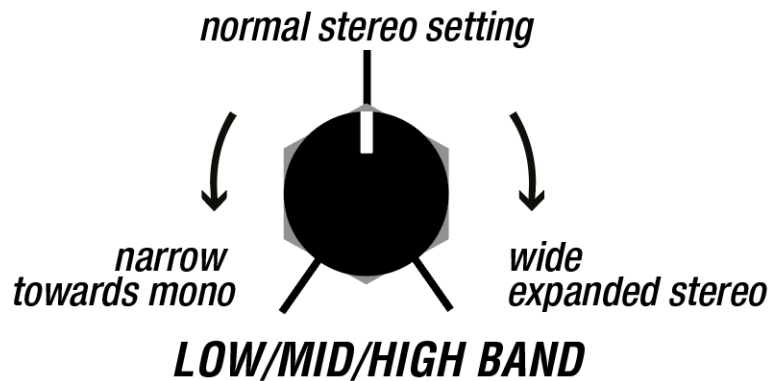
SOURCE / MUSIC STYLE	SUGGESTED CHARACTER	IN GAIN / THRESHOLD KNOB RANGE
TECHNO	Standard Fast / Beat FX	Middle to fully CW
HARD TECHNO / INDUSTRIAL	Beat FX	High to fully CW
HOUSE	Standard Fast / Standard Slow	Light to medium
DOWNTEMPO	Standard Slow / Keep Loudness	Light to medium
AMBIENT / DRONE	Light Fast / Keep Loudness	Fully CCW to middle
GUITARS	Light Fast / Standard Slow / Keep Loudness	Light to medium
HARP / ACOUSTIC INSTRUMENTS	Light Fast / Keep Loudness	Fully CCW to light
DRUM MACHINES	Standard Fast / Beat FX	Medium to hard
FULL MIX / MASTERING	Standard Slow / Keep Loudness	Light to medium
EXPERIMENTAL MODULAR PATCHES, HARSH NOISE	Beat FX / Standard Slow / Light Fast	Any, depending on desired effect

HOW MID/SIDE PROCESSING WORKS

GOLDEN MASTER has independent stereo width processing for the LOW, MID, and HIGH bands. Each band uses its own widening algorithm, optimized for the frequency range it processes.

The width control works in two halves:

- The first half of the knob range is **NARROW MODE**
- The second half of the knob range is **WIDE MODE**
- At the center position, the band keeps its original stereo width



Turning the control counterclockwise narrows the stereo image of that band, gradually moving it toward mono. Turning it clockwise expands the stereo image using band-specific mid/side and decorrelation processing.

NARROW MODE

In the first half of the knob range, the processor works as a stereo narrowing tool. As the knob is turned counterclockwise, the left and right channels become more similar. At the minimum position, the selected band becomes mono.

This is useful for keeping bass focused, tightening the center of a mix, or reducing excessive stereo movement in a specific frequency range.

WIDE MODE

In the second half of the knob range, GOLDEN MASTER expands the stereo image. Instead of simply making the side signal louder, the MID and HIGH bands use decorrelation. This process creates small phase and timing differences between the left and right channels, helping the ear perceive a wider image.

Our hearing localizes sound partly by comparing tiny time and phase differences between both ears. A mono sound has the same phase relationship in both channels, so it is perceived as one centered source. When the correlation between left and right is reduced, the brain can perceive the same material as a wider or more spacious image.

For example, a mono acoustic guitar normally appears as one source in the center. With decorrelation, the same guitar can feel wider, almost as if two similar sources are playing together. The amount of this effect is controlled by the width knob.

LOW BAND WIDTH

The LOW band uses classic mid/side processing. The signal is split into **mid** and **side** components, and the side component is gently emphasized. The amount of widening in the LOW band is intentionally limited. Low frequencies are usually kept narrow or mono in mixing and mastering, because wide bass can reduce focus and translation. For this reason, the LOW band widening is capped at a subtle range.

If the low-frequency signal contains no stereo information, meaning the side component is absent, the LOW width control will have little or no audible effect in Wide mode.

MID BAND WIDTH

The MID band uses two parallel widening processes.

The first process works on the **mid** signal. It sends the mono or center information through two decorrelation paths, creating two related but slightly different signals for the left and right channels. This can turn a narrow or mono midrange source into a wider stereo image.

The second process works on the **side** signal. It enhances existing stereo information, making already-wide material feel larger and more open.

Across the Wide range of the knob, the processor first enhances the existing stereo image. As the knob is turned further clockwise, it gradually introduces more mono-to-stereo widening.

HIGH BAND WIDTH

The HIGH band follows the same general concept as the MID band, but uses a different implementation optimized for high frequencies.

Because high-frequency decorrelation requires longer and more delicate filtering, the HIGH band uses a delay-line-based approach. Small delay movements are added with LFO modulation, giving the widened high frequencies a more animated and lively character.

This can add air, shimmer, movement, and spaciousness to hats, noise, reverbs, bright synths, strings, and upper harmonics.

DECORRELATION CHARACTER

The decorrelation engine is based on extremely short micro-reverb and delay structures, typically in the range of approximately **0.1 ms to 2.5 ms**. These reflections are too short to be heard as a conventional reverb, but they are enough to create stereo separation and reduce left/right correlation.

This makes the sound wider without needing obvious echoes or reverb tails.

FIRMWARE UPDATE

Firmware updates are essential for any digital devices. They bring new features or bug fixes. Feel free to write any bugs, features ideas or improvements to beta@endorphin.es

Update procedure video:

To update the firmware on your Golden Master, first download the latest firmware file once available on ENDORPHIN.ES website:

<https://www.endorphin.es/modules/p/golden-master> or

<https://www.endorphin.es/modules/p/golden-master-1u>

The update procedure is made via audio: either computer or phone will work, we advise you to disable all notifications (flight mode) so that the update is not interrupted.

1. Power OFF your modular system.
2. Hold MODE while powering again, you will see the illuminati LED blink blue.
3. With a simple mono or stereo cable connect audio output from your computer headphone output into AUDIO IN 1 jack of the module.
4. Press PLAY and wait until the audio file finishes its playback (approx. 1 min.). Illuminati LED will quickly blink in blue. The module will reboot automatically.
5. Don't play any other sounds on your computer during the update process. When Illuminati LED flashes RED, the signal is too low or too high. Stop audio playback. Reset the process by pressing the MODE button once. Regulate the signal level and restart the audio playback from the beginning.
6. Video update guide: <https://youtu.be/WKt7FdRGRYI>
7. Enjoy the new features.

→ **IMPORTANT:** to prevent any errors during the audio playback of the firmware, please disable any effects that might be applied to the audio (EQ, room correction etc.)

CREDITS

ENDORPHIN.ES – GOLDEN MASTER 3U & 1U

Module idea, concept and manual by Andreas Zhukovsky

Hardware design, code direction by Andreas Zhukovsky

Core engine programming by BSVi

V3 firmware by AB

ENDORPHIN.ES are made in Barcelona province of Spain

Follow, like, post and tag us at Instagram: [@endorphin.es](https://www.instagram.com/endorphin.es)

COMPLIANCE

FCC

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.

Changes / modifications not approved by ENDORPHIN.ES doing business as Furth Barcelona, S.L. could void the user's authority to operate the equipment.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.

CE

This device meets the requirements of the following standards:

EMC: 2014/30/EU EN55032: 2015 ; EN 55103-2: 2009 (EN55024) ; EN61000-3-2; EN 61000-3-3

Low Voltage: 2014/35/EU EN 60065: 2002+A1: 2006+A11: 2008+A2 :2010+A12: 2011

RoHS2: 2011/65/EU

WEEE: 2012/19/EU