xmax


xmax
link
mid
side
sig
tone
gr mid
gr side
mid thres
mid gain
gr low
s-clip
side thres
side gain
elysia
low thres
low gain
lowmo
x-freq
s-clip
punch
time
level
hit it!
masterbus processor
elysia
qube

elysia

Welcome to the world of masterbus processing!

The xmax is made for the masterbus. It is a powerful tool to enhance your mix. No matter which stereo bus you want to use xmax on, you always have full control over your dynamics.

The core of the xmax is its Class-A circuitry with internal Mid/Side processing, delivering pristine audio quality without compromising the natural integrity of your mix. The multiband compression - split into low, mid, and side bands - allows for detailed control of each frequency range, letting you shape your sound with precision.

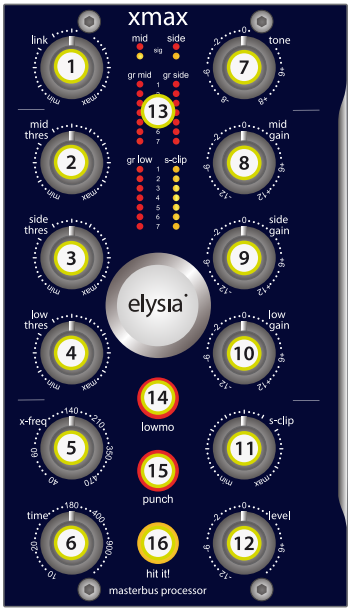
We're sure you'll be happy to know the xmax can be your perfect partner in the studio, your rehearsal space, live in stage or for sessions on the go.

For tips and tricks on how to get the most out of your xmax, you can also visit the elysia **YouTube channel.**

Index

(Tip: Click any page number to jump directly to that page.)

Controls



1 Link

Links the control voltages of each compressor band . You can go from independent to full link. When in full link, the xmax acts more like a classic stereo VCA compressor. The band with the most energy takes over the control voltage of the other 2 bands. You can control which of them should be the master band with the individual thresholds.

Example: In most cases, the low band has the most energy. If you want the mid band to be the master, just turn down the low threshold and increase the mid band threshold until you reach the desired compression.

2 Mid Threshold

The operating point of the mid band compressor. If the input level exceeds the value set with this controller, the compression process will start. You can evaluate the gain reduction on the corresponding **gr mid** metering (13).

3 Side Threhold

The operating point of the side band compressor. If the input level exceeds the value set with this controller, the compression process will start. You can evaluate the gain reduction on the corresponding **gr side** metering (13).

4 Low Threshold

The operating point of the low band compressor. If the input level exceeds the value set with this controller, the compression process will start. You can evaluate the gain reduction on the corresponding **gr low** metering (13).

5 Crossover Frequency (x-freq) (page 9)

Set the crossover frequency between the low and mid bands. The range can be set from 40Hz to 470 Hz.

6 Release Control (time)

The return phase of all three compressors. It controls the period of time between the input signal falling below the threshold and the xmax's return to unity gain.

7 High Shelf Equalizer (tone) (page 10)

A versatile tool for adjusting the high-frequency content of the audio signal, making it brighter or smoother depending on your needs. The controller determines the amount of cut (turn left) or boost (turn right).

8 Mid Gain

The make-up gain of the **mid band** of the xmax. This controller compensates for the loss in gain caused by the **mid band's** compression process. It can also be used as an EQ.

9 Side Gain

The make-up gain of the **side band** of the xmax. This controller compensates for the loss in gain caused by the **side band's** compression process. It also can be used as a **stereo widener** to add more dimension in your mix.

10 Low Gain
The make-up gain of the **low band** of the xmax. This controller compensates for the loss in gain caused by the **low band's** compression process. It can also be used as a low shelf EQ.

11 Soft Clip Limiter (s-clip) (page 12)
The Soft Clipper was designed to limit short, loud transients to prevent subsequent A/D converters from clipping. However, the circuit does not behave like a classic brick wall limiter, but more like an analog tape machine driven into saturation: it rounds the peaks instead of making hard cuts. You can see the amount of peak reduction at the corresponding s-clip meter.

12 Level
The master output of the xmax. The control offers up to +/- 12 dB of amplification/reduction to set the output level for the following devices.

13 Metering
The display for the gain reduction of the mid, low and side bands as well as the soft clip limiter peak reduction. Shows the amount of compression and peack reduction measured in dB as an optical support for the acoustic events.

14 Low Fequency Mono Maker (lowmo) (page 11)
A high-pass filter affecting only the side band, filtering the low frequencies below 150Hz (LED red: active).

15 Increased Compressor Ratio (punch)
A higher ratio (1:1.45 to 1:2.55) for all compressor bands (LED red: active).

16 Hit it!
Activates the xmax (LED yellow) or deactivates (LED white) it with a hardwire bypass (Meterings remain active). In deactivated state, the input is directly routed to the output by a hardwire bypass.

Getting started

1. Start with the tresholds

Adjust the low, mid, and side thresholds to set the desired compression levels. Using the link controller, you can choose whether to apply compression to individual bands (multiband compression) or link them together for a stereo VCA-style compressor behavior.

2. Watch the meters

In addition to listening, the metering can help guide your decisions regarding the amount of compression applied to each band.

3. Adjust the release and crossover frequency

Decide on the crossover frequency between the low and mid bands to define the point at which the signal is split. This allows you to control how the low band responds to the lower frequency range, giving you more precise control over the tonal balance and dynamics of the sound in this frequency area.

4. Set the corresponding makeup gains

The compression reduces the individual band's level. With the makeup gains you can compensate for the loss of levels. You can also use it as an equalizer for low, mid and side band to add character to your mixes.

5. Reduce signal peaks

If you experience frequent signal peaks in your mix, you can limit short, loud transients to prevent subsequent A/D converters from clipping. This allows you to increase the overall loudness of your mix by boosting the makeup gains and/or adjusting the level control.

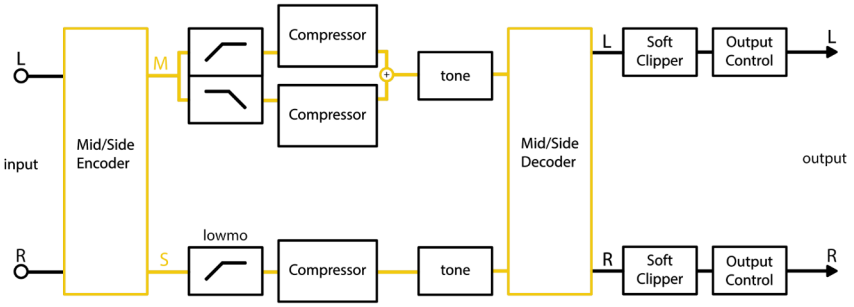
6. Add a bit of air

The high-shelf equalizer is ideal for shaping the overall tonal balance of a mix, giving it more presence or smoothing out excess brightness.

7. Adjust the output level

Watch your AD converter's input and adjust the level controller to get an appropiate input level to your DAW or other devices on your masterbus.

Signal Flow



The xmax processes audio using Mid/Side (M/S) encoding, allowing precise control over dynamics, tone, and stereo imaging.

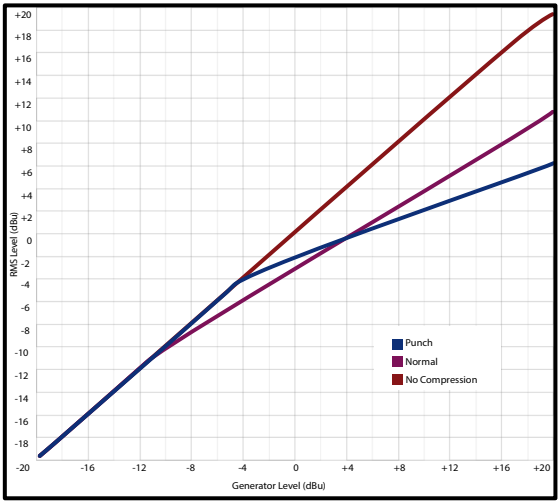
A stereo input (Left/Right) is converted into Mid (M) and Side (S) signals. The Mid signal represents the sum of both channels, containing center-panned elements, while the Side signal captures the difference, determining stereo width.

The Mid and Side signals are processed separately. The Mid signal passes through a low-frequency filter to control the low band and a high-frequency filter to control the mid band. The Side signal includes a low-frequency control filter ("lowmo") to reduce unwanted stereo width in the bass range. Independent compressors shape the dynamics of all three signals without affecting the overall stereo balance. The tone control enhances character and clarity.

After processing, the signals are decoded into a stereo signal . The final output stage includes a soft clipper to prevent peaks and ensure smooth limiting, followed by an output control for final level adjustment.

This unique processing chain ensures balanced dynamics, refined tone, and controlled stereo imaging for a finalized masterbus sound.

Compression (Punch)

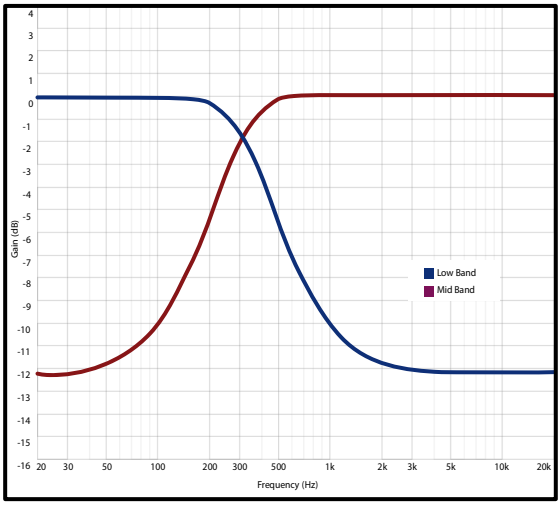


The xmax features a flexible and musical multiband compression designed to deliver both smooth dynamic control and punchy impact where needed. With two distinct compression curves for all three compressors (low, mid and side), it adapts effortlessly to a wide range of material. The default ratio of 1:1.45 provides gentle, transparent compression—ideal for full mixes without introducing obvious pumping or squashing. For more pronounced control, the punch mode engages a 1:2.55 ratio, bringing greater intensity and energy, perfect for drums, bass or anything that needs to hit a little harder.

All bands have a fixed attack time of 10 milliseconds, carefully chosen to preserve the natural transients of your signal while still offering effective compression across the frequency bands. However, when the gain reduction reaches 8 dB or more Auto Fast automatically shortens the attack time for fast and loud transients, preventing distortion and preserving clarity in even the most dynamic material.

It then returns to its original 10ms setting. Auto Fast allows the compressors to be fast when needed.

Crossover Frequency (x-freq)

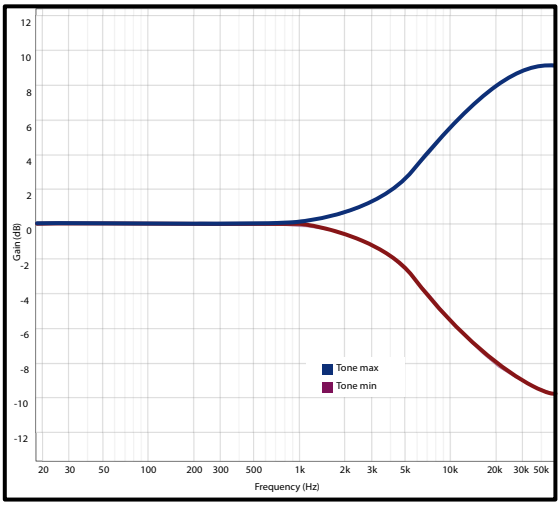


Set the crossover frequency between the low and mid bands of the xmax. This control defines how the frequency spectrum is split, determining which content is processed by the low band and which is passed to the mid band.

Operating in a range from 40 Hz to 470 Hz, it allows you to fine-tune the boundary between low-end and midrange processing. The diagram shows the crossover point with completely cut bands.

Example: A lower crossover point focuses the low band on compressing more into the sub and bass region, while a higher setting shifts more of the low-mid content into the low band, affecting how the dynamics of kick drums, basslines, synths and other low-frequency elements are shaped.

Tone

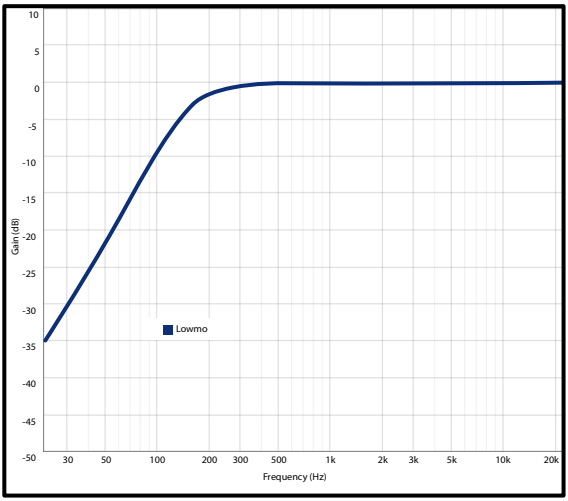


Tone is a high-shelf filter that allows you to boost or cut high frequencies across the full-range signal path of the xmax. Designed for smooth, musical shaping, it provides intuitive control over the brightness or softness of your overall sound and adds a little bit of air to your mix.

The Tone knob ranges from -8 dB (cut) to +8 dB (boost), with a shelving frequency optimized for natural-sounding adjustments. The filter is subtle yet effective, making it useful both for mixing and mastering.

Example: If you want to enhance presence and articulation in vocals, synths, guitars or full mixes, or tame aggressive transients or harsh top-end content you can quickly adjust the tonal balance without reaching for an external EQ.

Lowmo



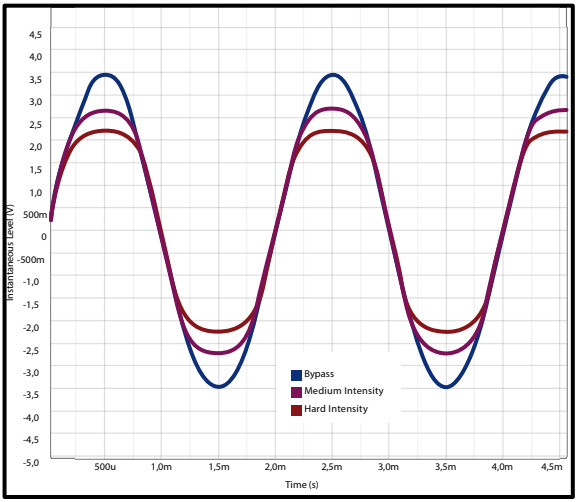
The lowmo feature engages a high-pass filter (12dB/octave) that is applied exclusively to the side (S) band. This filtering occurs before the signal enters the compression stage, ensuring greater precision and control in the stereo image without affecting the mono (low & mid) bands.

Typical use cases include enhancing mono compatibility by reducing unnecessary low-frequency energy in the sides, improving mix clarity and spatial definition or tightening up bass response while maintaining a wide, open top-end image.

The lowmo feature may be toggled on or off, depending on whether high-pass filtering of the side band is desired.

Example: Use lowmo when working with complex low-end material like bass-heavy synths, kicks, or live recordings where stereo bass content can introduce phase issues.

Soft Clip Limiter

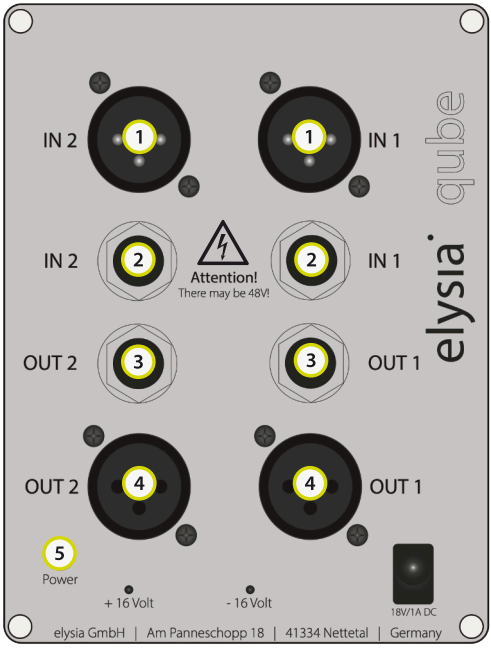


If the xmax is the last unit in the signal path before the A/D converter, it is only once that the setting of the Soft Clip limiter has to be adapted to the converter. It is best to use a fast, sample-accurate PPM meter to find the right setting, because it is an accurate method of benchmarking the resulting change in level.

The soft clip metering can be used to see the amount of limiting. Be careful with the amount of limiting, as noticeable distortion appears if you drive this circuit too hard. Particularly with regard to acoustic and classical music, this feature should be used with care and moderate settings only.

Connectors (elysia xmax)

1. **Audio inputs (XLR jack)**
2. **Audio inputs (¼" TRS phone jack)**
3. **Audio outputs (¼" TRS phone jack)**
4. **Audio outputs (XLR jack)**
5. **Power switch**



Made for Stereo operation only: Connect both inputs to either the XLR or the TRS inputs labeled **IN 1 & IN 2**. The TRS inputs will be prefered by the unit, if you connect to both stereo inputs (TRS and XLR) at the same time.

Stereo Outputs: Connect your interface or following devices to **OUT 1 & OUT 2**. You can use all of the two stereo outputs (TRS and XLR) at the same time.

Inputs			
Jack balanced:	**Sleeve:** ground	**Tip:** hot (+)	**Ring:** cold (-)
Jack unbalanced:	**Sleeve:** ground	**Tip:** hot (+)	**Ring:** ground
Outputs			
XLR balanced:	**Pin 1:** ground	**Pin 2:** hot (+)	**Pin 3:** ground
XLR unbalanced:	**Pin 1:** ground	**Pin 2:** hot (+)	**Pin 3:** idle
Jack balanced:	**Sleeve:** ground	**Tip:** hot (+)	**Ring:** ground

Precautions

WARNING: High Voltage

- The xpector qube must be connected to ground.
- Do not use a damaged power cord.
- Never place containers with liquid on the rack.
- Do not expose this device to rain or moisture.
- Do not use this device near water.
- Refer service to qualified service staff only.

CAUTION: Temperature

- Surfaces of the device may become hot during operation.
- Do not install this device near any heat source such as radiators, stoves or other heat sources.

CAUTION: Connecting & Mounting

- Never connect to the output of a power amplifier.
- Do not connect mono jacks for all of the headphone outputs
- Do not apply extensive force when installing this device.
- Use the device according to this manual only.

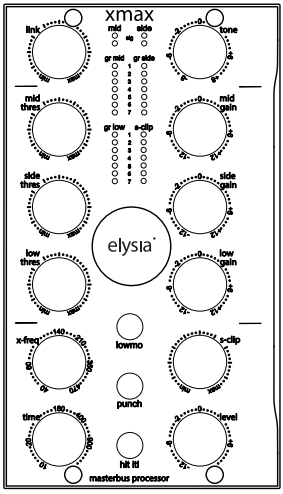
CAUTION: Humidity

- If this device is moved from a cold place to a warm room, condensation can occur inside the device. To avoid damaging the unit please allow it to reach room temperature before switching it on.

Recall Sheet

elysia xmax

Version:

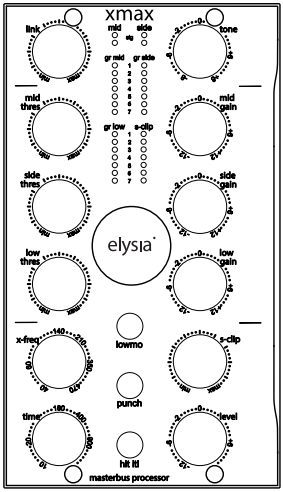


Notes:

Date:

Engineer:

Version:



Notes:

Project/Song:

You can also download the recall sheet at: www.elysia.com/downloads

Technical Details

Frequency response:	< 10Hz – 180kHz (-3dB)
THD+N @ 0 dBu, 20 Hz – 22 kHz:	0,01%
Noise floor, 20 Hz – 20 kHz (A-weighted):	-91,3dBu
Dynamic range, 20 Hz – 22 kHz:	112 dB
Maximum input level:	+21 dBu
Maximum output level:	+22dBu
Input impedance:	20 kOhm
Output impedance:	68 Ohm
Weight:	3,17lbs/1,46 kg
Power consumption:	9 Watts

CE Conformity

CE

elysia GmbH, Am Panneschopp 18, 41334 Nettetal, Germany, declares with sole responsibility that this product complies with the following norms and directives:

- 2006/95/EG Low Voltage Directive (formerly 73/23/EWG or 93/68/EWG)
- 89/336/EWG EMC (Electromagnetic Compatibility) Directive
- DIN EN 55103-1 EMC of audio equipment - Emission
- DIN EN 55103-2 EMC of audio equipment - Immunity

This declaration becomes invalid by any unapproved modification of the device.

Nettetal, 01.04.2025 - Ruben Tilgner

Warranty Info

The xmax is covered by a limited warranty for a period of 2 years against defects in parts and labor from the date of purchase. Natural wear is not covered by this warranty. Repairs or replacements will not extend the warranty period.

The warranty is given to the original purchaser only and is not transferable. elysia will only give warranty on products purchased through authorized elysia dealers. The warranty will only be valid in the country of the original purchase unless otherwise pre-authorized by elysia.

All warranties become void when the product has been damaged by misuse, accident, neglect, modification, tampering or unauthorized alteration by anyone other than elysia authorized service personnel.

The warrantor assumes no liability for property damage or any other incidental or consequential damage whatsoever which may result from failure of this product. Any and all warrantees of merchantability and fitness implied by law are limited to the duration of the expressed warranty.

elysia will not pay for express or overnight freight service or pay for shipments to locations outside Germany. All damages caused by transport are not covered by this warranty.

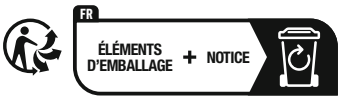
This warranty gives you specific legal rights and you may also have other rights which vary from state to state. Some of the above limitations may not apply to you.

Legal Info

The information in this document is subject to change without further notice and shall not be deemed as an obligation or warranty of any kind by the manufacturer. No warranties, express or implied, are made with regard to the quality, suitability or accuracy of this document.

The manufacturer reserves the right to change the contents of this document and/or the associated products at any time without the provision of prior notice. The manufacturer shall not be held liable for damages of any kind arising from the use, or the inability to use this product or its documentation.

This product is manufactured according to the 2002/95/EC directive. The purpose of this directive of the European Union is the Restriction of Hazardous Substances (RoHS) in electronic equipment in order to protect health and nature. Dispose separately!



elysia GmbH
Am Panneschopp 18
41334 Nettetal
Germany
info@elysia.com