

elysia[•]

mpressor





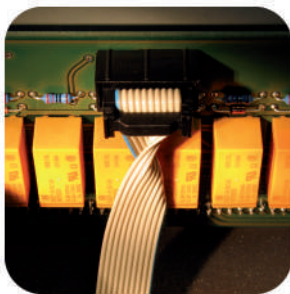
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This product is manufactured according to the 2002/95/EC directive. The purpose of this directive of the European Union is the Restriction of Hazardous Substances (RoHS) in electronic equipment in order to protect health and nature.

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WARNING: High Voltage

- Risk of electric shock.
- Do not open chassis.
- Refer service to qualified service staff only.
- Before connecting the device to the main power supply, check if the right voltage is selected.
- Replace fuse with the same type and value only.
- This device must be connected to ground.
- Do not use a damaged power cord.
- Never place containers with liquid, e.g. beverages or a vase, on the unit.
- Do not expose this device to rain or moisture.
- Do not use this device near water, e.g. swimming pool, bathtub or wet basement.



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.
- Always allow enough ventilation space around the unit for air circulation.
- Do not cover circulation vents.



CAUTION: Connecting & Mounting

- Never connect the output of a power amplifier to this device.
- Place the unit on a rigid board or fix it to an appropriate rack.
- 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 on.



CE Conformity

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, 01.09.2007 - Ruben Tilgner & Dominik Kläßen

Dear friend of audio culture,

First of all, we would like to thank you sincerely for choosing the mpressor as your new compression tool.

We believe this is a true step forward. Instead of a further copy of concepts that were invented several decades ago, you now have an absolutely contemporary tool for processing dynamics at your disposal. On top of the tried and tested standard features, this creative compressor provides several special functions that produce fat and freaky sounds with a punchy control behavior, extreme settings and colorations full of character.

Please take a little time to read this manual thoroughly, as it will help you to entirely understand the enormous potentials and to really push the envelope. We have paid great attention to practical experience and fast results, which is also the reason for reserving the explanation of the technological excesses realized in the mpressor to our website.

The "Basics" chapter contains essential information for the fundamental comprehension and quick use of the specific functions and modules. After this, a couple of "Scenarios" are introduced in order to illuminate just some of the versatile applications of your new favorite compressor. If you want to go into further details, please have a look at the "Reference" chapter which elaborates on every particular parameter.

If you have further questions or comments, please do not hesitate to contact us – we will enjoy being of your service. But for now, it's time to wish you lots of fun and pure audio pleasure with your mpressor.

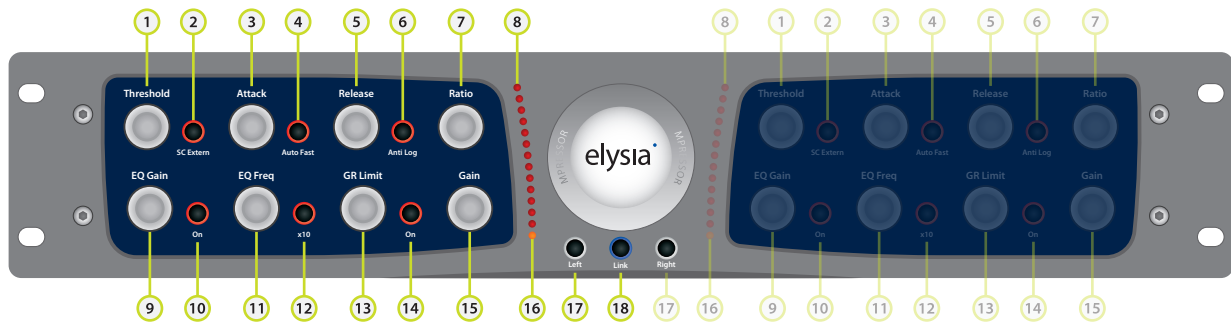
Use the Force...

the elysians

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Controls

Both channels of the mpressor are absolutely identical regarding their electronic design. Therefore both sides of the front panel have exactly the same controls and switches. Continuable information on the specific functions can be found on the pages in brackets.

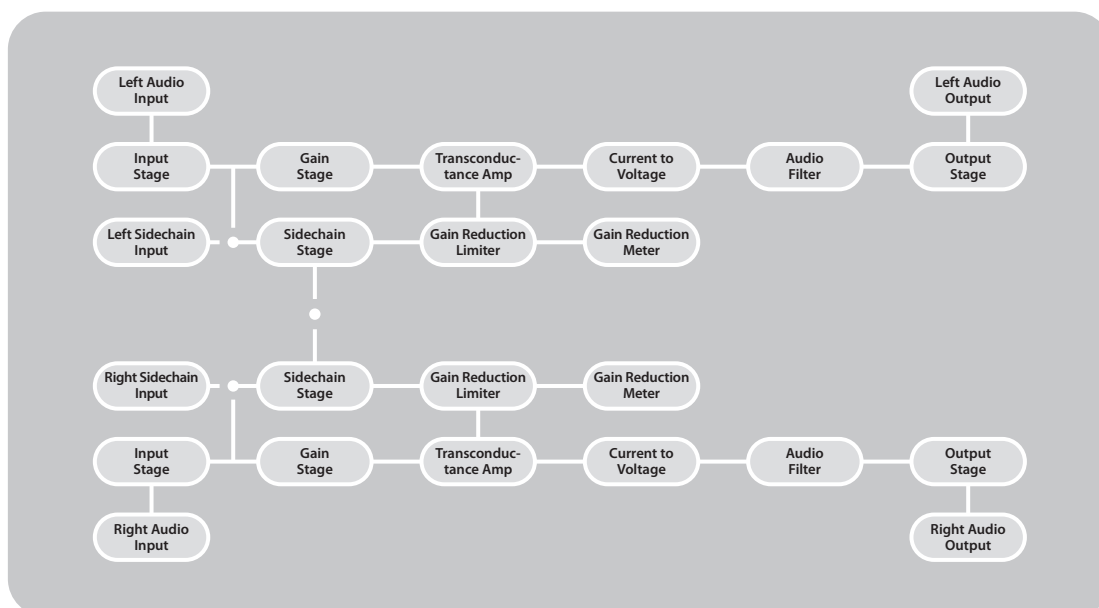


- ① **Threshold:** the operating point of the compressor. If the input level exceeds the value set with this controller, the compression process will start. (p. 18)
- ② **SC Extrem:** an additional input for the sidechain. If this function is active, a signal that is fed into the corresponding input connector controls the compression process. (p. 9)
- ③ **Attack:** the transient response of the compressor. It determines the time the mpressor needs to reach 10 dB of gain reduction. (p. 19)
- ④ **Auto Fast:** a semi-automation. This function shortens the attack time automatically on fast and loud signal impulses. (pp. 10, 19)
- ⑤ **Release:** the return phase of the compressor. It controls the period of time between when the input signal falls below the threshold and the mpressor's return to unity gain. (p. 20)
- ⑥ **Anti Log:** an alternative characteristic of the release curve. This function switches from a linear to an antilogarithmic progression. (pp. 10, 20)
- ⑦ **Ratio:** the relation between the input level and the output level. As a specialty of the mpressor, even negative ratios can be set here. (p. 21)
- ⑧ **Gain Reduction:** the display for the gain reduction. Shows the amount of compression measured in dB as an optical support for the acoustic events. (p. 9)
- ⑨ **EQ Gain:** the characteristic of the Niveau Filter. Between the mid and fully counter-clockwise position, bass is boosted and treble is cut (vice versa in the other direction). (pp. 11, 22)
- ⑩ **On:** activates the Niveau Filter. In the signal path, this special EQ is placed after the compressor section, thus it will not influence this section's behavior. (p. 11)

- 11 **EQ Freq:** the center frequency of the Niveau Filter. Around this reference point, bass is boosted and treble is cut or vice versa. (pp. 11, 21)
- 12 **x10:** shifts the frequency range of the Niveau Filter. The printed values from 26 Hz to 2.2 kHz are multiplied by 10 to 260 Hz and 22 kHz. (pp. 11, 21)
- 13 **GR Limit:** margins the control voltage. This innovative limiter is not placed in the audio path as usual, but in the control circuit of the compressor. (pp. 11, 23)
- 14 **On:** activates the Gain Reduction Limiter. Similar to the other functions, this module is switched into the signal path via relay. (pp. 11, 23)
- 15 **Gain:** the 'make up gain'. In the mpressor, amplification already takes place in the input stage, thus the complete circuitry can be driven harder on purpose. (p. 18)
- 16 **GRL:** indicates Gain Reduction Limiter activity. In link mode, the indicator LEDs of both channels always light up simultaneously. (pp. 11, 23)
- 17 **Left/Right:** activates the respective channel of the compressor. In deactivated state, the input is directly routed to the output by a hardwire bypass. (p. 9)
- 18 **Link:** both channels can be operated in combination with the left control panel as master. *Note:* EQ sections and gain stages will not be linked in this mode! (p. 9)

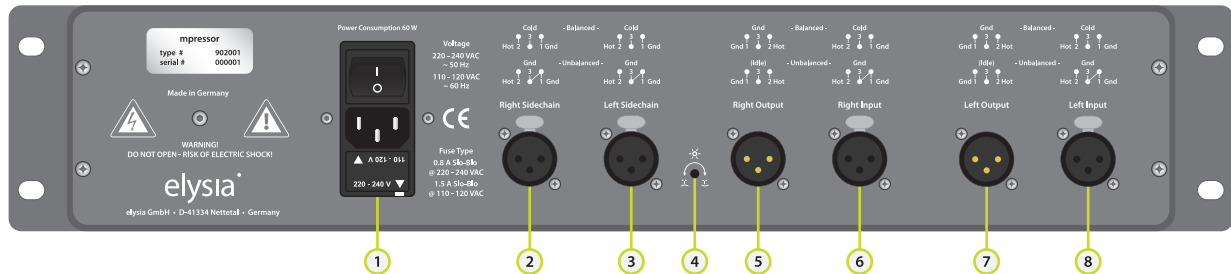
Signal Flowchart

The schematic shows the signal flow from the input through the specific modules to the output. External sidechain, link function, Gain Reduction Limiter and Niveau Filter can be optionally switched into the signal path via relays. The compression stages continuously work in feed forward mode with a hard knee characteristic.



Connectors

Please pay attention to operate the mpressor with the correct voltage setting for your country and the proper pin assignments on the XLR connectors.



1 Mains module

This module combines the line cord connector, the on/off switch, the fuse holder with integrated 230/115 VAC voltage selector and a line filter for providing the transformer with clean current.



WARNING: High voltage

Make sure to disconnect the line cord before replacing eventually blown fuses or changing the operating voltage of the unit! In order to change the operating voltage, the fuse holder has to be taken out and re-inserted so that the desired voltage can be read correctly (and is not standing upside down). *Note:* Some export versions have a fixed voltage of e.g. 100 or 115 VAC and cannot operate at 230 VAC.



WARNING: Fuses

Always make sure to use the correct fuses for the chosen voltage: **230 VAC 0.8 A Slo-Blo** or **115 VAC 1.6 A Slo-Blo**. Incorrect or missing fuses are dangerous safety hazards for both the unit and yourself!

2 Sidechain inputs (+4 dBu)

Pin assignment balanced:

Pin assignment unbalanced:



1 ground

2 hot (+)

3 cold (-)

1 ground

2 hot (+)

3 ground

5 Audio outputs (+4 dBu)

Pin assignment balanced:

Pin assignment unbalanced:



1 ground

2 hot (+)

3 ground

1 ground

2 hot (+)

3 idle

6 Audio inputs (+4 dBu)

Pin assignment balanced:

Pin assignment unbalanced:



1 ground

2 hot (+)

3 cold (-)

1 ground

2 hot (+)

3 ground

Note: If a device that is placed before the mpressor in the signal chain has an unbalanced output stage, a complete mute can eventually occur when the compressor is activated. If this happens, please follow the advice on page 24.

4 Brightness trimmer

You can use a small screwdriver to adjust the light intensity of the front panel logo disc.

Link Mode

In link mode, both channels of the mpressor can be coupled and operated with the controllers and switches of the left control panel. Please consider the following notes:



Both sides of the mpressor utilize exactly identical electronic modules that could even be interchanged with each other in principle. This grants a high equality of signal processing in the left and right channel, which is especially important in stereo mode. Another result is the excellent isolation of both channels from each other, and the audio quality will not decline because there are no lossy to and fro signal routings in the circuitry.

Note: As an effect of this design approach, only the *control functions* of the compressor (marked green in the figure) are combined in link mode. The left control panel becomes the master, that is the settings for the left channel are transferred to the right channel – therefore the settings of the particular controllers on the right side are not relevant in link mode.

Note: At the same time this means that the *audio functions* of the compressor (marked orange) are not combined. In practice you have to pay attention to set the controllers and switches for both EQ and gain sections identically. Otherwise an audible drift between the left and the right channel might occur.

External Sidechain

If the SC Extern switch is active, compression will not be controlled by the signals from the regular audio inputs anymore, but by different audio signals which are fed into the additional sidechain input connectors.

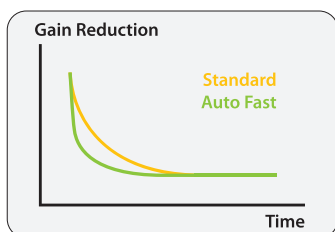
If a duplicate of the input signal is processed with an equalizer and then fed into the sidechain input, for example, the result will be frequency-dependent compression. Another example is to send the bass drum of a drum machine into the sidechain input in order to achieve nice groovy compression that is pumping in time with the music.

The external sidechain inputs are equipped with a high pass filter that has its cut-off frequency at 80 Hz with a slew rate of 6 dB per octave. This has been done in order to reduce the influence of the low frequencies on overall compression by a certain amount in order to keep the effect as balanced as possible.

Auto Fast

The attack time parameter is a very crucial factor for the control behavior of a compressor. Therefore choosing the right setting is very important, but depending on the dynamic progress of the source material this can be a difficult task – no matter if you are processing single channels or complete mixes.

If a very short time is chosen, the compressor is able to catch the short peaks, but on the other hand the sustaining signal will also be processed, which might result in audible distortion. Longer attack settings reduce distortion significantly, but then the compressor is too slow for fast impulses.

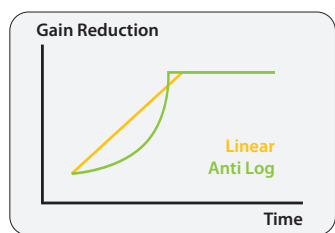


This is where the Auto Fast function comes into play. For example, if you set the attack to 80 ms and then engage the Auto Fast mode, the attack time will be shortened automatically on fast and loud signal impulses. The compressor reduces the signal quickly and prevents it from slipping through.

Then the attack time directly and automatically returns to its original setting. In Auto Fast mode the compressor can be very fast, but only when it is really needed. This function influences the attack parameter on short and loud impulses only; in all other cases the original setting of the controller is given priority.

Anti Log

The release parameter, on the other hand, has a strong influence on the character of the compression being obvious or unobtrusive to the ear. As a general rule, linear or logarithmic release curves will be employed if a discreet performance of the compressor is required. It is characteristic of a logarithmic release that the time constant shortens when the gain reduction raises. The advantage of this is that short and loud peaks (e.g. drums) have a fast release time, while the remaining material is processed with a slower release time.



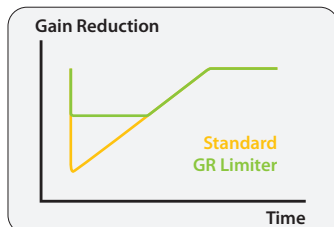
But if intentionally striking and creative compression as well as producing new and interesting sounds are the sought-after goals, it definitely makes sense to turn the established approach upside down. For this reason, you can switch the release curve of the compressor from linear to antilogarithmic.

Compared to the logarithmic release curve, the effect of the Anti Log option behaves just the other way round: When the threshold point is passed and compression starts, the release time is longer in the beginning. However, when the input signal starts to decline, the release time becomes faster.

A special circuitry makes the process independent from the absolute amount of gain reduction. No matter if the compressor reduces 10, 15 or 20 dB, the curve will always stay the same at the start and will only become faster at the end. Consequently, many exceptional compression effects can be created just by pushing a button.

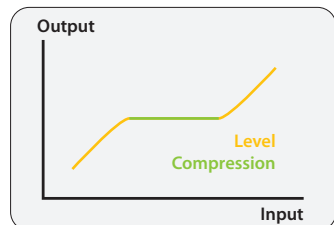
Gain Reduction Limiter

A specialty of the mpessor is the Gain Reduction Limiter for the control voltage of the compressor. This limiter is not placed in the audio path where you would usually find it, but in the control path of the compressor. When it is activated, it limits the control voltage according to the setting of the controller. This means: No matter how high the input level might become – the amount of gain reduction will never exceed the value which is set with the GR Limit controller.



For comparison, just imagine a fader on a mixing console with your hand moving the fader to 'play compressor'. If now the fader was limited by a piece of duct tape at 10 dB, for example, it could only reduce the signal up to this value. If the input level dropped below this limit, the fader would be moved up correspondingly.

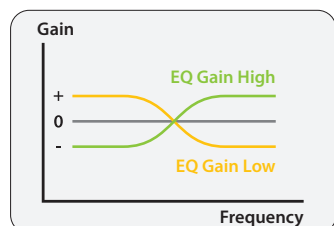
However, if the input signal got even louder, the fader could not be moved down any further because of the duct tape limit, and then the output signal would become louder again in correspondence with the input signal.



Loud parts in an arrangement can keep their dynamics, as they will not be compressed beyond the limit of the Gain Reduction Limiter. Some very nice special effects like ducking or upward compression can be achieved with it easily by only reducing the quieter parts without changing the original dynamics at the same time.

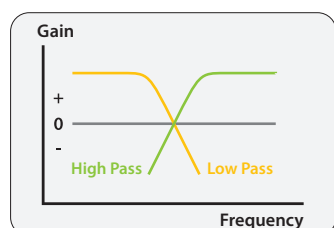
Niveau Filter

This filter is a specialist in changing the overall sonic character of a track with ease. It features two controllers per channel and is capable of producing convincing results flexibly in no time at all. Whenever a classic shelving filter would be too limited and a fully parametric filter would be too much, the Niveau Filter is the perfect tool.



Its main function is to change the proportions between high and low frequencies. The principle is quite similar to a pair of scales: Dependent on the gain setting around a variable center frequency, the high frequencies are boosted whereas the low frequencies are attenuated (or vice versa).

By simultaneously boosting and cutting the selected frequency areas, it is much easier to influence the character of a track (,bright' vs. ,dark') compared to using other types of equalizers. The center frequency can be shifted continuously between 26 Hz and 2.2 kHz or between 260 Hz and 22 kHz respectively (when the x10 switch is activated).



The characteristics of the filter change in the extreme positions of the EQ Gain controller: the fully counter-clockwise setting will produce a low pass filter; fully clockwise position will result in a high pass filter. The overall level can drop quite noticeably then, but this can be corrected with the gain controller easily.

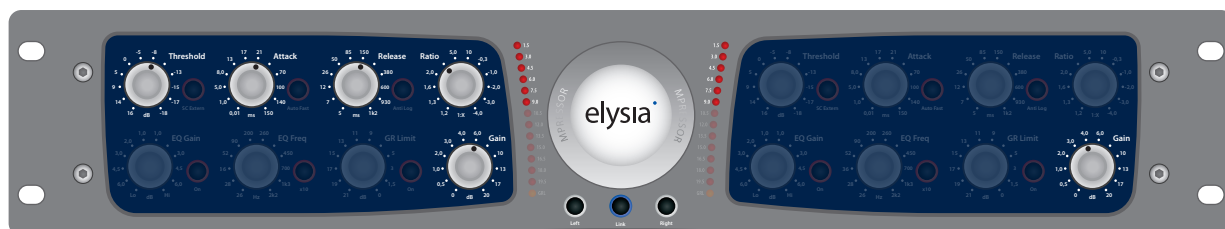


Standard Compression

Because of the well-balanced adjustment of its parameters, the mpressor is suited perfectly for many applications in everyday studio business. The settings shown in the above figure provide a good starting position for 'normal' compression jobs like vocals, choirs, guitars, drums, keyboards and so on.

Moderate ratios from 1:2 to 1:5 and release times around 300 ms make a good basis for further parameter variations. The threshold controller can now be used to adjust the desired amount of gain reduction. Depending on the source material, the EQ section can be used additionally with great benefit.

It definitely pays off to spend some time on getting to know this interesting feature of the mpressor and what it can do for your sound. The Gain Reduction Limiters offer completely new possibilities, too, and therefore should be given a try soon by all means.



Big Drums

In this case, a complete drum mix is processed with the mpressor. The intensity of audible transients is determined by the attack time. If this parameter is very short, only the first milliseconds of the signal will be emphasized, whereas longer settings will come closer to its original structure.

The release controller can now be used to adjust the 'loudness' (shorter settings produce louder signals), at which longer settings will also give you an influence on the groove of a track. If high ratios are applied, this effect will become more and more extreme. You could also use the GR Limiter additionally in order to reduce the maximum amount of reduction for very energetic drums.

As a result, the drums become very punchy – with beautiful attacks that can really shine in a mix. An increased amount of ambience is generated on top of it, resulting in a loud and massive sound.



Smashed Drums

If the drums are supposed to sound extremely compressed and loud, this setting can be used to limit almost the entire signal so that there is nearly no dynamics remaining. The Auto Fast function for the attack parameter makes sure that the mpessor works fast but undistorted, and fast release times of about 50 ms are responsible for the loudness.

The ratio controller is set to 1:10 which makes the mpessor act like a kind of fast brickwall limiter. The drums now sound as if they had been recorded with a focus on the room microphones: little transients, lots of ambience and long sustaining toms and cymbals.

If this signal is now routed to a separate fader of a console and then mixed to the unprocessed original, the result will be the typical parallel compression which is very popular for this kind of application.



Reverse Sounds

Because the mpessor also features negative ratios, you can perfectly use it to create weird really way-out effects: Signals sound like if they were played backwards and become louder in their progression. Very loud input signals are reduced by large amounts which creates the reverse effect.

The Auto Fast function for the attack parameter is used to perform the control process fast and free from distortion. The position of the release controller determines the traits the sound will get louder with. The Anti Log mode should also be tried on top of that, as it will even increase the intensity of the reverse effect.

A good balance of the threshold, release and ratio parameters is very important for this application. Settings like these result in the amount of gain reduction exceeding the 20 dB mark quite often, therefore adequate settings of the gain controller have to be made for compensation.



Transient Enhancer

A special task is to emphasize the transients at the beginning of a tone, chord and so on. The Gain Reduction Limiter is of special importance in this scenario. The chosen parameters result in a rather strong compression with quite fast release times and even negative ratios.

Without the limiter the signal would be compressed much too strongly; 10 to 15 dB of gain reduction would occur quite regularly in this case. But now the limiter comes into play by reducing maximum amount of gain reduction to 6 dB. If now the gain controller is also set to 6 dB, the signal will be boosted by 6 dB at its beginning and will then be held at 0 dB in its further course.

If for example an organ is processed this way, it sounds firmer as its transients receive an accentuation. And no matter if a single note or a full chord is played – the output level will always stay the same, so that the result does not sound like typical compression.



Groove Ducking

The external sidechain input can be used to achieve specific groovy effects. Here the sidechain is triggered by a rhythmical signal like a 4 beat bass drum. The audio path can carry any desired sounds which are then reduced in the rhythm of the bass drum and therefore start to groove in sync with that beat.

Especially the release parameter can be used to adapt the timing of the effect to the tempo of the song, whereas the Anti Log mode offers interesting variations. If, for example, a 16 beat HiHat is processed in this way, it will benefit from a nice vivid groove it will now move in.

Bass sounds can now receive a stronger accentuation, as the ducking effect creates more space in the mix and the focus is shifted more onto the 4 beat bass drum. If the mpressor is inserted into the subgroup of a mixing console, you will also be able to trigger an arrangement of various instruments etc. via the external sidechain.



Negative Gating

An interesting variant of the groove ducking technique is negative gating that is based on faster release times and uses the Anti Log mode. Higher ratios are also very typical for this process. If now a bass drum is fed into the external sidechain input as a trigger signal, for example, the compressor will reduce the audio signal by a significant amount, resulting in gain reduction values of 30 and 40 dB.

After the trigger signal has faded away, the gain reduction value is kept constant by the Anti Log function for a moment, after which it rebounds rapidly. This special envelope makes the effect almost sound like a gate – but with the difference that the signal is made quieter instead of being totally muted.

If you want the effect to be as stable as possible, please take care that the trigger signals have even attacks and levels.



Ducking FX

Using the mpessor in combination with effect units like reverb, delay or chorus will result in fascinating results. The important point in this case is that compression is applied after the signal has passed the effects processor. The external sidechain input, however, is fed with the original dry signal that is also fed into the input of the FX unit.

If a drum track is processed with a reverb, for example, the reverberation can be compressed extremely strong so that it will almost vanish in very loud parts at first. It sounds different than only compressing the reverberation without using the external sidechain, because now it depends on the dynamics of the original signal.

An electric piano which is processed with chorus and delay effects can benefit from this technique, too, as the chorus/delay effect will become more and more prominent while the played note decreases in volume. Here it is important that all effect units only send the pure effect signal (100 % wet) which is then mixed to the dry signal on a parallel track.

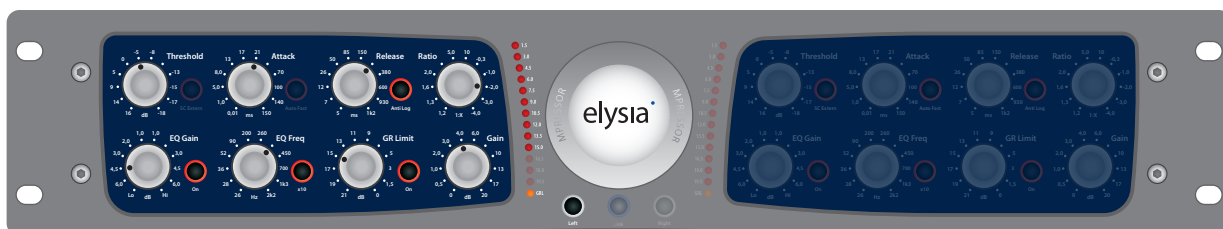


Distorted Compression

By using very fast time constants, the mpressor can also be abused to create special distortion sounds. To do so, set the attack controller to its minimum of 0.01 ms and the release time also to its fastest value of 5.0 ms.

Now the compressor becomes so fast that it compresses and twists almost every single wave form separately. The result sounds similar to a distortion unit, but without the usual drawback that the noise floor of the input signal is amplified.

If the Niveau Filter is used in its low pass position in addition, everything will start to sound in a wonderful LoFi style. Especially bass and drums are ideal instruments for being processed in this way.



Delay Loops

Delay and compressor in a loop – does that make any sense at all? Definitely yes, because this combination is a truly rich source for lots of crazy sounds! In this scenario, the mpressor is placed before a delay which is connected to an input of a mixing console. The feedback parameter of the delay has to be set to 0, because the feedback is generated with the aux send of the specific channel of the console.

If the gain controller of the compressor is now set in a way that the delay sound becomes louder with every repetition, it will finally fall into a feedback loop which is kept steady by the compressor. If the Niveau Filter is used in addition to bend the frequency response, very noisy, pumping and breathing sounds that keep changing continuously will be the result.

Very short delay times between 5 and 30 ms can even generate oscillating sounds that instantly remind of synthesizers. Turning the Niveau Filter controllers during this process results in a shift of the frequency response with each repetition of the delay.



Frequency Compression

The external sidechain also makes it possible to apply frequency dependent compression. This means that the compressor selectively reacts stronger or weaker to certain frequencies.

One of the most typical applications of this technique is de-essing: The input signal is muted to a parallel line before the mpessor and then fed into an equalizer that raises the S sounds and lowers all other frequency areas. This processed signal is then send into the external sidechain input of the compressor which will only react to strong S sounds as a result.

Depending on the settings of the EQ, it is also possible to use combinations of normal compression and de-essing. This can be achieved by only boosting the frequencies of the S sounds without cutting anything else. Another variant is to only lower the bass area on the external EQ so that these frequencies will not dominate the compression process so strongly anymore, which will result in an increase of overall loudness.



Mix Buss

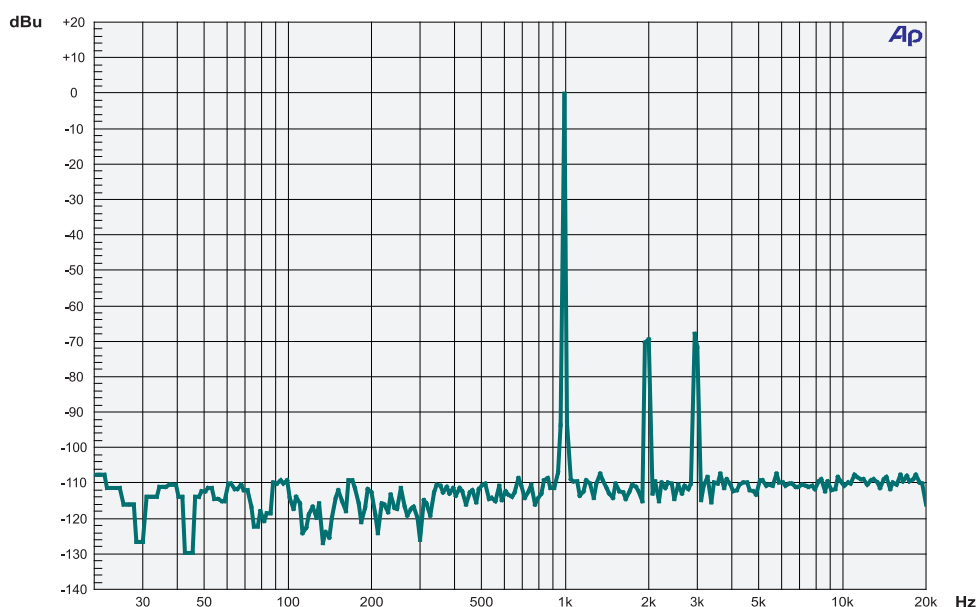
The mpessor also proves of value when used as a high class mix buss compressor, especially when it comes to the more vehement genres like rock and electronic music. If you use it straight on from the beginning of a mix, you will automatically adapt your mix to the sound this produces.

The proportions between the levels of the separate tracks will be attuned perfectly to the active compressor. This kind of mixing especially makes sense if the complete basic sound is supposed to differ from the 'standard' sound of other productions.

If you want a track to sound very groovy and pumping, for example, just mix the drums louder as usually so that they dominate the compression process. All other instruments which are quieter in the mix now groove in conformity with the drums and become very vivid thereby.

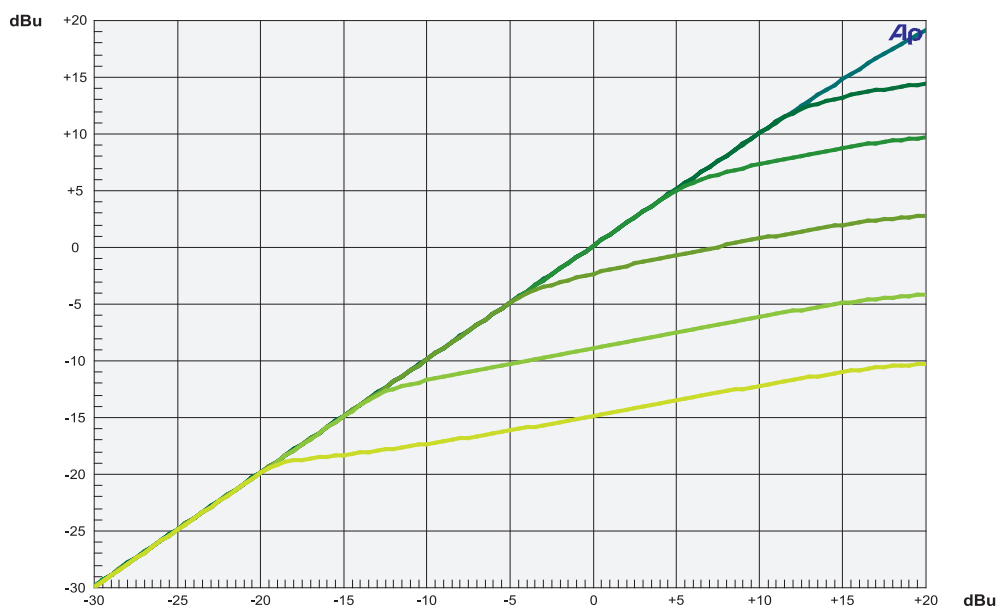
THD Analysis

This diagram shows the FFT spectrum with a sine wave of 1 kHz at 0 dBu. The additionally generated second and third harmonics at 2 kHz and 3 kHz which make the processed signals sound richer and more interesting become very obvious here. These harmonics are generated in the transconductance amplifier stages of the mpresor. Their amount is dependent on the input level: the higher it is, the more harmonics are produced. As the gain controller is placed directly in the input stage, it will also influence the intensity of added harmonics.



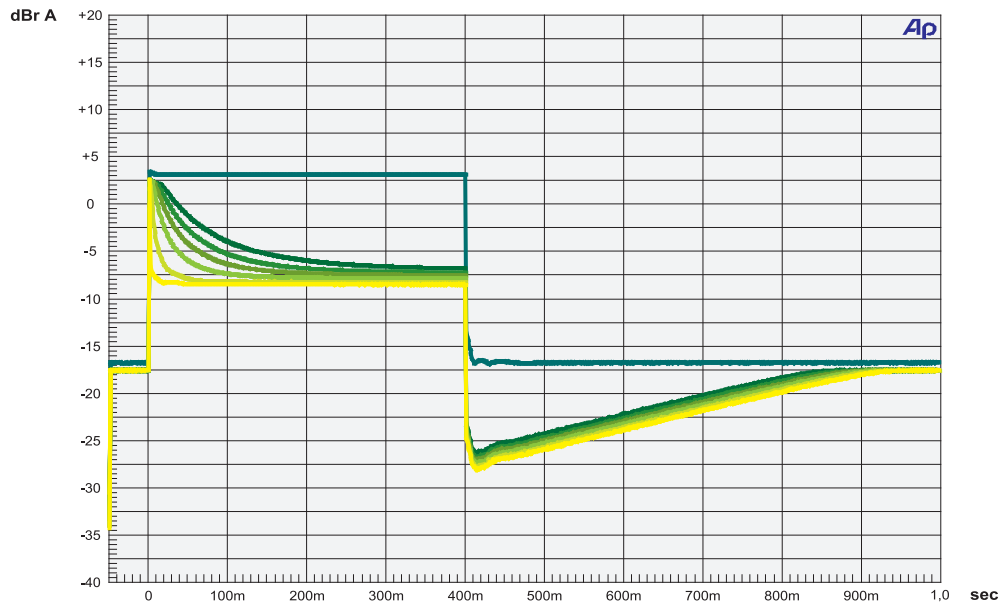
Threshold

The next figure shows a number of different threshold points. The settings of threshold and ratio should always be considered as a couple: If a high ratio is applied, the threshold will usually be in the lower range in order not to produce a too high amount of gain reduction. If lower ratio settings are chosen, though, the threshold will be turned more clockwise as a general rule. The complete control range covers a total of 34 dB, offering the complete variety from very sensitive processing up to the most extreme effect settings.



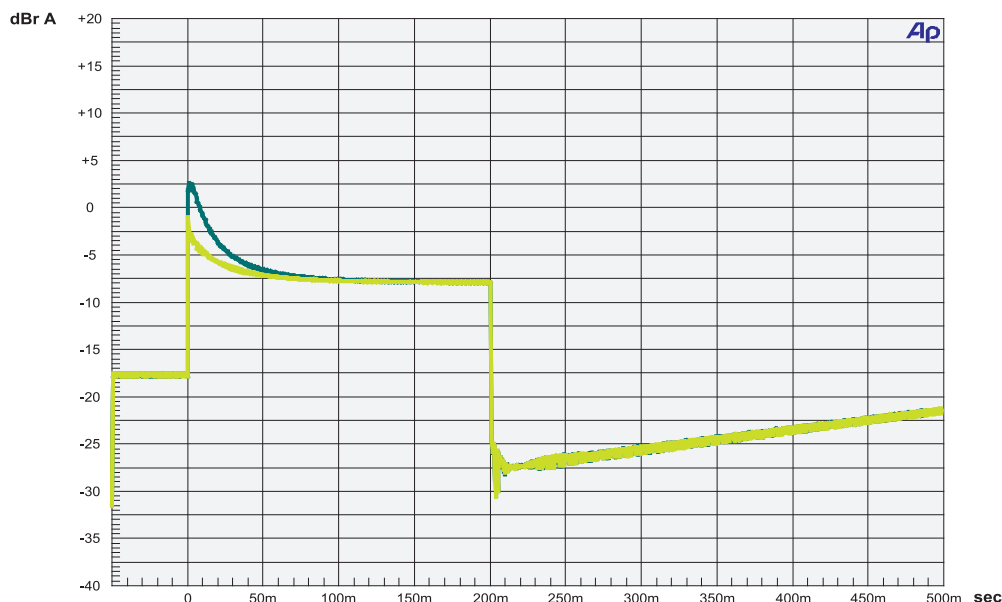
Attack

Here we see how a burst signal (a sine wave which is boosted by 20 dB for a period of 400 ms in this case) is used to demonstrate the effectiveness of the attack controller. The different curves show how fast the jump in level is reduced by 10 dB. When fast settings are applied, the reduction only needs a few milliseconds. Longer settings, on the other hand, do not only need a longer period of time, but also produce a smaller overall amount of decrease in level. Therefore fast attacks always produce higher amounts of gain reduction than longer ones.



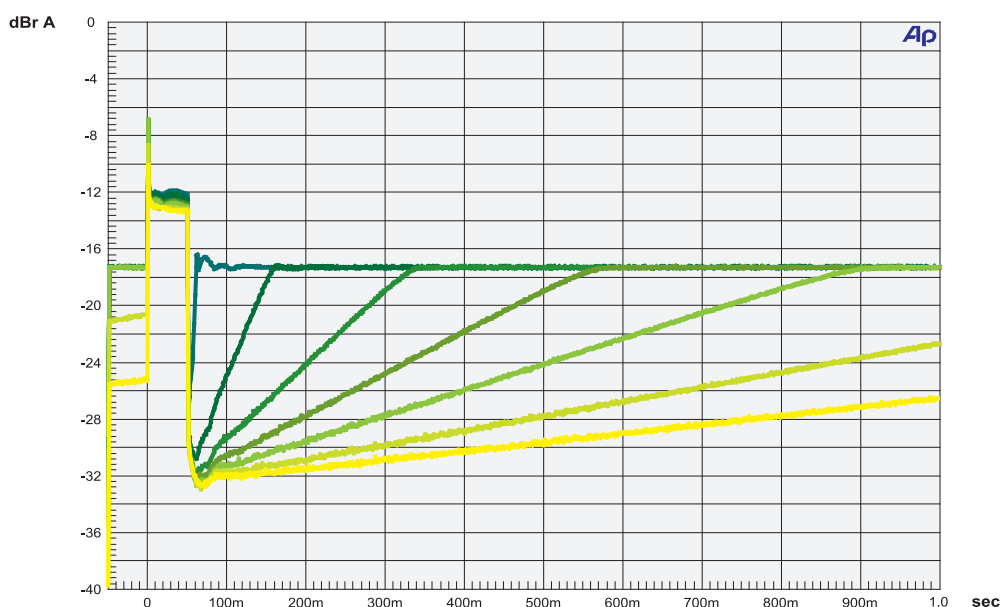
Auto Fast

Based on using a burst signal again, this diagram shows the comparison between a normal attack time of 200 ms (darker curve) and the attack characteristic with activated Auto Fast function (lighter curve). You can easily see how fast the circuit reacts, as even the first waves of the burst are already reduced by 3 dB. On top, the overall amount of gain reduction happens much faster then. *Note:* This function starts working at about -3 dB, because lesser amounts of gain reduction do not include sufficient changes in dynamics.



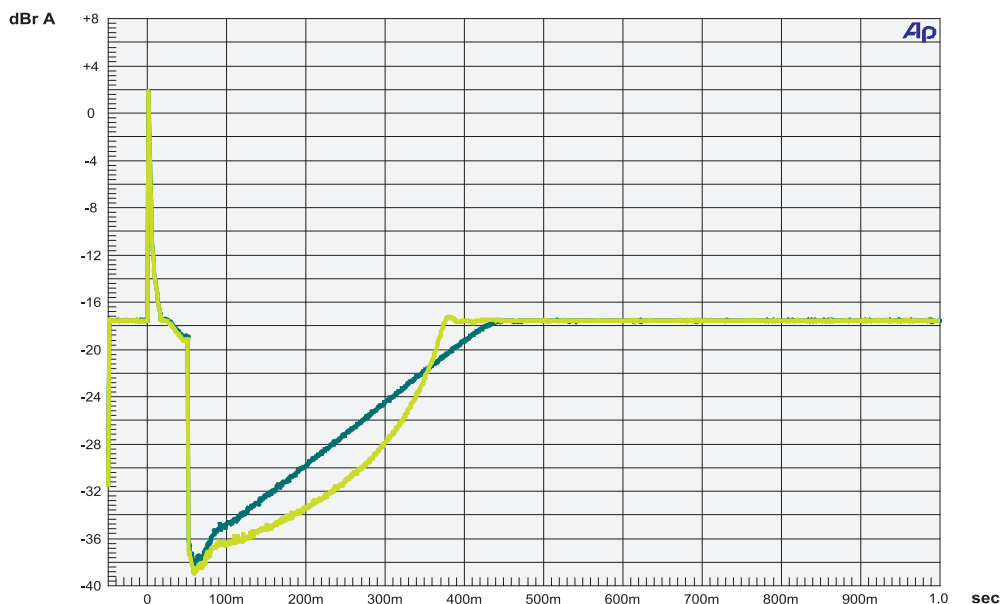
Release

This figure is based on a very fast attack time which produces -6 dB of gain reduction. The burst lasts for 50 ms and then follows the release phase with its time parameter set to different lengths. The linear characteristic of the release curve is easy to see here. Arising from the circuit used for this process, the attack time has to be added to the release time. The advantage of this is that in combination with long attack settings you can use even the fastest release settings without generating unwanted artifacts.



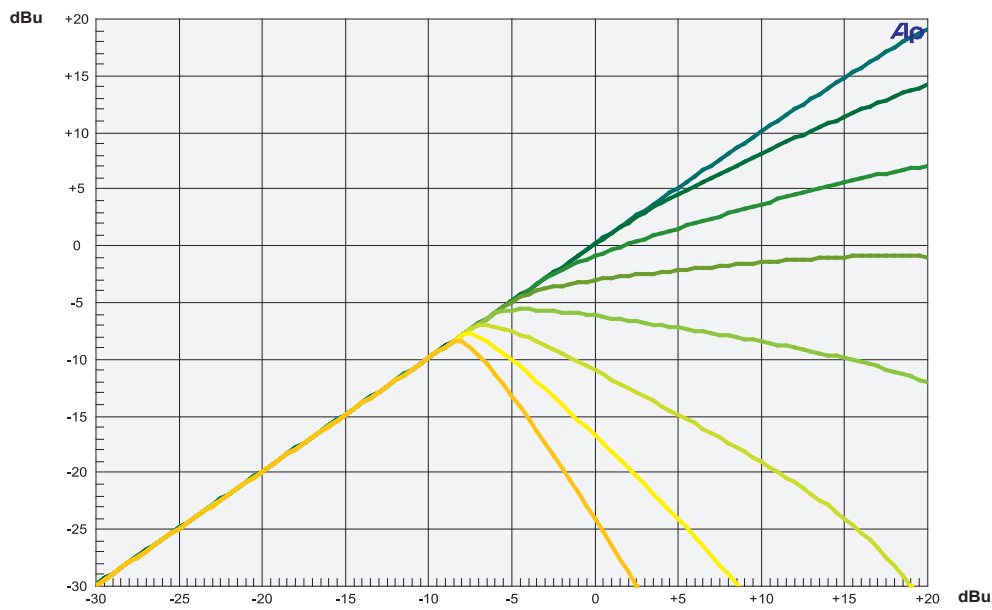
Anti Log

This diagram reveals the characteristics of the Anti Log function. The darker curve shows the normal linear release progress, which has a constant ratio of time per dB. In Anti Log mode, however, the release time is longer when the process starts and becomes shorter in the further progress. Please note that a certain amount of dynamics is needed in order to form this special curve in its complete shape: The change from deceleration to acceleration does not happen until an amount of around 10 dB of gain reduction is reached – and then you will start to really hear it ;-)



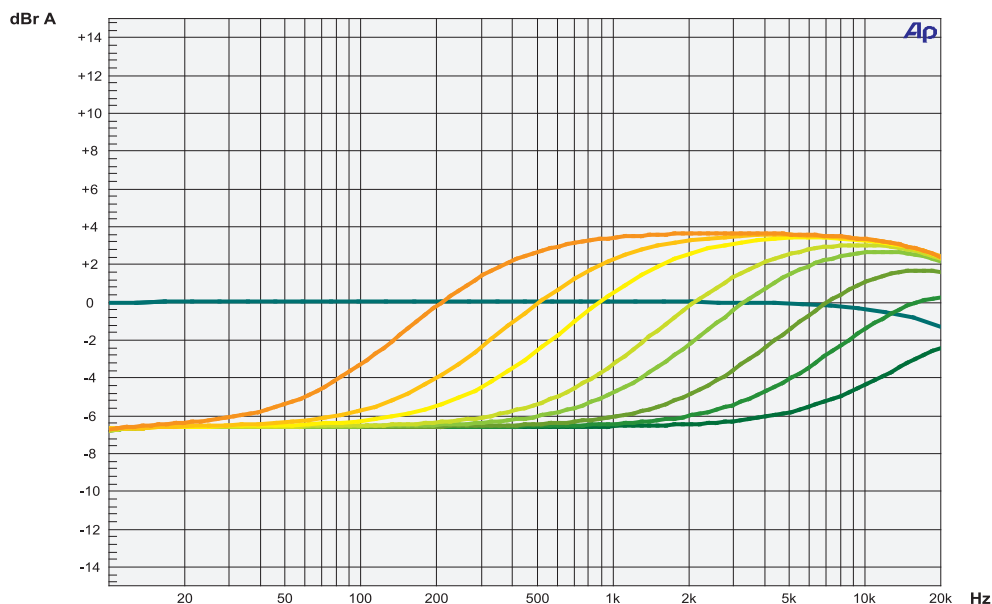
Ratio

The mpessor is a typical hard knee compressor, which can be seen in this diagram very obviously. Compression directly starts with the full adjusted ratio in the very moment the input signal passes the threshold point. Compared to a soft knee characteristic, this kind of compression is more on the noticeable and audible side. The figure also shows the negative ratios: The characteristic curve bends and returns back down. The louder the input signal becomes with a setting like that, the lower the output signal becomes – perfect for spacy compression effects.



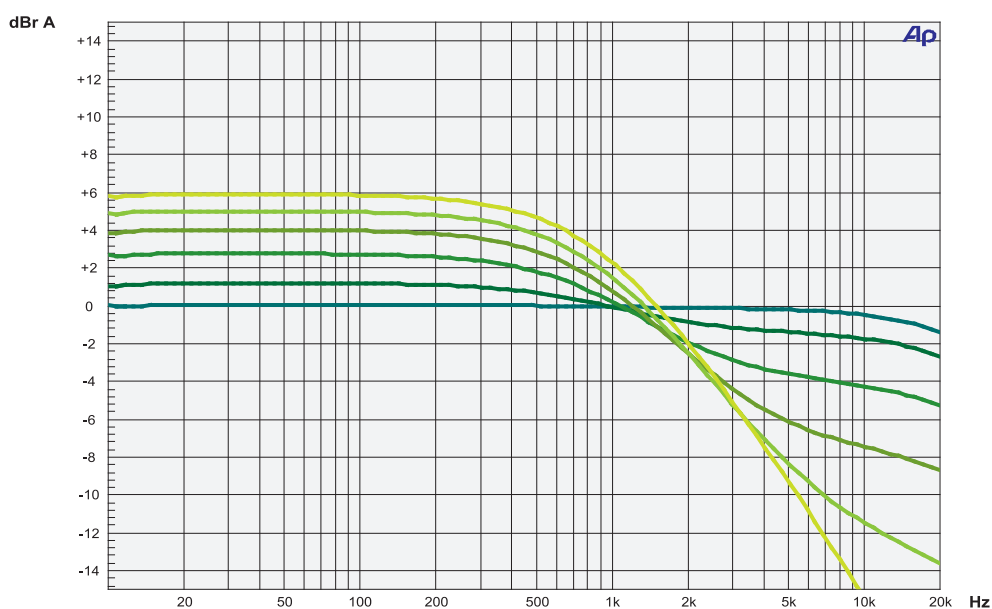
EQ Frequency

This diagram shows a variation of center frequencies with the EQ gain controller in the clockwise +4 dB position. The x10 button shifts the complete frequency range by a factor of 10. Settings in the border areas of the covered frequencies make it also possible to create 'almost' shelving filters, but then the overall level likely needs to be adapted with the gain controller. This filter is as effective as it is easy to use – the perfect tool for applying subtle or strong sonic marks to the compressed signal in no time at all.



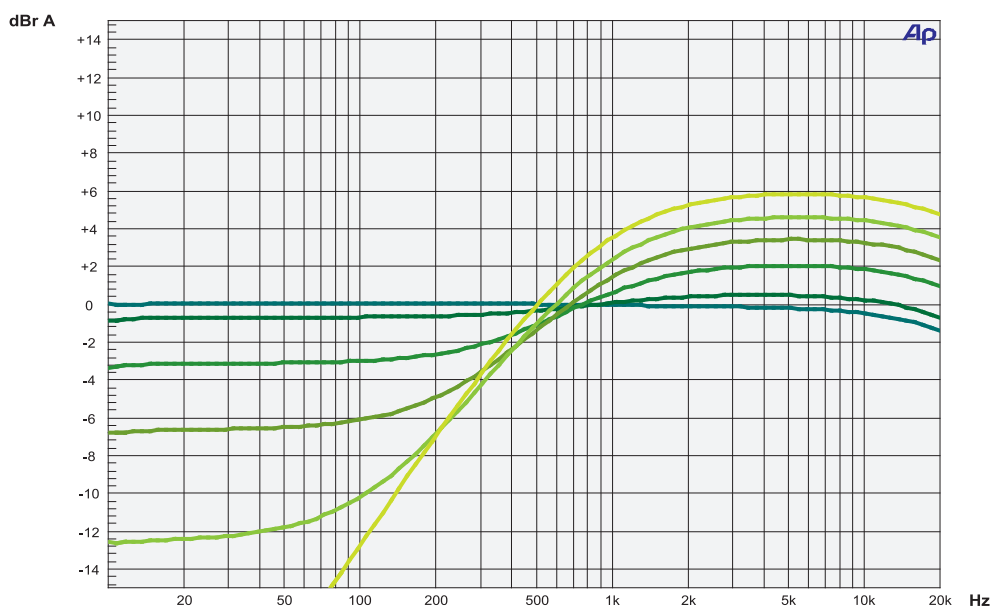
EQ Gain Low

This measurement shows different settings of the EQ gain controller between middle and fully counter-clockwise position at a center frequency of 1.5 kHz. The diagram shows the effectiveness of the filter: The lower frequencies are boosted up to 6 dB, then the curve crosses zero at the center frequency. The high frequencies are attenuated at the same time, and in the extreme setting of the controller even a 6 dB low pass filter is available. Depending on the setting of the EQ gain, the overall level possibly needs to be adapted with the gain controller.



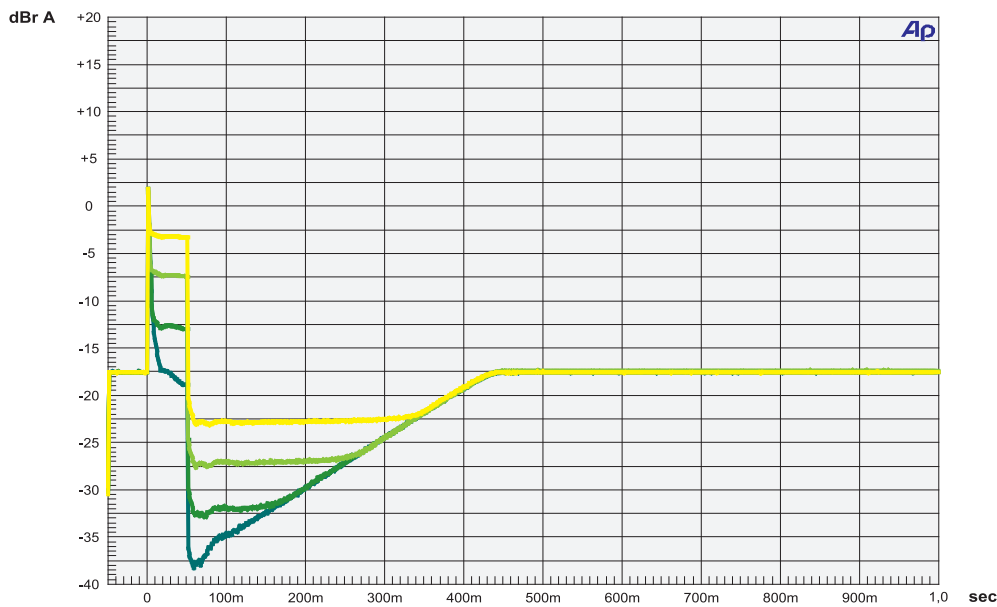
EQ Gain High

Here we have the opposite scenario. In this figure the EQ gain controller is turned from 0 to fully clockwise position at a center frequency of 500 kHz. Contrary to the previous example, the high frequencies are now boosted up to 6 dB and the lower frequencies are attenuated in a way that the most extreme setting produces a 6 dB high pass. This special characteristic of the filter provides a broad spectrum of sound shaping possibilities, ranging from very subtle to extremely obvious sonic changes.



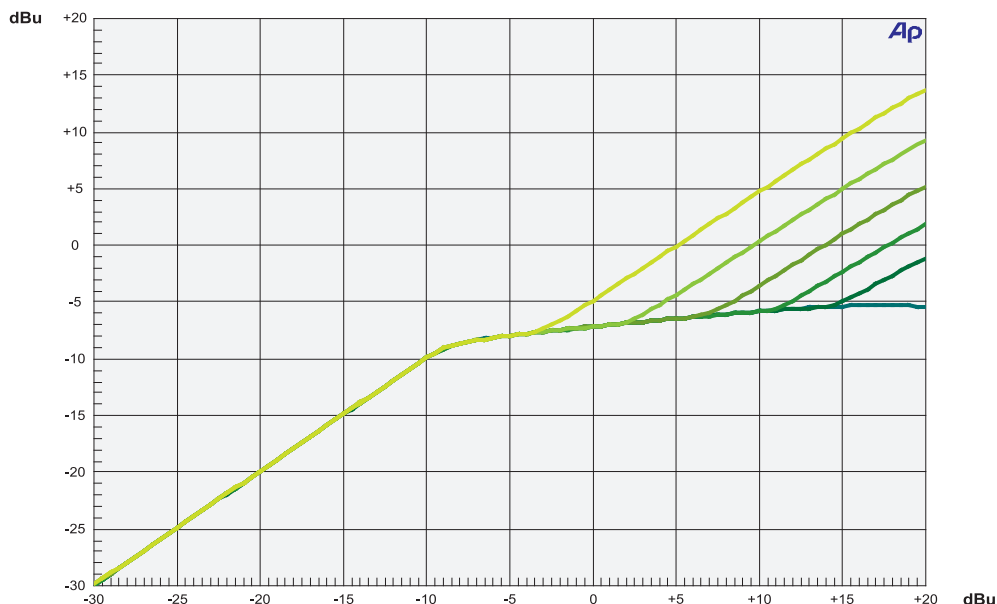
GR Limit Envelope

Here, a burst signal is used to demonstrate the effect of the Gain Reduction Limiter. While the lowest curve represents the maximum amount of gain reduction in this example, the other curves show the reduction that is influenced by different settings of the now activated limiter. The effect of this function can also be observed with a look at the gain reduction LED meter: The displayed value never exceeds the limit which is set with the GR Limit controller – no matter, how high the input level might become.



GR Limit Characteristic

Finally, a sine wave which increases in level is used in another angle of specifying the effect of the Gain Reduction Limiter. The lowest curve shows a compressed signal with a high ratio and without the limiter. The other curves reveal how the output level starts to rise again after the compression phase, because the maximum amount of gain reduction which is set with the GR Limit controller has already been utilized completely. This effect can be used to achieve compression within a selective range of level exclusively, whereby loud signals can still keep their original dynamics.



Technical Data

Frequency response:	<10 Hz – 33 kHz (-3.0 dB)
THD+N @ 0 dBu, 20 Hz - 22 kHz:	0.04 %
THD+N @ +10 dBu, 20 Hz - 22 kHz:	0.33 %
Noise floor, 20 Hz - 20 kHz (A-weighted):	-84.0 dBu
Dynamic range, 20 Hz - 22 kHz:	109 dB
Maximum input level:	+25 dBu
Maximum output level:	+27 dBu
Input impedance:	10 kOhm
Output impedance:	68 Ohm
Input pin assignment:	1. Ground 2. Positive 3. Negative
Output pin assignment:	1. Ground 2. Positive 3. With 68 Ohm to Ground
Power consumption:	50 W max
Fuse type:	230 VAC 0.8 A Slo-Blo 115 VAC 1.6 A Slo-Blo
Dimensions (W x H x D):	483 mm x 89 mm x 377 mm 19" x 3.5" (2 U) x 14.8"
Weight:	8 kg / 18 lb

Level Problems

No Signal

This problem can eventually be caused by balanced wiring. If the signal almost drops completely when the mpessor is activated, a pin of the XLR connector at the input is probably not connected. As the input stages behave like transformers do, both pins have to be connected. The classic example for this problem is a balanced XLR cable that is connected to an unbalanced output which only uses ground and pin 2 – connecting pin 3 to ground should solve the trouble.

Level Jump

In some audio processors the output stage is designed in a way that the level will always stay the same – no matter if they are connected with a balanced or an unbalanced cable. If pin 3 is connected to ground, for example, the level at pin 2 will automatically become twice as loud as before. This kind of output stage is usually unproblematic. But there are also stages which cannot compensate that. Then the level at pin 2 stays as it is, even if pin 3 is connected to ground. If the mpessor is placed between a device with that kind of output stage and a device with unbalanced inputs with pin 3 connected to ground, it is possible that the level will jump up by 6 dB when the compressor is activated. As a general rule, balanced input stages are always the best choice. In case they are not available, the first attempt to solve this problem should be to disconnect pin 3 at the XLR inputs of the mpessor and then connect it to ground. This generates an unbalanced signal that should not shift levels anymore.

Warranty

Conditions and limitations

The mpressor 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. elysia will remedy problems caused by material or workmanship either by repair or replacement to restore the product to full performance without charge for parts and labor. 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 warranties of merchantability and fitness implied by law are limited to the duration of the expressed 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.

Registration and return

To confirm your warranty please register your elysia product shortly after purchase. The easiest and fastest way is to use the online form you will find in the service section of our website www.elysia.com. If you cannot or do not want to use this option, please contact us via the address you will find at the end of this warranty statement. You will be provided with registration documents suitable for fax or mail use free of charge.

In case you notice any defect, please contact elysia for technical support directly. You can find the correspondent contact data at the end of this warranty statement. You will receive a return authorization which enables you to send your product to the elysia factory where it will be repaired and then sent back to you.

Packaging and shipping

All returns to the factory must be in the original packaging, accompanied by the return authorization, and must be shipped via insured freight at the customer's own expense. A new original packaging can be ordered from elysia. The customer will be charged for new factory original packaging if he fails to ship the product in the original factory packaging.

In case that a product must be returned to the factory from a country outside Germany, the customer shall adhere to specific shipping, customs, and commercial invoicing instructions given with the return authorization as elysia will not be responsible for transportation costs or customs fees related to any importation or re-exportation charges whatsoever.

After repair, the product will then be returned to the customer via prepaid, insured freight, method and carrier to be determined by elysia. 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.

Contact data

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