

ALEXB 4K Channel Dynamics MANUAL



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ABOUT ME

AlexB is a one-man company, so:

Hi ! I'm Alex :)

I have been a member of the Acustica Audio community since the 2007, and started Beta-Testing in 2009. I released my first commercial program libraries for Nebula Pro in 2009 because I wasn't satisfied by the sound of the plugins.

What I looked for was a good emulation of the console to improve my music - I have composed a lot of songs for Café del Mar in that years. My first Café del Mar recording was done with a Korg CR-4 only, then the following years I have moved to PC world and Nebula has been found as the plugin of my dreams.

Sincerely at the first test I wasn't satisfied at all by the sound. The libraries was very poorly sampled and the plugin was a little cloudy and flat.

After being in touch with Giancarlo (the genius behind Acustica Audio) and to have said him about my thoughts about what to improve in Nebula, he has promptly given me a new improved release of the plugin. We have continued for the whole afternoon and after some exchanges of test and new releases, finally Nebula became dynamic, open, deep and with life. Thank you Giancarlo !

So, pushed by this experience I've made some of the most highly sought after and rare hardware devices available for use in the digital world while maintaining virtually all of the analog character that makes recording a true art-form. Every sampled hardware piece has been refurbished and modified to improve the sonic characteristics, thanks to my 30+ years of experience in electronics and audio engineering. With hyper-realistic samplings of pristine mastering equalizers, top class consoles, the most sought after compressors, and the rarest vintage devices, I'm proving to the audio community that Acustica Audio sets the standard for the finest sound quality in the digital realm by facilitating a true analog experience with programs that make full use of the VVKT technology.

Please visit the website for more information: www.alex.eu

Thank you !

AlexB... Audio Renaissance.

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Please do not illegally share the program libraries, your financial support allow me to continue in developing. **Be aware: there isn't any authorized reseller of my programs.**

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Thank you

CONTENTS

1. Documentation, Installation and Support

1.1 Introduction	6
1.2 Overview	6
1.3 Sampling Process	7
1.4 Ultimate AI	8
1.5 Compressor's Regeneration	8
1.6 System Requirements	9
1.7 Installation and file BACKUP	9
1.8 Nebula 4 installation	9
1.9 Nebula 3 installation	9

2. General Use

2.1 Parameter Settings	10
2.2 Off Line Process	10
2.3 Gain Staging	11
2.4 Common Controls	12

3. 4K Channel Dynamics and Listen Mic Compressor – Ultimate AI

3.1 About the original hardware	13
3.2 Session Setup	14
3.3 Preset List	17

1. Documentation, Installation and Support

1.1 - Introduction

Thank you for purchasing the AlexB library programs for Nebula.

Now you have one of the best professional high quality audio software. I have spent countless hours to develop these no-compromise programs to give you only the best sound and the most realistic “feel” as possible to the real hardware. I'm confident that this plugin will help you make better and more professional mixes (while enjoying yourself even more)... Because: Sound First !

If you have any trouble with the software please do not hesitate to contact me at:

support@alex.eu

1.2 - Overview

Despite the digital revolution in the pro audio industry, many of today's top albums are still mixed on analog consoles and with analog outboard gear. Mixing into an analog desk just sounds better. Everything sits better in the mix, there is more weight to the bottom, and the overall sound is more three dimensional.

Analog devices produce electrical artifacts that affect frequency response, add harmonics, cause signal clipping and increase noise. These artifacts, which audio engineers often consider the character of a particular device, result from a combination of factors such as component grade, technology type (i.e. vacuum tubes, ICs, transistors), power supply specifications, equipment casing and other variables.

Depending on the circuit characteristics, input signal frequency response varies. Some circuits cut frequencies, others boost them. This behaviour is part of the overall device character and should not be confused with user adjustable EQ.

Total harmonic distortion (THD) is based on the levels of the odd and even harmonics of an input signal, usually at a level much lower than the fundamental level. THD balance and decay are circuit dependent, and thus differ from device to device.

Cross-Talk and Noise are two elements which every designer tends to avoid to not affect the audio quality. Since in the analog world they can't be avoided, fortunately in digital domain with Volterra Technology I have reduced the noise at less of -120dBfs and completely avoided Cross-Talk during the sampling.

The result is an optimum full quality sound from a like-new working condition hardware.

I have recreated these non linearity characteristics into these programs by sampling the units in excellent condition. Your tracks will become more alive with the classic vibe of a real hardware and you may notice that your mixes may take on an almost magical quality with punch, glue, and dimension that you didn't hear with your other algorithmically based plugins.

1.3 - Sampling Process

I believe that "Vectorial Volterra Kernels Technology" is the path of the future and will enable analog sound to be implanted into digital DAW environments with real harmonic content and analog vibe. In my creation of these Nebula Programs, I use only top notch modern and vintage gear, precisely sampled by using my own proprietary technique with custom converters I have built specifically for NAT3 which outperforms top notch commercial converters. Ultra filtered and stable AC supply, high end cables, with particular care to the connections, levels and impedance matching were used to translate the sonic qualities of this priceless devices into the Nebula software technology. Every captured sample is analyzed and carefully listened. Every volume change, gain change, frequency change is tested and accurately programmed without destructive digital processing for optimized sound and then compared to the original device. The result is a virtually indistinguishable digital replication of this landmark device.

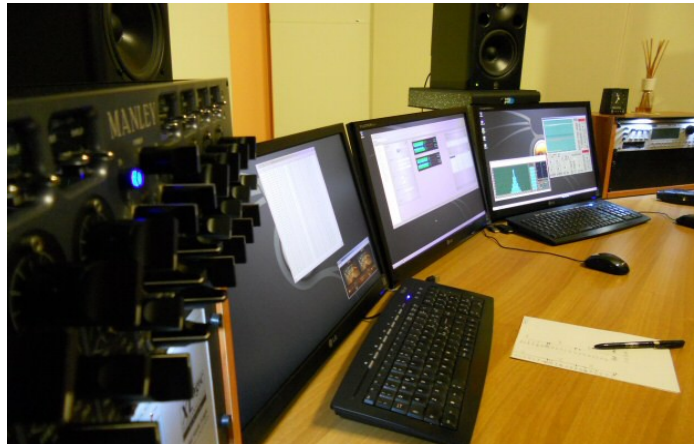
The hardware is sampled without introduction of noise or aliasing. The thinking behind this process is to provide the full quality of the analog behavior, which means placing all emphasis on quality over cpu resources. The process is extremely efficient and optimized to be used on current computer technology with a forward thinking to the future of more powerful systems, but this will be a more cpu-intensive device than your typical software. Consider the value in having even one instance of the original unit in your hardware rack and choose to see the true value in having the best sound that technology has to offer.

The preset doesn't sound processed, harsh or digital as many plugins do, but instead it sounds like a natural extension of the original audio, gluing your tracks in the mix with an analog vibe.

Some plugins make your recordings sound like digital.

Some plugins are supposed to make your recordings sound like analog.

THIS plugin helps make recordings sound like MUSIC !



1.4 – Ultimate AI

Ultimate Edition AI is the last evolution in sampling and programming to answer at the customers demand for a program library which covers the whole sample rate range used in musical production: 44.1kHz, 48kHz, 88.2kHz and 96kHz.

To make this a new resampling of the units was necessary, so why not to improve the audio quality also ?

A revision of my custom-built self-made converters has been done, which employs a non commercial chip used in military satellites and a NEW analog-digital AI circuit. This Ultimate AI Proprietary Technology assists, by machine-learning, to clean the streaming-sample and choose the right filter before the coding conversion - thanks to my previous work as chief technician into electronics and telecommunication lab for over 15 years, where called me "the doctor"... (who?), I had access at that technology - and a new sampling and programming technique has been developed with custom template and build up process.

The new Ultimate AI library allows better sound with less - unnecessary - kernerls, i.e. less CPU/RAM load and less latency which doesn't make necessary anymore the HQ/LE version; new and useful set of presets to expand the possibilities by leaving room for creativeness.

1.5 – Compressor's Regeneration

My mastering studio is fully analog, and the reason for this is that I've never liked digital compressors, whether VST or in the Nebula world. So, I was initially reluctant to revisit my old releases of compressor program libraries for Nebula. However, some beta testers and a good friend encouraged me to try improving both the behavior and audio performance as much as possible.

As always, my goal was to release a high-quality program library with authentic behavior and sound, offering those who can't afford the hardware unit the opportunity to experience that expensive sound in the box, at a fraction of the cost.

So, I tried several ways to improve the performance of my 'bad' compressors. After five new internal releases that I wasn't satisfied with, I decided to start from scratch.

A completely new multi-template has been developed, without using my outdated NAT3 release from ten years ago.

Every single sample, program line, parameter, digit, compression curve, attack and release shape have been manually programmed, edited, and calibrated. Then, each was tested, compared, and listened to against the original unit.

Once the program was complete, a fine-tuning process was carried out with a double check: analyzing and listening sessions. This has been done for every single input/record changed/edited bit.

It was a very long and hard process - just like the work I do when modifying or upgrading hardware!

The entire development process required over 960 hours of work, including sampling, programming, and testing, as well as manually converting over 6000 records into the digital domain (!!!).

The final result is a musical compressor with a reaction and behavior very close to the sampled unit, featuring the exact shape of the compression curve, attack, and release, all following the envelope follower. The shape of the attack curve provides the character by enhancing the transient - this is what gives the classic hardware compression sound: snap, smooth puff, etc. while the release curve shape adds its 'breath' to the music.

At the end of this fantastic adventure, I would like to thank all the customers who have emailed me, showing their respect and support for my work, as well as the beta testers and friends.

1.6 - System Requirements

- Intel or AMD CPU based PC or MAC computer
- Free space on Hard Disk or better SDD (library size depending)
- Nebula3 v1.3.903 or Nebula4 with installed commercial license
- HD or SDD for Programs Backup

1.7 - Installation and file BACKUP

After downloading, unpack the files and **make a safe backup** of the library. I recommend to use a Toshiba Canvio 2.5" HD as well to do a regular backup of your system with Acronis True Image.

1.8 – Nebula 4 installation

Skins for Nebula3 and Nebula4 have a cost but they are included in the libraries as **gift**.

Skins are developed by external 3rd party and I'm not responsible about them.

The skins are developed to work together with my programs. The use of other unauthorized skins will result in the unavailability of technical support.

Copy the contents of the programs, properties, setups, skins and vectors folders into their respective folders in the main root nebulatemprepository.

Clean the \temp folder in the main root nebulatemprepository.

Run Nebula4 and click on "Setups".

Select the programs you want to create and right click on it to choose between "Rebuild VST2 setups" or "Rebuild VST3 setups" or "Rebuild AAX setups".

Rescan plugins in your DAW and you are ready to use them.

NOTE: do not change/add/remove anything parameter in the setup.

1.9 - Nebula 3 installation

Copy the files manually, *.N2P into \programs folder and *.N2V into \vectors folder.

Clean the \temp folder in the main root nebulatemprepository.

To install the skin

1 - copy the *.N2S file into the root skin folder

2 - run your DAW and open Nebula

3 - go into MAST Page

4 - set the Skin to ALEXB_N3

5 - click on save and reload Nebula

After installation it's recommended to clean the \nebulatemprepository\temp folder.

2. General Use

2.1 - Parameter Settings

Some parameters must be set into Nebula to work correctly with AlexB Programs.

Nebula3

The best way is to make copy-and-paste of Nebula3.dll and Nebula3.xml (or whatever is the name of your installed Nebula plugin has) then rename both copies as AlexB-N3.dll and AlexB-N3.xml.

Now set the following parameters by editing the AlexB-N3.xml file:

```
<AHEADLENGTH> 6000 </AHEADLENGTH>  
<RATECONVERSION> 4500000 </RATECONVERSION>  
<OFREQD> 11 </OFREQD>  
<SKINNAME> ALEXB_N3.N2S </SKINNAME>  
<DSPBUFFER> 8192 </DSPBUFFER> (optional for better audio quality)
```

click on save and load the AlexB-N3 in your DAW.

Nebula4

Nebula4 doesn't require any special manual settings as they are already configured in the setups.

2.2 - Off Line Process

If your DAW isn't powerful or you want/need to freeze or export processed audio tracks I strongly recommend the Free NEBULASETUP2 by Zabukowski: <http://zabukowski.com/software/>

2.3 - Gain Staging

GUI's meters show the value in dBfs.

Take care with gain staging since the programs are close to the hardware, as reference 0dBVU on the hardware corresponds to -18dBFS on your DAW digital meter.

Normally the best sound is achieved with occasional maximum digital peaks to -10dBfs, i.e. kick or snare transients, pluck synth and other hits. On the mixbus the whole mix can hit an occasional maximum digital peaks between -8dBfs and -6dBfs. (imperative!)

When the signal is too high the sound will be congested and saturated/distorted in a bad way, too high peaks (and inter-sample peaks) overload Nebula which plays a BLIP as alert.

I recommend to mix with a good and precise VU Meter like this by Waves:

www.waves.com/plugins/vu-meter



It mimics the way our ears react to sound by giving you a more realistic representation of the way audio level changes are actually perceived.

In this way you can easily check the levels on every single track and for the whole mix by inserting the VUMeter as last instance on the mixbus and by setting the 0dBVU = -18dBfs on it (Headroom).

I suggest to deactivate or remove the VU Plugin when you export the mix to avoid any coloration. Yes, some plugins color the sound even if they are analyzers and/or bypassed.

NOTE: a console, limiter, equalizer, tape machine or compressor is not a guitar amp! If you drop the level back to where it would be using the real hardware, libraries can sound huge.

Useful video about to use the VU Meter and Gain Staging:

www.youtube.com/watch?v=2DVz_T48M-Q

www.youtube.com/watch?v=ECRx4WF3pcc

Great book about audio recording engineering:

<https://bobbyowsinski.com/recording-engineers-handbook/>

Another great book about music production with my contribution about console:

www.routledge.com/Producing-Music-1st-Edition/Hepworth-Sawyer-Hodgson-Marrington/p/book/9780415789226

2.4 - Common Controls

All programs have some common controls which are detailed below.

Input Gain

The Input Gain control sets the level at the input of the plugin.

The range is from $-\infty$ dB to +6 dB.

Output Gain

The Output Gain control sets the level at the output of the plugin.

The range is from $-\infty$ dB to +6 dB.

Bypass

This switch control sets the plugin operative or bypassed

Meters

Input and Output Meters display the levels at the input and output of the plugin in dBfs.

Compressors and Expander/Gate have a gain reduction meter also.

NOTE: *clicking on the controls while pressing "ctrl" on computer keyboard, the control returns to zero.*

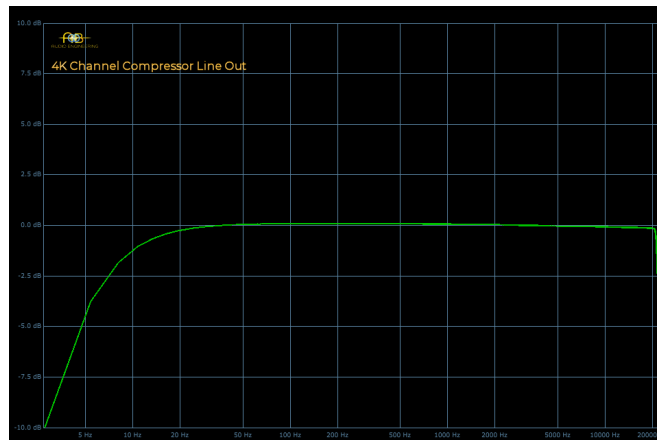
3. 4KD Channel Compressor and Listen Mic Compressor – Ultimate AI

3.1 - About the original hardware

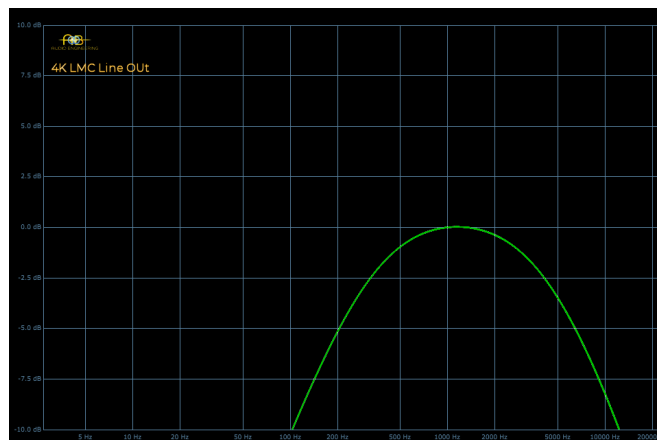
Channel Dynamics from the world's most successful studio production console which was the first one to incorporate dynamics processing with channel, and a master compressor in the console centre section. It's the first choice of world's best audio engineers to give punch, drive and to glue the mix together, maintaining control of the dynamics of single tracks.

4K Channel Dynamics manages to sound clean but with character, never weak and harsh. There is little apparent colouration, just a maturity of tone.

With its punching vintage tone, the 4K Channel Dynamics has been engineered to deliver recordings at the best conceivable quality onto any format at any sample rate, maintaining all the energy, atmosphere and life of the original performance as perfectly as possible.



4K Channel Line Out frequency response (@ 0dBVU)



4K LMC Line Out frequency response (@ 0dBVU)

3.2 - Session Setup

4K Channel Dynamics reproduces the characteristic sound of Classic Logic Console Compressor, this kind of compressor are used in top records in the world. To faithfully reproduce this analog sound in the DAW, we recommend using the 4K CH in all tracks where you need to control dynamically the sound.



To emulate the original unit sound you should use the components in this way:

- if you need compressor only then insert the compressor followed by the Line Out.
- If you need the exp/gate only then insert the exp/gate followed by the Line Out.
- If you need the complete channel emulation then insert exp/gate + compressor + Line Out.

The Listen Mic Compressor works in the same way.

- insert the compressor followed by the LMC Line Out.

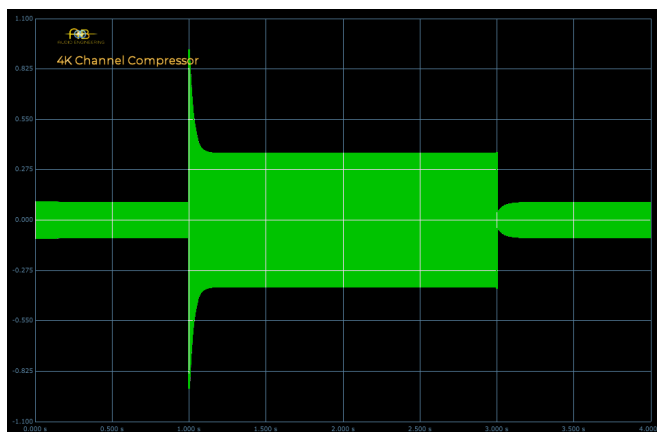


These presets interacts together to give the same behavior, harmonic content and overall sound as the original sampled unit.

External SideChain

The Sc program is useful to control the dynamic module of the Compressor and exp/gate via external side-chain for ducking, pumping or other effect.

To use side-chaining correctly please refer at the manual of your DAW.
This function works on Nebula4 only.



4K Channel Compressor Attack 30ms (Prog.Dep.) Release 400ms

Meters

Nebula is known for its meter issues. In these programs, the meters have been carefully programmed to mimic the behavior of the sampled hardware.

ByPass

Click on the AlexB logo to toggle the bypass on and off.



TRICK: Knob fine-tuning is possible with the use of the mouse wheel.
Ultra-fine tuning can be achieved by holding Shift + mouse wheel.
The mouse wheel also works for quickly switching between slow and fast attack.

NOTE: Use only the presets you need. Stacking unnecessary presets is the wrong way to emulate the sampled hardware.

Also, don't oversample the program to avoid audio quality loss.

Remember: every digital processing introduces quantization errors/noise, which degrade the sound. A smart use of digital processing keeps the sound alive

There's lots of magical thinking about digital audio. The only time there isn't any degradation is a file copy. Everything else measurably degrades the audio. So does all analog signal processing only more so. It's always a question of "Is the enhancement from the signal processing worth the degradation?" Too many people only listen for the former while not paying attention to the latter.

There are plenty of "you can't hear it" excuses offered but the truth is that sometimes you can and others you can't depending on the program material. It's also unique to each listener.

(qtd. Bob Olhsson)

3.3 - Program list:

Nebula4 setups:

- 4K Channel Compressor
- 4K Channel Compressor Zero Latency
- 4K Channel Expander Gate
- 4K Channel Expander Gate Zero Latency
- 4K Channel Line Out
- 4K Channel Line Out Zero Latency
- 4K Listen Mic Compressor
- 4K Listen Mic Compressor Zero Latency
- 4K LMC Line Out
- 4K LMC Line Out Zero Latency

Nebula 3:

The 4KD Channel Compressor and Listen Mic Compressor library include the following programs displayed into menu “4K” and subgrouped into “DYN”.

- 4K CH Comp
- 4K CH Expander
- 4K CH Gate
- 4K CH Line Out
- 4K Listen Mic Comp
- 4K LMC Line Out

4K Channel Compressor

Channel Compressor with fast – fixed - and slow - program dependent - attack, variable release, threshold, ratio, HPF, gain makeup and wet/dry controls.

4K Channel Compressor sc

The same as the Channel Compressor but with external sidechain input.

4K Channel Expander

Expander with fast – fixed - and slow - program dependent - attack, variable release, threshold and range controls.

4K Channel Expander sc

The same as the Channel Expander but with external sidechain input.

4K Channel Gate

Gate with fast – fixed - and slow - program dependent - attack, variable release, threshold and range controls.

4K Channel Gate sc

The same as the Channel Gate but with external sidechain input.

4K Channel Line Out

Line Out stage with Gdrive.

4K Listen Mic Compressor

Listen Mic Compressor with fixed attack, release and ratio; threshold, HPF, gain makeup and wet/dry controls.

4K Listen Mic Compressor sc

The same as the Listen Mic Compressor but with external sidechain input.

4K LMC Line Out

Line Out stage with Gdrive.

Zero Latency Programs

These programs have zero latency characteristics, but with a higher CPU cost.

END