

# Analog Sound Digital Recall



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# ngBusComp

User manual

EN

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Thank You for the purchase of **ngBusComp**

**Next Generation Bus Compressor with digital recall**

With kind regards

Radoslaw Wesolowski and Michal Weglicki

# Next Generation Bus Compressor with Digital Recall

The legendary sound of the Stereo Bus compressor has been a true companion on countless recordings for over 40 years. Often recognized as 'mixbus glue,' this particular compression sound has become an industry standard. Now, we have improved this design, creating a whole new level of versatility with incredible modern DAW integration.

WesAudio presents ngBusComp – a fully analog, dual mono, stereo, mid-side compressor with digital recall.





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# 1 Main Features

- **True Analog Sound with Extremely Convenient Control:** Experience the warmth and character of true analog sound combined with modern, user-friendly controls for a seamless workflow.
- **Total Recall and Plugin Control:** Easily save and recall all your settings through DAW integration, ensuring consistent results and efficient session management.
- **True Quad VCA THAT 2181:** High-quality VCA technology ensures precise, responsive compression for a wide range of audio applications.
- **+26 dBu of Headroom:** Enjoy ample headroom to handle dynamic signals without distortion, preserving the integrity of your audio.
- **Stereo / Dual Mono Compression:** Flexibility to process audio in stereo or separately in dual mono, catering to different mixing and mastering needs.
- **Relative Channel Linking:** Maintain the balance and consistency of your stereo image with linked channel compression.
- **Mid-Side Operation Mode:** Control the mid and side elements of your mix independently, enhancing stereo width and depth in mastering.
- **Carnhill Transformers Inside:** Add desirable warmth and coloration with high-quality Carnhill transformers, known for their musical sound.
- **Selectable Output Circuit:** Choose between electronically balanced or transformer balanced outputs, tailoring the output character to your needs.
- **Passive Attenuator in Transformer Mode:** Drive the transformer harder or softer to control harmonic distortion and saturation, customizing your sound.
- **Mix Knob for Parallel Compression:** Blend compressed and uncompressed signals to achieve the perfect balance of dynamics and density in your mix.
- **Proprietary THD Implementation with Detailed Variable Control:** Adjust the amount and type of harmonic distortion for creative sonic shaping.
- **Predefined Side Chain Filters:** Shape the compressor's response with high-pass and tilt filters, perfect for tailoring dynamics to specific frequencies.
- **Five Ratio Settings:** From gentle compression to aggressive limiting, select the ideal ratio for your application.
- **External Side Chain Through Back TRS Connectors:** Incorporate external signals for advanced compression techniques like ducking or frequency-dependent compression.
- **Hardware A/B/C:** Quickly switch between stored settings, ideal for live use or comparing different processing options.
- **USB or Ethernet Connectivity:** Modern connectivity options for easy integration, remote control, and firmware updates.
- **Detailed Metering for Each Channel:** Monitor input, output, and gain reduction with precision, ensuring accurate compression adjustments.

- **Analog Automation via Plugin Control:** Automate analog parameters directly from your DAW, combining analog sound with digital convenience.
- **Analog Automation Record in DAW with 5 Touch Sensitive Encoders per channel:** Make real-time adjustments and record them into your DAW, perfect for dynamic, evolving mixes.
- **True Bypass:** Ensure your signal remains uncolored when the compressor is disengaged, preserving the original audio quality.

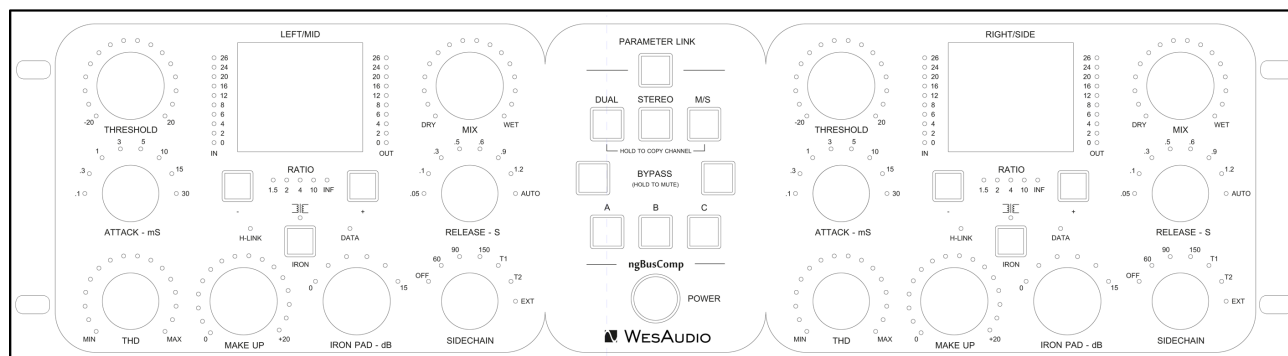
## 2 Hardware

This chapter will go through all analog features and explain all hardware aspects of ngBusComp.

### 2.1 Specification

<b>THD+N &lt; 0.03% (1kHz,0dBu)</b>	at 0dBu < 0.006%
<b>Frequency Response</b>	0-300kHz (-3dB)
<b>Input Impedance</b>	>10kohm
<b>Output Impedance</b>	< 50ohm
<b>Crosstalk</b>	>90dB
<b>Max Input Level</b>	+ 26dBu
<b>Max Output Level</b>	+ 26dBu
<b>Dynamic Range</b>	>120dB
<b>Attack</b>	0.1, 0.3, 1.3, 10, 30 (ms)
<b>Release</b>	0.1, 0.3, 0.6, 0.9, 1.2, Auto (s)
<b>Sidechain Filter</b>	60, 90, 150, T1, T2
<b>THD</b>	0% to 8%
<b>Power Consumption (MAX)</b>	20W
<b>Unit Dimensions</b>	135x483x252mm
<b>Box Dimensions</b>	274,550,382mm
<b>Unit Weight</b>	7,95 kgs
<b>Box Weight</b>	10 kgs
<b>Warranty</b>	2 years

## 2.2 Front Panel and Main Functions



**Threshold:** Sets the level at which the compressor begins to operate. The threshold is continuously adjustable, allowing for precise control over when compression is applied.

**Mix:** This wet/dry mixer knob allows for parallel compression, blending the compressed (wet) and uncompressed (dry) signals to achieve the desired balance.

**Attack:** Controls how quickly the compressor responds to changes in signal level. It offers eight selectable attack times: 0.1 ms, 0.3 ms, 1 ms, 3 ms, 5 ms, 10 ms, 15 ms, and 30 ms, providing a range of options for different audio scenarios.

**Release:** Determines how quickly the compressor releases after the signal falls below the threshold. Release times are selectable between 0.05, 0.1, 0.3, 0.5, 0.6, 0.9, and 1.2 seconds, or you can set it to automatic mode, where the release time adjusts based on the program material's duration.

**Ratio:** Defines the intensity of compression. With a range from 1.5:1 for gentle compression to infinity for a limiting effect, this control allows for fine-tuning the compression depth.

**THD (Total Harmonic Distortion):** Adjusts the amount of harmonic distortion applied to the wet signal, enabling the addition of subtle or pronounced distortion for creative effect.

**Sidechain:** This control manages the sidechain filter and source selection:

- **OFF** – Deactivates the sidechain filter.
- **60 Hz** – Engages a high-pass filter at 60 Hz (6dB/octave).
- **90 Hz** – Engages a high-pass filter at 90 Hz (6dB/octave).
- **150 Hz** – Engages a high-pass filter at 150 Hz (6dB/octave).
- **T1** – Activates a special tilt filter with a high-pass filter and high-frequency boost.
- **T2** – Activates another tilt filter with a different frequency curve, also with high-pass filtering and a high-frequency boost.
- **EXT** – Activates external sidechain input through the back TRS connectors. When EXT is on, it enables advanced compression control using external signals, allowing full access to SC filters for precise

shaping of the compression response. If external inputs are not in use, this setting can bypass compression and function as a saturation box.

### **OUTPUT STAGE:**

- **IRON:** Activates the transformer-balanced output stage. When this is disabled, the output stage remains electronically balanced.
- **Make Up Gain (Green LEDs)\*:** Controls the output signal level leaving the compressor in "Normal Mode" (electronically balanced). This control compensates for the signal reduction caused by compression, offering continuous adjustment in 0.25 dB increments, with a range of 0-20 dB.
- **Make Up Gain (Red LEDs):** Controls the output signal level leaving the compressor in "Iron Mode" (transformer balanced). This function also compensates for compression and allows for driving the transformer with a higher signal level to create saturation. Like the green LEDs, it provides continuous control in 0.25 dB increments, ranging from 0-20 dB.
- **IRON Pad:** Engages passive attenuation, managed via a relay cascade, with up to 15 dB of reduction in 1 dB steps. This feature is active only in "Iron Mode."

*(\*) For more information about Make Up parameter please refer to [OUTPUT Modes](#) chapter.*

### **MIDDLE PANEL:**

- **Dual/Stereo/MS:** Selects the desired compression mode, allowing for flexibility between dual mono, stereo, and mid/side compression. For more information please refer to chapter [Modes of Operation – Dual / Stereo / Mid-Side](#)
- **A/B/C:** Internal preset memory buttons, allowing you to compare three different compressor settings quickly.
- **Bypass:** True bypass switches for each channel, ensuring the signal remains unaltered when the compressor is disengaged.
- **Parameter Link:** This button links parameters between channels, ideal for stereo use. The parameters are linked relatively, meaning adjustments on one channel are mirrored on the other by the same amount. To temporarily disable parameter linking, hold any touch-sensitive encoder for both channels simultaneously.
- **Power:** Power switch to turn the unit on or off.

### **CHANNEL INDICATORS:**

**H-LINK LED:** Indicates the status of the connection between the host module and the device.

**DATA LED:** Indicates that data is being transmitted from the DAW to the device.



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**METERS – each channel supports:**

**IN LED Metering (0 – 26 dBu):** This meter provides a visual indication of the input signal level, ranging from 0 to 26 dBu. It helps you monitor the strength of the signal entering the compressor, ensuring that it is neither too low nor too high, which is crucial for achieving optimal compression and avoiding distortion.

**OUT LED Metering (0 – 26 dBu):** The output meter displays the level of the signal after it has been processed by the compressor. With a range of 0 to 26 dBu, this meter allows you to see how much the signal level has been adjusted, helping to ensure that the output maintains the desired level for further processing or playback.

**GR (Gain Reduction) Analog Meter (0 – 20 dB):** The gain reduction meter shows the amount of compression applied to the signal, measured in decibels (dB). With a range of 0 to 20 dB, it provides real-time feedback on how much the signal's dynamic range is being reduced, allowing you to fine-tune the compression settings for the desired effect, whether for subtle dynamic control or more aggressive limiting.

These metering tools are essential for professional audio work, giving you precise control over the dynamics and levels of your audio signals.

**Copy Channel:**

**To copy Channel 1 to Channel 2:** Hold the "DUAL" button for 2 seconds until it starts blinking red, then press the "M/S" button.

**To copy Channel 2 to Channel 1:** Hold the "M/S" button for 2 seconds until it starts blinking red, then press the "DUAL" button.

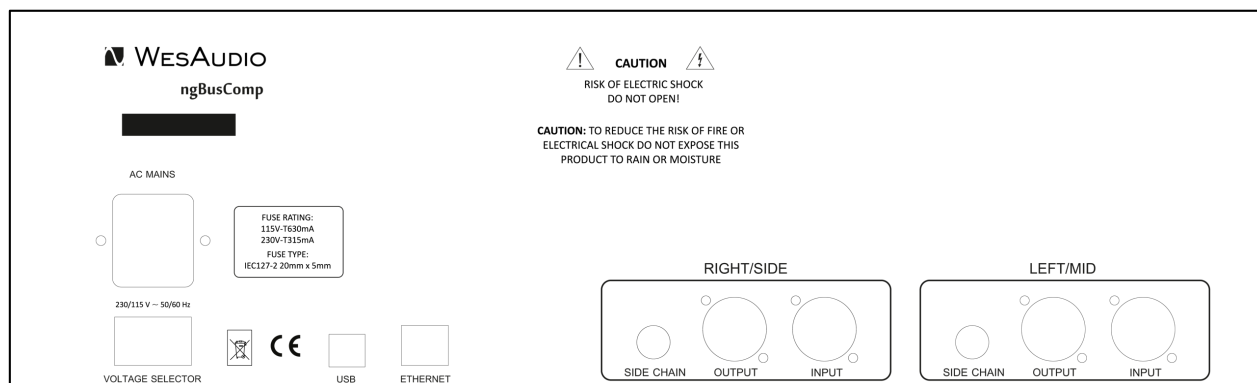
**Copy Preset A/B/C:** To copy a preset: Hold the button corresponding to the preset until it starts blinking. Then, press the button of the preset you want to overwrite.

**Mute:**

**To mute Channel 1:** Press and hold the BYPASS button for Channel 1 for 2 seconds until it starts blinking red. The channel is now muted. To unmute, press the Channel 1 BYPASS button again.

**To mute Channel 2:** Press and hold the BYPASS button for Channel 2 for 2 seconds until it starts blinking red. The channel is now muted. To unmute, press the Channel 2 BYPASS button again.

## 2.3 Rear panel



1. **AC Power Socket:** This is the designated point on the unit where the power cable is connected, linking the device to the main electrical supply. It's through this connection that the device draws alternating current (AC) power, essential for its operation. The socket is designed to accommodate the specific type of power cord that corresponds with the electrical standards of the region, ensuring the unit is powered safely and efficiently.
2. **Voltage Selector:** This feature provides the option to switch the unit's operating voltage between 115V (60Hz) and 230V (50Hz), catering to different regional electrical standards. It's crucial to use the correct fuses for the voltage setting you select to prevent damage. Always replace the fuses with the appropriate ones before changing the voltage selector to match the mains electricity supply of your location. This ensures the unit operates within its safety and performance specifications.

**Digital Management Connections:** The ngBusComp facilitates digital management through two connection options:

3. **USB:** Features a USB2+ compatible port for GCon management.
4. **Ethernet:** Offers an Ethernet port for GCon management using the UDP protocol (LAN within a single subnet).

**Please be aware that only one type of connection can be active at any given time. To use the Ethernet connection, ensure the USB cable is disconnected from the unit's rear.**

5. **SIGNAL CONNECTORS** - each channel contains following signal connectors:
  1. **XLR IN** – Input signal via XLR cable,
  2. **XLR OUT** – Output signal via XLR cable,
6. **Serial Number.**

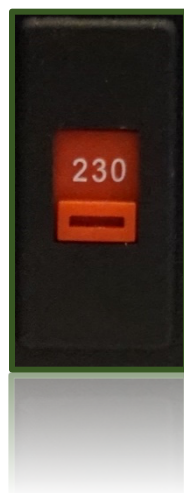
## 2.4 Audio Signal Connectivity

The ngBusComp is a state-of-the-art device that marries the warmth and richness of analog signal processing with the precision and flexibility of digital control. This means that while your audio signal paths are purely analog, passing through the device via XLR connections on the back panel for pristine quality, the extensive range of the unit's functions and parameters can be meticulously adjusted through a digital management protocol. Each channel's input and output are facilitated through these XLR sockets, ensuring high-quality, interference-free audio transmission.

## 2.5 Voltage Selector and Fuses

### 2.5.1 Voltage Selector

The ngBusComp can be configured to operate at either 230V or 115V. Please note that your unit is pre-configured for the specific sales region, including the appropriate fuse setup for either 230V or 115V. If you need to change the voltage configuration using the power selector, make sure to also use the correct fuse for the new voltage setting.



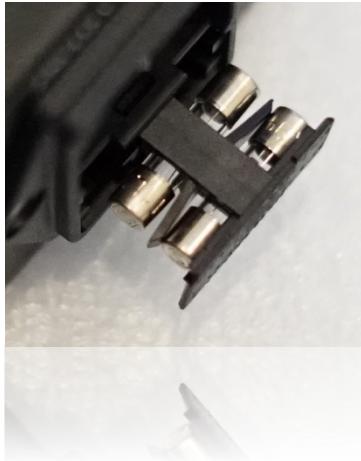
For proper operation, you can change the voltage and ensure the correct fuse is installed based on your voltage setting. Use:

- **630mA fuse for 115V**
- **315mA fuse for 230V**

**Important:** Incorrectly setting the voltage selector can cause severe damage to the unit and result in the fuse blowing. For example, if the voltage selector is set to 115V (60Hz) while connected to a 230V (50Hz) supply,

the unit may experience overloading, leading to a blown fuse and potential harm to the device. Always double-check the voltage selector before powering on the device.

## 2.5.2 Spare Fuses



A spare fuse is included in the power supply, allowing you to quickly swap it with the primary fuse when needed.

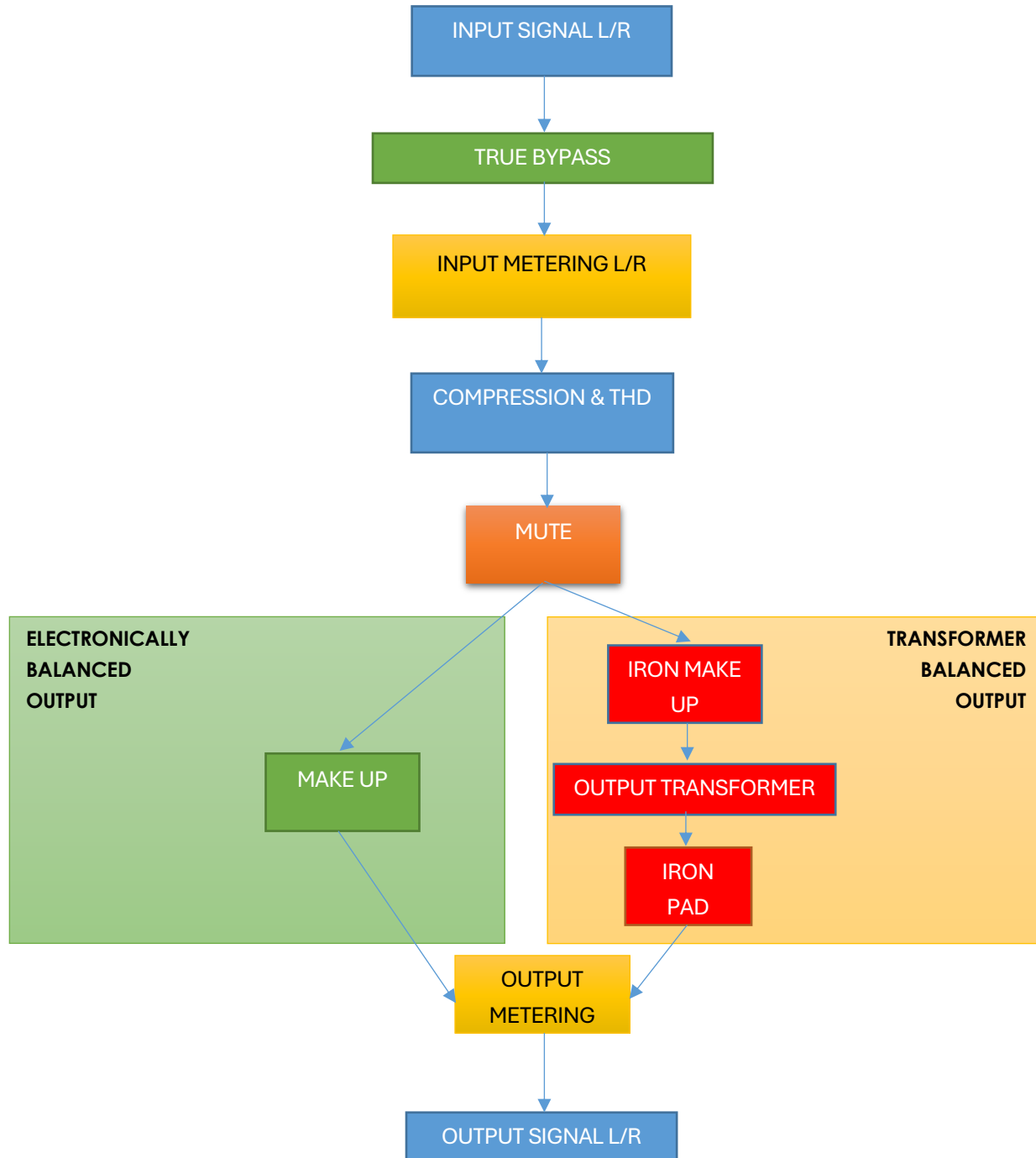
## 3 Analog Processing

This chapter in depth describes analog nature of ngBusComp.

### 3.1 Analog Signal Flow

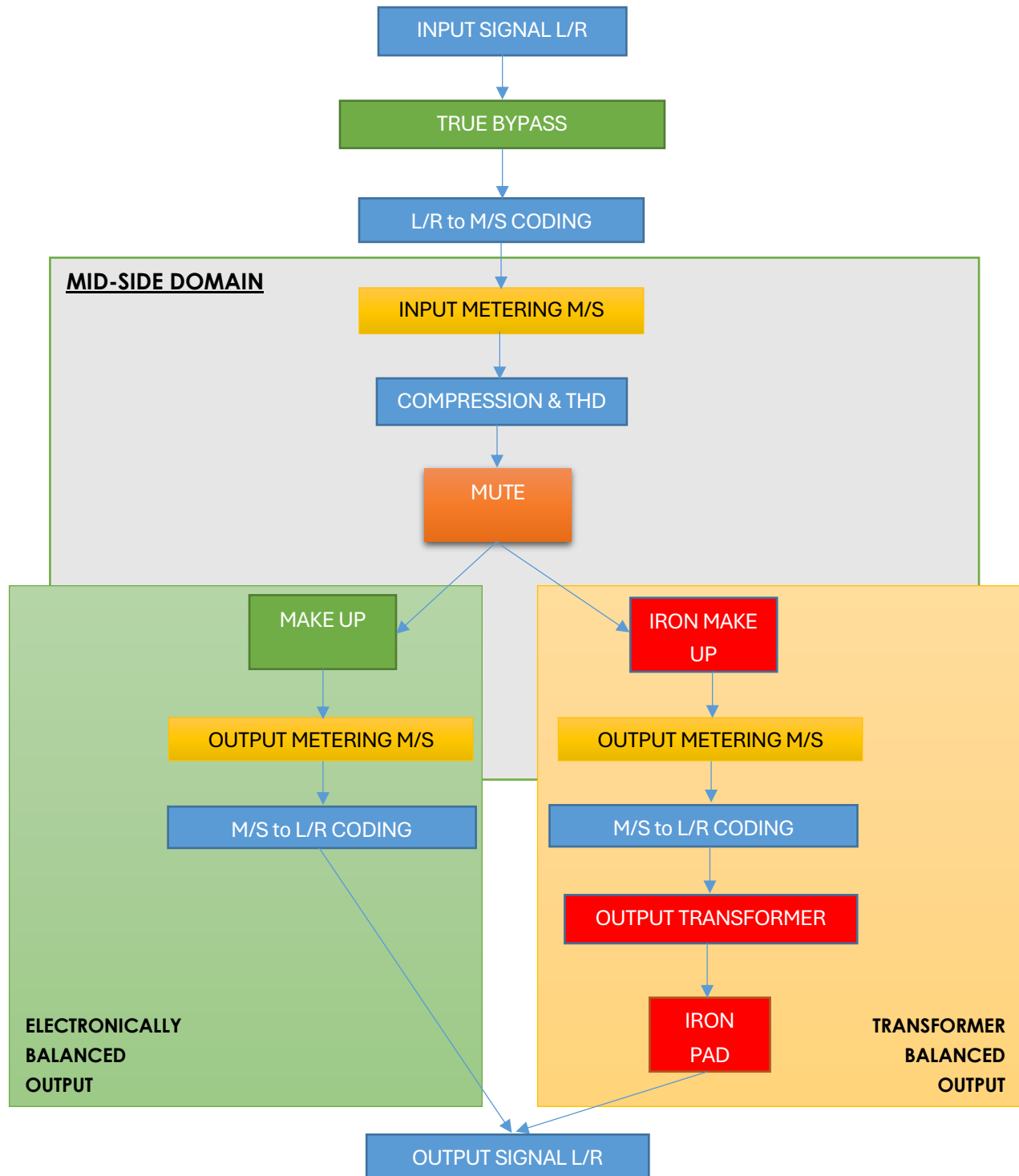
#### 3.1.1 DUAL MONO / STEREO

This block diagram illustrates the signal flow for DUAL MONO or STEREO modes.



### 3.1.2 MID-SIDE

This block diagram illustrates the signal flow for Mid-Side mode.



## 3.2 Analog Processing Blocks

The ngBusComp compressor is built around a carefully engineered set of analog processing blocks, each playing a crucial role in defining its signature sound. These components are designed to impart distinct tonal characteristics and offer a range of functionalities that allow for precise, warm, and flexible audio shaping. This chapter delves into the purpose and operation of each processing block, revealing how they interact both individually and collectively to produce the renowned compression and audio quality that the ngBusComp is celebrated for.

### 3.2.1 Modes of Operation - Dual / Stereo / Mid-Side

The ngBusComp is designed with versatility in mind, offering three distinct modes of operation: Dual, Stereo, and Mid-Side (M/S). Each mode tailors the unit's processing to different mixing and mastering needs, from individual channel adjustments to cohesive stereo or spatial manipulation.

- **DUAL Mode:**

In DUAL mode, the ngBusComp treats the left and right channels as separate entities, allowing for independent settings on each channel. This mode is ideal when channels require different compression characteristics, such as balancing stereo-recorded instruments or creating creative effects. The Parameter LINK feature allows linking of channel settings, and when activated with both channels set identically, any adjustments made will mirror across both, effectively emulating STEREO mode behavior with the flexibility to disengage and adjust independently if needed.

- **STEREO Mode:**

STEREO mode simplifies operation by consolidating control into a single set of parameters that affect both channels equally. In this configuration, the left/mid channel acts as the 'master,' with its settings duplicated on the right/side channel. This unified approach is perfect for tasks requiring symmetrical compression across both channels, ensuring a balanced and cohesive sound.

- **M/S (Mid-Side) Mode:**

M/S mode allows for independent processing of the mid (center) and side (stereo width) signals, offering a powerful tool for stereo image manipulation and spatial enhancements. The signal is decoded into mid and side components for processing and then re-encoded back to a stereo signal at the output. This mode is particularly useful for adjusting the balance between center-located elements and the ambient stereo field or for creating dynamic stereo imaging effects. With Parameter LINK enabled in M/S mode, adjustments such as output level changes affect both mid and side components equally, allowing for coordinated modifications to the stereo image.

The first part of the circuit engages mid-side encoding if the unit is set to M/S mode; otherwise, the signal is routed directly to each channel as is. These operational modes greatly expand the ngBusComp's utility, from detailed, channel-specific compression in DUAL mode to broad, stereo-wide adjustments in STEREO mode, and nuanced spatial processing in M/S mode.



### 3.2.2 QUAD VCA Compression

In the ngBusComp, QUAD VCA compression employs four Voltage Controlled Amplifiers to deliver precise and balanced dynamic control across both channels of a stereo signal. This advanced configuration ensures that each channel is compressed evenly, maintaining the natural stereo image and preventing any shifts or imbalances in the sound field. The QUAD VCA design excels at managing complex audio material, providing smooth, transparent compression that enhances the overall mix without introducing distortion or unwanted artifacts. This makes the ngBusComp particularly effective for mastering and critical mixing, where the goal is to apply compression that enhances the audio quality while preserving the original character and clarity of the sound.

### 3.2.3 THD – Total Harmonic Distortion

The Total Harmonic Distortion (THD) feature represents a pivotal analog block within the signal chain of the ngBusComp, renowned for delivering rich, controllable saturation through a proprietary WesAudio circuit, a design highly esteemed within the audio industry.

#### Key Characteristics of THD:

- **Fully Variable Control:** The THD knob allows for seamless adjustments from 1% to 100%, offering a wide range of saturation effects. At 0%, the circuit is entirely bypassed via an analog relay, ensuring a clean signal path when saturation is not desired.
- **Harmonic Content Enrichment:** As the THD setting is increased, it incrementally adds more harmonic content to the signal, enriching the sound and giving tracks a noticeable presence boost. This capability is frequently sought after by engineers to make elements stand out in a mix.

#### Impact on the Analog Circuit:

- **Volume Boost and Saturation:** The THD control not only introduces harmonic distortion but also increases the signal volume, driving the subsequent stages of the analog circuit. This increased drive can lead to further saturation, adding a distinct layer of character to the sound.
- **Compensation for Unity Gain:** Despite the volume boost provided by the THD, the ngBusComp intelligently compensates for this increase through output volume adjustments, maintaining unity gain. This automatic compensation ensures that the saturation effect enhances the sonic quality without altering the overall level of the track.

The THD feature in the ngBusComp stands out as a versatile tool for engineers looking to imbue their tracks with warmth, character, and presence. With fully variable control and sophisticated design, it provides a level of saturation that can significantly enhance the sonic quality of music productions, all while maintaining unity gain throughout the process.

### 3.2.4 Interdependencies of Analog Features

The ngBusComp is a fully analog device where certain features can interact with one another due to its integrated design. While additional details are covered in subsequent sections, the following summary outlines key considerations regarding how specific functionalities within the unit interact:

- **Bypass Functionality:** Activating bypass directly connects the INPUT to the OUTPUT, making other features in the signal chain inoperative. For example, the MUTE function will not be effective when bypass is engaged. If the unit only transmits a signal in BYPASS mode, this may indicate that the INPUT from the interface has been incorrectly connected to the INPUT of the device, rather than to the OUTPUT.
- **IRON Mode in Mid-Side (M/S) Processing:** In Mid-Side mode, the IRON mode applies the same value to both channels. Since the output transformer (used for symmetrization) operates in Left/Right mode, it functions outside the Mid/Side processing domain.
- **Metering in Mid-Side Mode:** Metering remains within the Mid/Side domain and is not influenced by the IRON PAD setting.
- **IRON PAD Function:** The IRON PAD is the final analog circuit before the output XLR connector, allowing for passive signal attenuation just before it exits the unit. This feature provides additional control over transformer saturation based on the signal level. However, it is important to note that the IRON PAD setting does not prevent internal clipping. For instance, distortion from the transformer saturation caused by excessively high input levels will not be alleviated by adjusting the IRON PAD value.

### 3.2.5 Sidechain

The ngBusComp features 5 built-in sidechain filters and supports an external sidechain signal source.

#### FILTERS:

**OFF** – Sidechain filter not active,

**60 Hz** – Sidechain High Pass Filter at 60 Hz (6dB/Octave).

**90 Hz** – Sidechain High Pass Filter at 90 Hz (6dB/Octave).

**150 Hz** – Sidechain High Pass Filter at 150 Hz (6dB/Octave).

**T1** – special tilt filter with HPF and High boost.

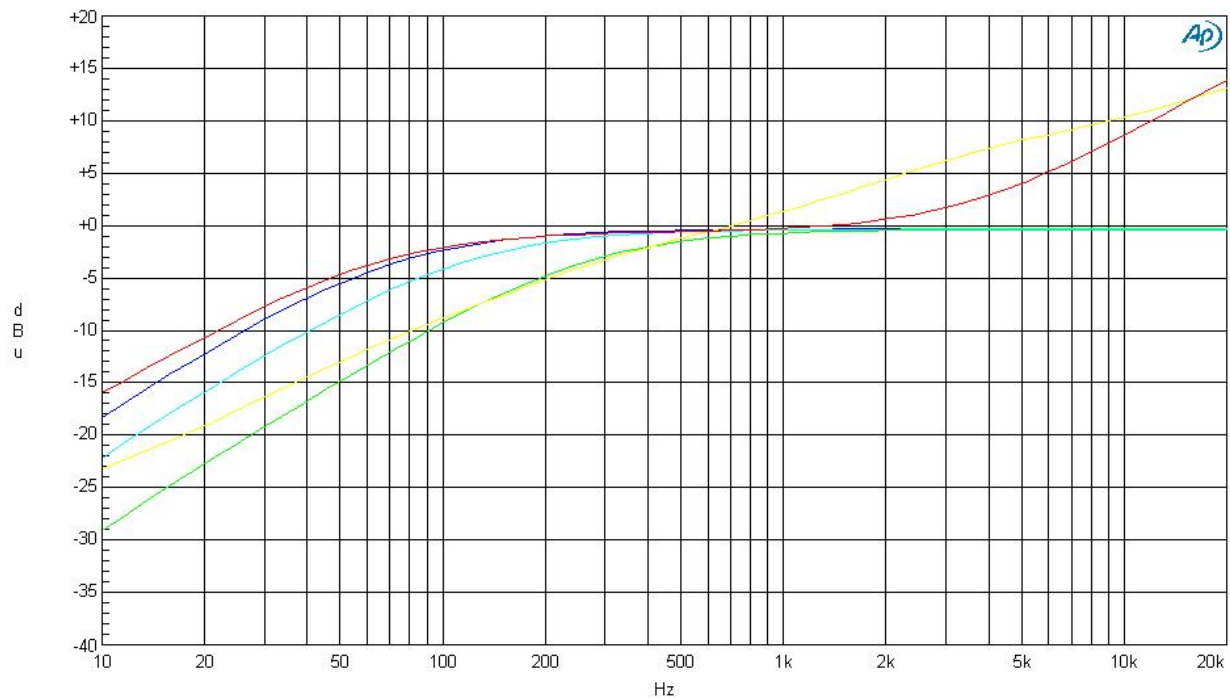
**T2** – special tilt filter with HPF and High boost.

**EXT** – back TRS connectors are active to accept external sidechain signal.

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A-A FAST RMS FREQUENCY RESPONSE

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Sweep	Trace	Color	Line Style	Thick	Data	Axis	Comment
1	1	Blue	Solid	1	DSP Anlr.Level A	Left	60Hz
2	1	Cyan	Solid	1	DSP Anlr.Level A	Left	90Hz
3	1	Green	Solid	1	DSP Anlr.Level A	Left	150Hz
4	1	Yellow	Solid	1	DSP Anlr.Level A	Left	T1
5	1	Red	Solid	1	DSP Anlr.Level A	Left	T2

Requires DSP. Uses DSP generated - Sine(D/A) - and analyzed frequency sweep for rapid (<2 seconds) measurement.  
Can be even faster if the lowest frequencies are not included. F4 to capture the 1kHz reference. Optimize for a detailed view.

A-A FREQ RESP FAST.at27

When the SIDECHAIN parameter is set to "EXT," the rear TRS connectors are activated to receive a sidechain signal from an external source. This feature is particularly advantageous for those who wish to apply customized processing to the sidechain signal, offering greater flexibility and control beyond the onboard ngBusComp filters.

### 3.2.6 OUTPUT Modes

The ngBusComp is designed with two distinct output stages, each offering a unique character and signal path to suit different audio engineering needs and preferences. These stages are color-coded for ease of reference and operation: GREEN for an electronically balanced output and RED for transformer symmetrization and a passive attenuation circuit. Here's a more detailed look at each:

#### 1) GREEN Output Stage: Electronically Balanced

The GREEN output stage provides an electronically balanced signal path. This stage is characterized by its clean, transparent sound. It maintains the integrity of the audio signal with minimal coloration, ensuring a pure, unaltered output. This setting is ideal for applications requiring pristine sound quality and accuracy, making it suitable for critical listening environments and scenarios where the natural sound of the source material needs to be preserved.

#### 2) RED Output Stage: Transformer Symmetrization and IRON PAD

The RED output stage introduces a more complex and character-rich signal path:

- **Transformer Symmetrization:** The signal passes through a transformer symmetrization circuit. Transformers are known for their ability to add weight and warmth to the signal, further enhancing the output's sonic character. This stage contributes to the overall tonal balance and can introduce subtle nonlinearities that enrich the sound.
- **Passive Attenuation Circuit (IRON PAD):** The final stage in the RED output path involves a passive attenuation circuit, known as the IRON PAD. This circuit consists of a set of resistors controlled via a relay cascade, allowing for attenuation ranging from 0 to 15dB. The IRON PAD enables the user to aggressively drive the transformer stage for increased saturation and character while still having the ability to dial back the output level. This ensures that the subsequent stages in the signal chain are not overloaded, providing control over the signal's dynamic range without compromising on the desired tonal character.

Together, these stages offer the ngBusComp user a flexible and creative toolkit for shaping audio signals, whether the aim is to maintain the utmost fidelity to the source or to imbue the signal with the distinctive warmth and richness that transformers can provide.

## 3.3 Analog Features

### 3.3.1 Mute

The Mute function allows for the complete silencing of one or both channels. When the Link parameter is enabled, muting applies to both channels simultaneously. In M/S mode, the Mute function can be used to mute either the Mid or Side channel independently, allowing to hear only the Side or Mid channel for more focused processing and creative control over the stereo field.

### 3.3.2 Iron Link

Another innovative feature of the ngBusComp is the ability to link the IRON PAD with the OUTPUT control when in IRON mode. This can be done:

- through a dedicated GUI control.
- by touching both the MAKE UP and IRON PAD encoders simultaneously.

This functionality enhances sound sculpting capabilities by allowing precise management of gain staging, enabling creative saturation and distortion effects while maintaining unity gain.

#### How the Link Feature Works

When engaged, the link ensures that adjustments to the MAKE UP level are mirrored by corresponding changes in the IRON PAD attenuation. This allows users to drive the transformer stage more aggressively for increased saturation or harmonic enhancement, without altering the overall output level. Essentially, you can achieve a more saturated, character-rich signal from the transformer stage without increasing the output volume, preserving the balance of the mix.

#### Creative Applications

This feature is especially useful for engineers looking to enhance the character and texture of a track or mix without altering its overall mix level. By driving the signal harder into the transformer stage, users can achieve added warmth, richness, and subtle harmonic coloration, all while maintaining a consistent output level. This allows for increased saturation and tonal enhancement without affecting the track's placement in the mix.

## 4 Software Setup

The WesAudio software package is accessible for download to all purchasers of the corresponding hardware unit at <https://www.wesaudio.com/download>.

<https://www.wesaudio.com/download>



*For information on supported plugin types and platforms, please refer to the provided link.*

### 4.1 Installation Process

To initiate the installation of the WesAudio software package, navigate to <http://www.wesaudio.com/download> and download the latest version of the software.

#### 4.1.1 For Windows Users

- **Initial Installation:** Before beginning the installation, ensure that all WesAudio devices are disconnected from your computer.
- **USB Driver Installation:** Upon installing the USB driver, a notification will prompt you to connect all WesAudio devices. Please connect the devices as instructed.
- **Computer Restart Request:** Installation of the USB driver may necessitate restarting your computer. Although restarting is generally inconvenient, it is a crucial step to ensure successful installation of the USB driver.
- **Post-Restart:** After restarting, the installer should automatically resume. If the installer does not restart on its own, please manually reopen the same installer to continue the process.

#### 4.1.2 For OSX Users

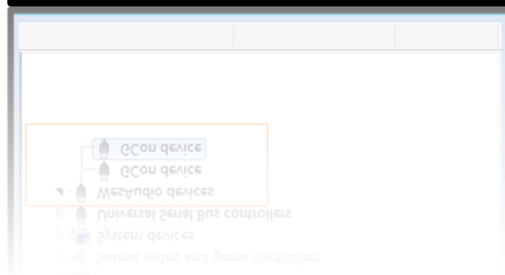
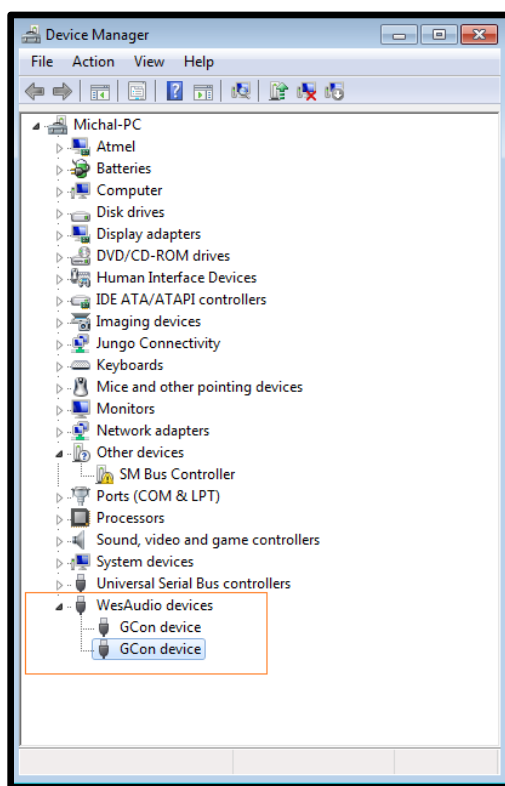
Due to the simpler nature of OSX architecture and its handling of USB devices, the primary consideration is to ensure all devices are connected before beginning the installation process. Once you initiate the installer application, you might encounter system warnings regarding the installer. In such cases, please disregard these warnings\*. If necessary, you can bypass these warnings by accessing the context menu through an 'Option' click (or right mouse click) and initiating the installation process again.

### 4.1.3 Troubleshooting

If you encounter any issues during the installation process, please reach out to our support team at [support@wesaudio.com](mailto:support@wesaudio.com), and we will respond promptly to assist you.

Below is a common issue along with suggestions that might help in diagnosing the problem:

- Issue: "Can't find my device in the plugin dropdown menu"
  - This problem can stem from multiple causes. On Windows, a critical step is to verify that the USB device is successfully recognized at the system level. You can check this in the "Control Panel -> System -> Device Manager."
  - **Important for Windows Users:** Installing the USB driver is essential for the hardware units to communicate with the software. This step is mandatory only during the initial installation. The driver installation option will be automatically disabled for any subsequent software updates.





## 4.2 GCon Manager

The GConManager is a versatile application designed for configuration management across compatible devices. It is located within the Application folder data:

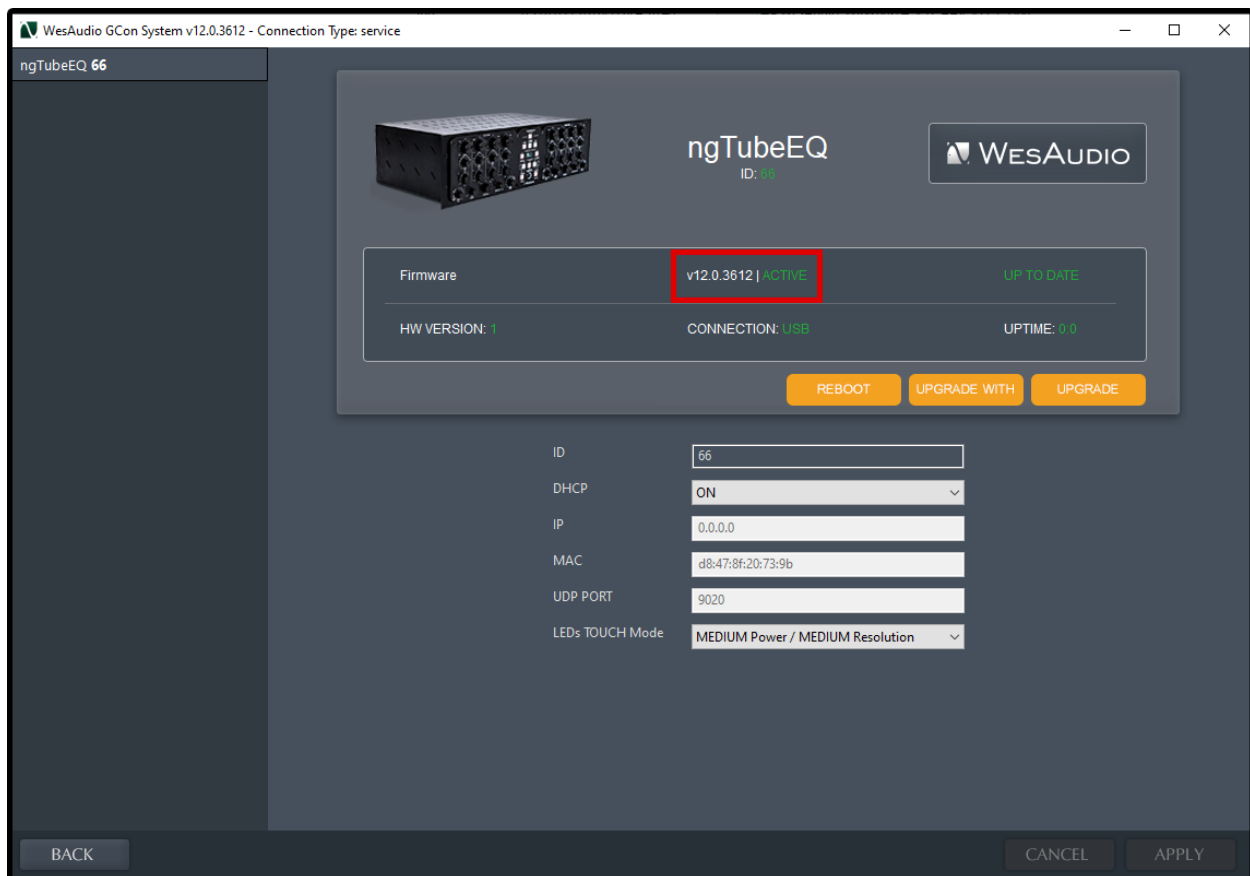
- **For OSX:** Access it at “/Applications/WesAudio/GConManager.”
- **For WINDOWS:** Find it in the folder chosen during the installation phase, typically “c:/Program Files x86/WesAudio/GConManager.exe” by default.

### Main Features:

- **Firmware Updates:** Easily upgrade your device's firmware to the latest version.
- **Configuration Settings:** Modify unit settings, such as IP address configuration, to suit your needs.
- **Diagnostics:** Run diagnostic tests to ensure your unit is functioning correctly.
- **External Controller Setup:** Configure external controllers, for instance, for the ngLeveler.
- **Standalone Operation:** Control units directly without the need for a DAW (Digital Audio Workstation).

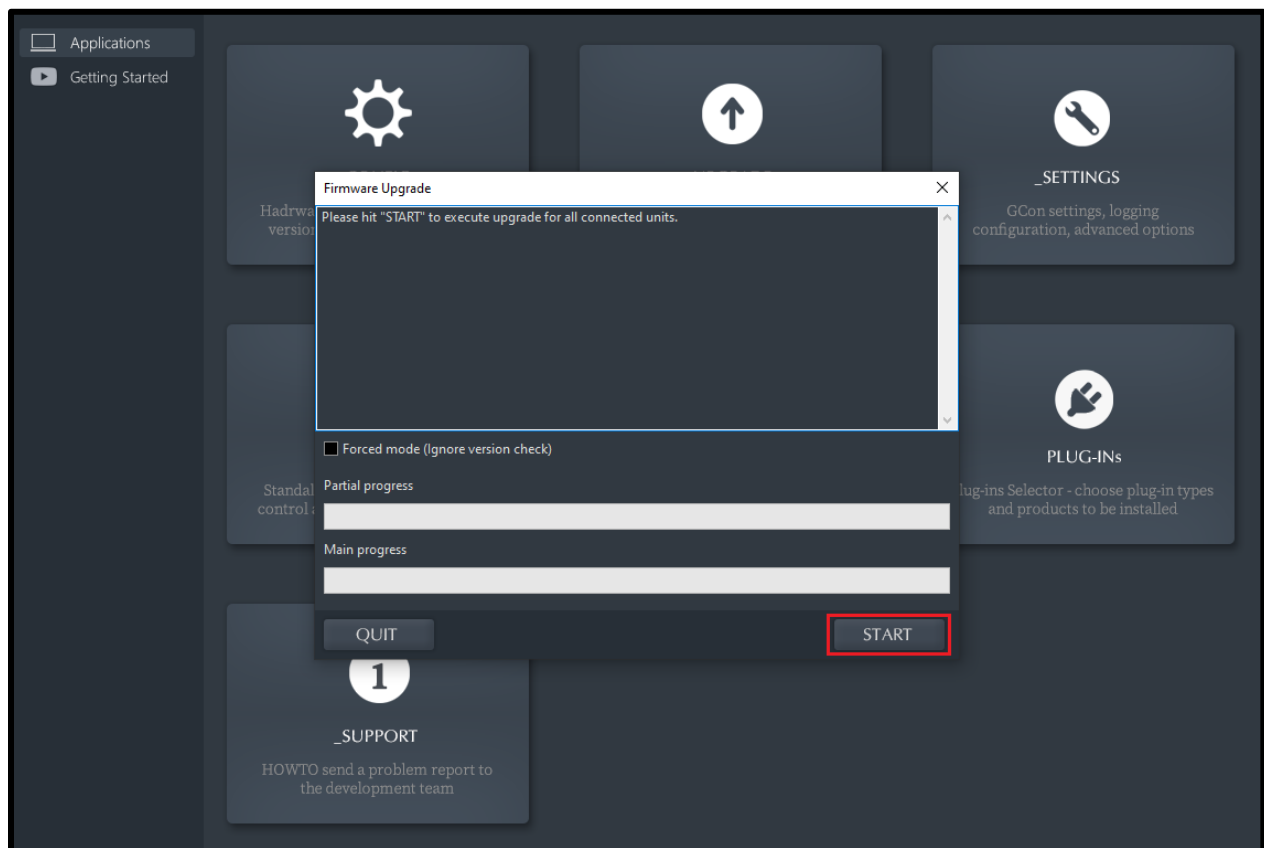
## 4.3 How to check Firmware version

Each device communicates its firmware version to your workstation, establishing compatibility between your host application and the connected device. To verify or perform a firmware upgrade, please use the GConManager \_CONFIG application. Additionally, the firmware version is displayed on the device's LCD screen immediately upon startup.



## 4.4 How to perform firmware upgrade

To update the firmware, navigate to the GConManager UPGRADE section and press the “Start” button. This initiates the update process for any modules that are not currently aligned with the latest version of your host software.



## 4.5 Set up GCon Connection

This chapter outlines potential setup configurations and details the primary steps for configuration.

It's important to recognize that audio signals should be transmitted through XLR connectors. The USB and Ethernet ports are designed solely for managing unit configurations using the GCon Protocol.

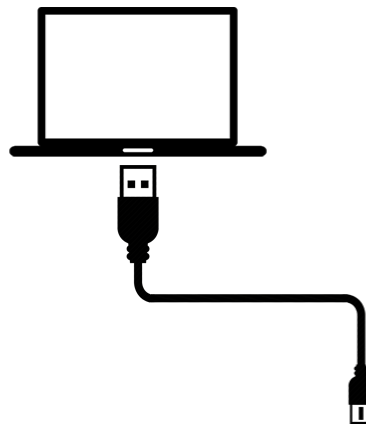
Broadly speaking, the ngBusComp supports two types of connections:

- **USB 2.0** or higher.
- **Ethernet 10/100**, utilizing the UDP protocol for LAN within a single subnet.



## 4.5.1 USB

To directly link your ngBusComp unit to your workstation, simply use a USB cable to connect it to any available USB 2.0+ port on your computer.



## 4.5.2 Ethernet

The ngBusComp, like any network-enabled device, offers flexibility in connectivity to your workstation through the following methods:

- **Local Area Network (LAN) Connection:** By integrating the ngBusComp into your LAN, it becomes accessible from various devices within the network, allowing for versatile placement and usage within your studio environment.
- **Direct Workstation Connection:** For a straightforward setup, the ngBusComp can be directly connected to your workstation. This method is ideal for simple, one-to-one configurations without the complexity of a network.

In certain scenarios, it might be necessary to manually assign IP addresses to both your workstation and the ngBusComp to ensure proper communication and functionality. The following illustrates a typical setup within a local area network, showcasing how different devices can interact with and utilize the ngBusComp's features:



(\*) In case you would like ngBusComp to join already existing network, most probably your workstation has IP address already set up through static configuration entry, or through DHCP (by your router).

### 4.5.2.1 Default network configuration via DHCP

Each ngBusComp unit is set to utilize **DHCP by default**, making it straightforward to connect your ngBusComp to your router—simply plug it in, and you're good to go! If you're interested in altering this setup, the following next chapters will guide you through changing the configuration. To establish static IP addresses for your devices, you must undertake two key steps:

**Disable DHCP:** This ensures that your device does not automatically obtain an IP address from the network, allowing for manual configuration of a static IP address.

**Configure a Static IP Address:** Once DHCP is disabled, you can assign a specific, unchanging IP address to your device.

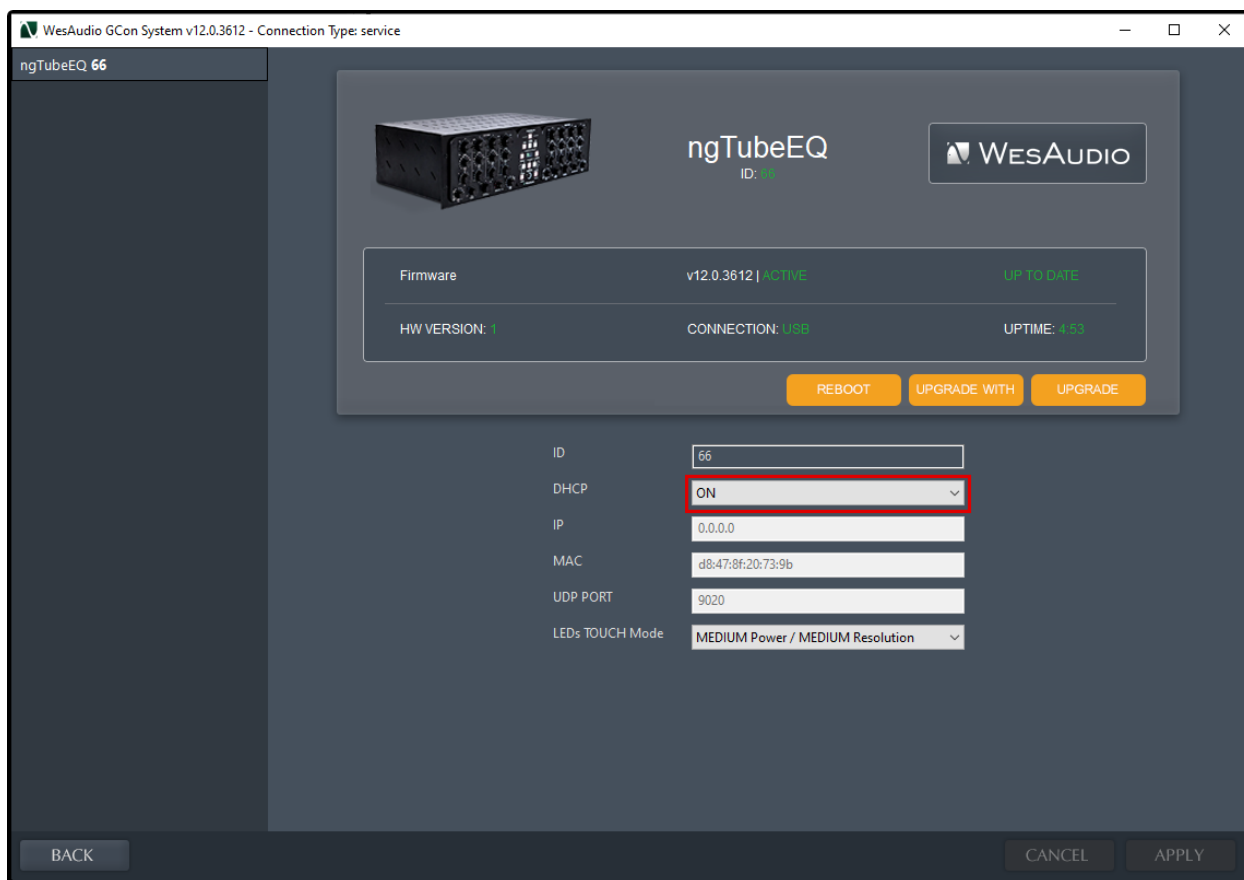
Detailed instructions for both procedures are provided in the subsequent chapters.



### 4.5.2.2 Enable/Disable DHCP

To toggle the DHCP setting on your ngBusComp unit to either enabled or disabled, follow these steps:

- **USB Connection:** Begin by connecting your ngBusComp directly to your workstation using a USB cable. This step is crucial because altering network configurations might result in a loss of connectivity with your device. A direct USB connection will remain as a fallback for reconfiguration.
- **Launch GConManager:** Open the GConManager software and proceed to the \_CONFIG application.
- **Select Your Device:** Within GConManager, find and select your ngBusComp from the list displayed in the elements tree on the left side.
- **Adjust DHCP Setting:** Modify the DHCP option to match your requirements—either turning it "ON" for automatic IP address assignment or "OFF" for static IP configuration. Following this adjustment, the unit will undergo a restart, after which your connection to the ngBusComp should automatically re-establish.



*Before transitioning from a USB connection to Ethernet, it's crucial to configure the appropriate IP address on your ngBusComp. This setup ensures seamless communication between the device and your network. The subsequent chapter will guide you through the process of establishing the correct IP settings.*

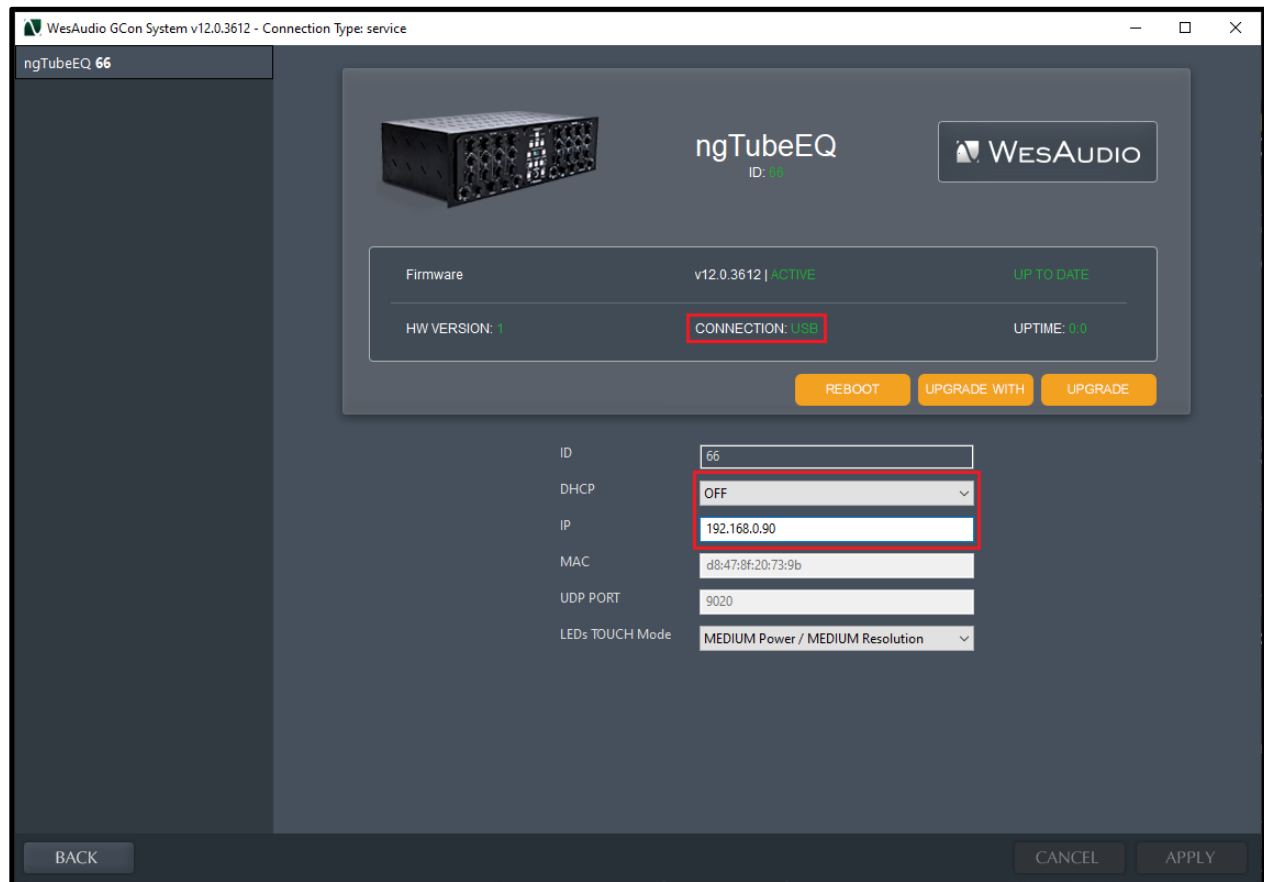
### 4.5.2.3 Set Up Static IP Address

There are a few situations where manually configuring the IP address for your ngBusComp might be necessary:

- **Non-DHCP Router:** If your router does not support DHCP, you will need to manually set the IP address to ensure the ngBusComp can connect to the network.
- **Manually Configured LAN:** For networks set up with manual configurations, such as through a hardware switch, your ngBusComp will require a manual IP setup to match the network's settings.
- **Direct Workstation Connection:** If you prefer to connect your ngBusComp directly to the Ethernet port on your workstation, a manual IP configuration is needed for the device to communicate effectively with your computer.

To configure the IP address for your ngBusComp, the process is similar to setting up other devices, with slight adjustments for device-specific steps. Here's how you do it:

- **USB Connection:** Initially, connect your ngBusComp directly to your workstation using a USB cable. (If you've already established a connection to the ngBusComp via an Ethernet cable and can access its settings, this step might not be necessary).
- **Launch GConManager:** Open the GConManager software on your computer and proceed to the "\_CONFIG" application.
- **Select Your Device:** From the device list on the left side of the screen, select your ngBusComp unit.
- **Adjust DHCP Settings:** If the DHCP option is enabled ("ON"), change it to "OFF." This will necessitate a restart of the unit, after which the connection should automatically be re-established.
- **Set the IP Address:** Input the IP address you wish to assign to your ngBusComp in the provided field and press the 'Apply' button. The unit will undergo a restart to apply the new network settings. Once it powers back up, the connection with your ngBusComp will be re-established under the new IP configuration.
- After successfully configuring the IP address, you can now disconnect the USB cable from your ngBusComp and connect it to your network using an Ethernet cable. This will enable network-based communication and control according to the new settings you've applied.



### 4.5.3 Direct connection – setting IP address on PC/MAC

Connecting your ngBusComp directly to a Mac or PC via Ethernet requires a few steps to ensure seamless communication. Here's a concise tutorial to guide you through the process:

#### For Both Mac and PC

##### Step 1: Prepare Your Equipment

- Ensure you have a standard Ethernet cable available.
- Your ngBusComp should be powered off before making any connections.

##### Step 2: Connect the Ethernet Cable

- Plug one end of the Ethernet cable into the Ethernet port on your ngBusComp.
- Connect the other end of the Ethernet cable to the Ethernet port on your Mac or PC.

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## For Mac

### Step 3: Configure Network Settings

- Go to **System Preferences > Network**.
- Select the Ethernet connection from the list on the left. If it's not already configured, it may appear as a new connection with a green dot and say "Connected".
- Click on the "Advanced" button, then go to the TCP/IP tab.
- Configure the IPv4 setting to "Manually" or "Using DHCP with manual address", depending on your needs.
  - If selecting "Manually", enter the IP address that matches the network settings of your ngBusComp.
- Click "OK", then "Apply" to save your settings.

## For PC (Windows 10/11)

### Step 4: Configure Network Settings

- Go to **Settings > Network & Internet > Ethernet**.
- Click on your Ethernet connection.
- Scroll down and select **Edit** under IP assignment.
- In the Edit IP settings drop-down, choose "Manual".
- Enable "IPv4" by toggling it On, then fill in the IP address, Subnet mask, and Gateway based on your ngBusComp network settings.
- Click "Save" when done.

### Final Step for both Mac and PC

- Power on your ngBusComp.
- Ensure any necessary software or drivers for ngBusComp operation over Ethernet are installed on your computer.
- If required, adjust the ngBusComp's network settings to ensure they are compatible with your computer's network configuration. This might include setting a static IP address on the ngBusComp that is in the same subnet as your computer but outside your DHCP range to avoid IP conflicts.

You should now be able to communicate directly between your ngBusComp and computer via Ethernet, allowing for device management and control without a router or network switch.

## 5 Digital Control / Recall

This chapter delves into the comprehensive options available for managing ngBusComp and automating its settings. The cornerstone of ngBusComp's automation capabilities is its integration with Digital Audio Workstations (DAW) through a plugin, which is available in all common formats. This seamless convergence between hardware and digital software opens a wide array of creative possibilities and enhances workflow efficiency.

### DAW Plugin Control:

DAW plugin control bridges the analog-digital divide, enabling users to manipulate hardware settings directly from their DAW. This fusion of the tactile and the virtual is not merely convenient but transformative, changing how producers and engineers interact with their gear.

### Benefits of DAW Plugin Control:

- **Precision and Recall:** The ability to precisely recall settings for sessions is invaluable, ensuring mixes can be revisited or altered without the need to manually reconfigure the hardware. This feature is crucial for those working on multiple projects or needing to maintain consistency across sessions.
- **Automation Capabilities:** Integration with the DAW allows for the automation of every ngBusComp parameter within the digital environment. This feature provides dynamic changes in settings over time, infusing tracks with movement and vitality without manual intervention.
- **Workflow Efficiency:** Manually adjusting settings on hardware units can be cumbersome, particularly in complex setups. DAW plugin control simplifies this process, facilitating quick changes and A/B comparisons without physical interaction with the unit, thereby streamlining the production process.
- **Enhanced Creative Potential:** Merging the analog warmth with digital control flexibility broadens the creative spectrum, enabling real-time experimentation and the achievement of effects that might be challenging or impractical to accomplish on the hardware alone.
- **Accessibility:** DAW plugin control ensures full accessibility and adjustability of ngBusComp features from the workstation, a boon for those with spatial constraints or other limitations preventing direct access to their hardware.

In essence, ngBusComp's DAW plugin integration marries the rich, analog sound quality with the precision and versatility of digital control. This not only amplifies the functionality of ngBusComp but also elevates the music production process, offering unprecedented control and flexibility in a traditionally analog setup.

## 5.1 DAW Plug-in

The ngBusComp plug-in extends comprehensive control over all parameters of the unit, ensuring seamless integration into any digital audio workstation (DAW) environment. Designed to be versatile and accessible, it supports all common plug-in standards, including VST2, VST3, AU (Audio Units), and AAX, making it compatible with a wide range of software platforms.



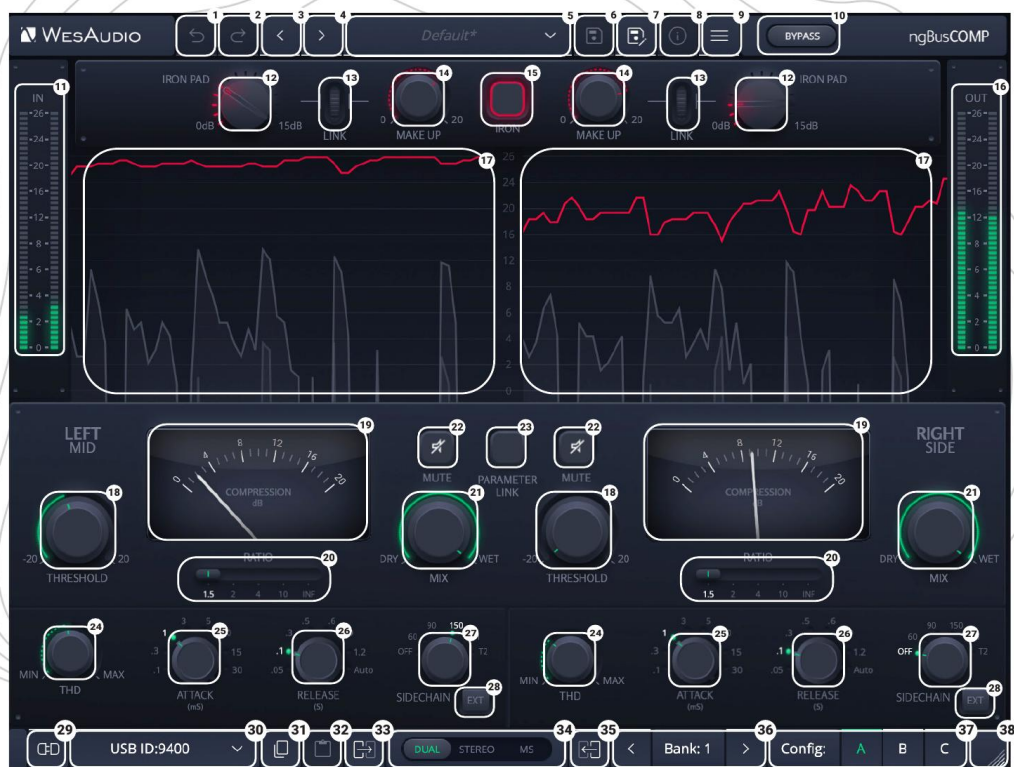
The ngBusComp offers versatility through two types of plug-ins to accommodate various production needs:

- **Stereo Plug-in:** This variant provides comprehensive control over both channels of the hardware unit, enabling a wide range of operational modes including dual mono, stereo, and mid-side processing. It's ideal for cohesive processing of stereo tracks or linked dual mono operations, allowing for intricate spatial and tonal adjustments.

- **Mono Plug-in:** Designed for singular channel use, the mono plug-in connects to only one channel of the hardware unit, though two instances of the plug-in can be used concurrently with a single ngBusComp for true dual mono operation. This setup is perfect for treating separate mono sources independently—such as processing a kick drum on one channel and a snare drum on the other. In this configuration, each channel of the hardware operates as an independent mono unit, providing flexibility for targeted processing on individual tracks.

## 5.1.1 Stereo Plug-in – Dual and MS Mode

### Analog Sound Digital Recall





For detailed explanations of each control and its functionality, users are encouraged to consult the chapter titled "Front Panel Functions." This section provides comprehensive insights into how to interact with the ngBusComp, whether you're adjusting parameters on the physical unit or via the plug-in.

1. **Undo:** The Undo feature in the ngBusComp plug-in allows users to revert to the previous state before the most recent adjustment was made. This function is essential for quickly correcting mistakes or reassessing changes without permanent consequences to the settings.
2. **Redo:** Following an Undo action, the Redo function permits users to reapply the last change that was undone. This feature ensures that no adjustment is final until the user is satisfied, providing an additional layer of flexibility in tweaking the settings.
3. **Previous Preset:** Loads the previous preset from preset database.
4. **Next Preset:** Loads the next preset from preset database.
5. **Preset Selector:** Allows for the selection, viewing, and deletion of presets.
6. **Preset Save:** Saves currently selected presets.
7. **Preset Save As:** Facilitates saving current settings as a preset providing name and preset details.
8. **Preset Info:** Displays details of the currently loaded preset.
9. **Menu:**
  - **Resize:** Adjusts the GUI size (75%/100%/125%/150%/175%/200%), catering to different screen sizes and user preferences.
  - **Reset Parameters to Default:** Resets all plugin parameters to their default states.
  - Shows currently installed plug-in version.
10. **Bypass:** Allows to engage/disable bypass on the hardware unit.
11. **Input Meter:** The Input Meter visually represents the input levels for both hardware channels, utilizing an analog scale that ranges from 0dBu to 24dBu. This feature provides users with an intuitive and accurate way to monitor signal strength entering the ngBusComp, ensuring levels are kept within an optimal range for the best possible sound quality.
12. **Iron Pad:** Engages a passive attenuation circuit, reducing the signal from 0dB to 15dB. This allows driving the input harder without overloading, ideal for working with hotter signals.
13. **Iron Link:** Link between Output and Iron Pad in RED mode
14. **Make Up:** Adjusts output gain to compensate for level reduction caused by compression, ensuring consistent loudness.
15. **Iron:** Engages a custom transformer stage, adding warmth, subtle saturation, and vintage analog character to the signal.
16. **Output Meter:** The Output Meter visually represents the output levels for both hardware channels, utilizing an analog scale that ranges from 0dBu to 24dBu. This feature provides users with an intuitive and accurate way to monitor signal strength leaving the ngBusComp, ensuring levels are kept within an optimal range for the best possible sound quality.
17. **Gain Reduction Graph:** Displays the real-time gain reduction applied to the signal, helping users monitor and adjust compression settings for precise dynamic control.
18. **Threshold:** Sets the level at which the compression or limiting effect kicks in, allowing fine control over dynamic range management.
19. **Meter:** Displays the real-time level of the processed signal, providing visual feedback on the signal's amplitude.
20. **Ratio:** Sets the amount of compression applied once the signal exceeds the threshold, determining how much the input signal is reduced. Switches between 1.5/2/4/10/INF.

21. **Mix:** Balances between the wet (processed) and dry (unprocessed) signal, allowing for parallel compression or blending effects.
22. **Mute:** The Mute function in the ngBusComp plug-in allows users to enable or disable the mute feature for individual channels. This control provides a straightforward way to temporarily silence a channel without altering any of its settings, facilitating quick comparisons or isolations in the mix.
23. **Parameter Link:** Links parameters between channels for stereo or mid-side operation. When enabled, adjustments made to one channel affect the other, maintaining consistent relative settings across both channels.
24. **THD:** Provides adjustable control over the introduction of harmonic distortion, ranging from 0% to 100%. This feature allows for the precise addition of analog warmth and character, enhancing the harmonic complexity of the signal with subtle to pronounced saturation effects.
25. **Attack:** Defines how quickly the compressor or limiter responds to signals exceeding the threshold, affecting how tightly the effect grabs transients.
26. **Release:** Controls how fast the processor releases gain reduction once the input signal falls below the threshold, affecting the smoothness or punchiness of the compression.
27. **Sidechain:** Offers a configurable sidechain filter with selectable frequency options (60/90/150Hz/T1/T2) to tailor the compressor's response.
28. **EXT:** Activates the external sidechain input, enabling you to process the signal using an external source via dedicated TRS inputs.
29. **Toggle Connection Button:** This button toggles the connection status ON/OFF. It functions only when a connection ID has been selected using the "Select Connection Button."
30. **The Select Connection Button** within the ngBusComp plug-in serves as a gateway to establishing and managing connections with devices that support the GCon protocol. This feature simplifies the process of identifying and selecting the hardware unit to be controlled, providing a user-friendly interface for seamless integration between the plug-in and physical devices.

**Upon Initiating Connection, It Visualizes the Connection State as Follows:**

- **USB:** This label signifies a connection established through USB, offering a direct link between the hardware unit and the workstation.
  - **ETH:** This label indicates an Ethernet connection, showcasing the ability to connect over a network for potentially more flexible setup options.
  - **Connection ID:** The unique identifier for the connected hardware unit is displayed, allowing for easy recognition and management of multiple devices. Accompanying this ID, the connection status is visually indicated to inform the user of the current state:
    1. **ON:** A solid white font denotes a successful connection, indicating that communication between the plug-in and the hardware unit is active.
    2. **OFF:** A solid gray font signifies that the connection is not established, alerting the user to a disconnect or other issue preventing communication.
    3. **Connecting:** A gray italic font is used to represent the process of establishing a connection. If this state persists for an extended period (more than 5 seconds) without successful connection, it suggests a potential issue requiring troubleshooting or support consultation
31. **Copy:** Enables users to copy the current parameter state.
  32. **Paste:** Enables users to paste the current parameter state, facilitating quick duplication of settings.
  33. **Copy Left/Mid to Right/Side:** This feature enables quick duplication of settings from the left/mid channel to the right/side channel, simplifying the alignment of parameters between the two.
  34. **Mode:** Sets units mode to be either DUAL, STEREO or Mid/Side.

35. **Copy Right/Side to Left/Mid:** This feature enables quick duplication of settings from the right/side channel to the left/mid channel, simplifying the alignment of parameters between the two.
36. **Config Bank:** Selects between configuration banks, each containing three configurations. This feature supports automation for changing unit settings within a session or a song.
37. **Fast Preset Change (A/B/C):** Quickly toggles between configs A/B/C without affecting connection-related parameters like the Connection ID.
38. **Resize:** Adjusts the display size or layout of the interface.

## 5.1.2 Stereo Plug-in - Stereo Mode

In Stereo mode, the Stereo plug-in shares the same controls as in Dual and MS modes. The key difference is that Stereo mode consolidates the interface to display metering only for one channel (True stereo compression).



### 5.1.3 Mono Plug-in

Mono plugins offer the flexibility to connect and control each channel of the ngBusComp independently, making them ideal for processing separate mono sources, such as a kick drum and snare. This capability allows for comprehensive control over the analog circuit, including the ability to switch between internal presets (A/B/C), tailored for individual channel enhancements.



The layout of the mono plugin closely mirrors that of the hardware, maintaining the intuitive interface and design of the 2-channel stereo plugin version. However, there's a notable difference: the unit mode buttons (DUAL / STEREO / MS) are absent in this configuration. This is because, in mono plugin mode, the ngBusComp automatically operates in DUAL unlinked mode, optimizing it for independent channel processing.

Key Features of True Dual-Mono Operation with the Mono Plugin:

- **IRON Mode Flexibility:** Each channel's IRON mode setting can be adjusted independently, providing tailored harmonic texture and saturation for each mono source.
- **Selective A/B/C Preset Control:** To switch between the A/B/C presets from the hardware's front panel, you must hold the touch encoder specific to the channel you wish to adjust. This feature ensures precise control over the sound shaping and character of each channel, reflecting the nuanced differences between mono sources.

This design philosophy emphasizes the ngBusComp's versatility and adaptability, allowing audio engineers to achieve detailed and characterful processing on individual mono tracks, leveraging the analog warmth and digital precision that the ngBusComp is known for.

## 5.1.4 Automation When Parameter Link Is Enabled

It's important to understand that when using the PARAMETER LINK function to synchronize channels, automating just one channel is sufficient, as the linked channel will mirror the adjustments automatically. Should both channels be automated simultaneously, each will attempt to update the other, inevitably causing unpredictable and undesired outcomes. This feature is designed to streamline workflow and ensure cohesive sound processing across channels, but it requires careful management of automation to avoid conflicts.

## 6 Other Functions

In addition to its core features, ngBusComp includes several other functions that enhance its versatility and user experience. These functions, while not as prominently featured as the main controls, play a crucial role in the unit's overall functionality and ease of use. Understanding these additional features will enable users to fully exploit the capabilities of the ngBusComp, optimizing their workflow and achieving the best possible sound quality.

### 6.1 Operation modes

ngBusComp can operate in following modes:

- Standalone – without any digital connection to a workstation.
- Stereo Plug-in – one plug-in manages both channels.
- Mono Plug-in – Two plug-ins can independently connect to each channel.

There are some slight differences in those three modes when it comes to some global unit's functions:

	<b>Bypass</b>	<b>A/B/C buttons on front panel</b>	<b>IRON mode in Mid-Side</b>	<b>Available Modes</b>
<i>Standalone</i>	Bypass available for each channel, can be linked via "Parameter link" button.	Changing A/B/C preset will always update parameters on both channels	IRON mode is permanently linked for both channels– it is not possible to engage iron mode for only one channel.	Dual mono, Stereo, Mid-Side
<i>Stereo plug-in</i>	Bypass is permanently linked – One bypass for whole unit will affect both channels.	Changing A/B/C preset will always update parameters on both channels.	IRON mode is permanently linked for both channels– it is not possible to engage iron mode for only one channel.	Dual mono, Stereo, Mid-Side
<i>Mono plug-in</i>	Bypass available for each channel.	A/B/C LED is disabled upon connection to a plugin, presets can be changed: <ul style="list-style-type: none"> <li>• From a plug-in level,</li> <li>• Holding touch sensitive encoder activates A/B/C LED for particular channel, which can be changed by pressing corresponding preset button.</li> </ul>	N/A -Connection to mono plugin permanently sets dual mono mode.	Dual mono



## 6.2 Internal Memory Management

The ngBusComp is designed with robust internal memory management to ensure users can store and recall their preferred settings efficiently, catering to various operational scenarios and user needs.

Sources of Parameter Persistency:

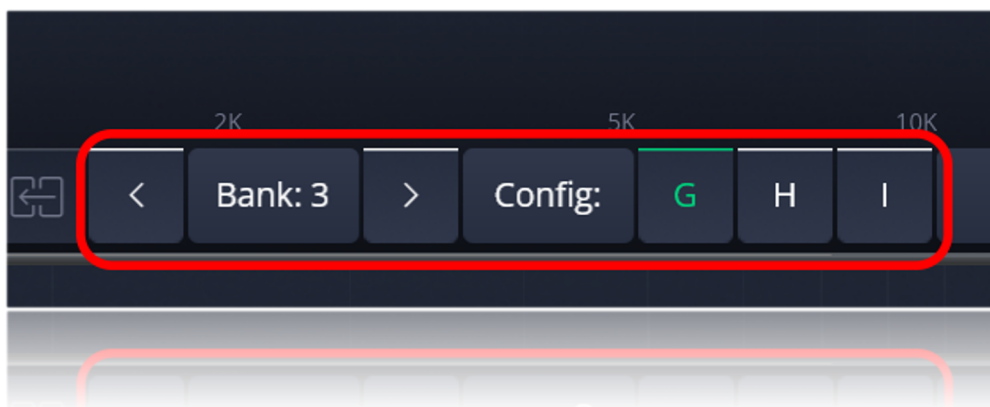
- **A/B/C Presets:** Directly stored in the ngBusComp's internal memory, these presets offer quick access to three distinct settings configurations, readily available even after a power cycle.
- **Unlimited DAW Plugin Presets:** Users can save an unlimited number of presets within the DAW plugin, providing vast flexibility for project-specific settings.

### 6.2.1 Fast Presets A/B/C

Fast presets are designed for quick retrieval, serving as three memory banks for easy comparison of the unit's settings. These presets are synchronized with the connected plugin, ensuring consistency across hardware and software environments.

### 6.2.2 Preset Banks Feature

The Preset Bank feature allows you to configure different parameter states and enables additional parameter configurations (A/B/C) for flexible use. Having multiple memory banks can be particularly beneficial when mixing multiple songs within the same session. The Memory Bank parameter can be automated in the DAW, helping to maintain different settings across various sections of a session or between different songs within a single session. This feature is especially useful during the mastering phase, where multiple songs are often processed in one session.





## 7 Troubleshooting

If you encounter any of the following issues:

- No Sound Output or Signal Loss
- Unexpected Distortion
- Thumping or Low-End Artifacts
- Inconsistent Compression
- No Response to DAW Automation
- Excessive Heat

Please visit the WesAudio FAQ site <https://wesaudio.com/faq/> for detailed troubleshooting steps and solutions.

## 8 Abbreviations and terms

**GCon** is a high-speed communication protocol developed to enable complete management and recall of analog devices. It's important to note that GCon is solely focused on device control and management; it does not facilitate the transfer of audio signals. This protocol is instrumental in bridging the gap between analog warmth and digital convenience, allowing users to enjoy the best of both worlds without compromising on sound quality or control flexibility.

## 9 Warranty

WesAudio is committed to delivering products of the highest quality, designed for durable and reliable performance over many years, assuming proper care, usage, transport, and storage. Our products come with a two-year warranty covering defects in parts and workmanship from the original date of purchase. This warranty is extendable to any future owner within the warranty period, ensuring continued protection.

### **Warranty Coverage:**

- The warranty is valid for two years from the date of the original purchase.
- It is transferable to any subsequent owner within this period.

### **Exclusions:**

- The warranty does not cover normal wear and tear.
- It excludes damages due to misuse, negligence by the customer, accidental impacts, unauthorized modifications or repairs, cosmetic issues, and damages from shipping.

### **Warranty Service:**

- Should a product exhibit defect in parts or workmanship during the warranty period, WesAudio will, at its discretion, repair or replace the defective components at no charge, assuming the customer provides valid proof of purchase.
- The product must retain its original factory serial number to be eligible.
- Customers are responsible for shipping costs to WesAudio for warranty service. WesAudio will cover the return ground shipping costs.

This comprehensive warranty underscores our dedication to quality and customer satisfaction, ensuring your WesAudio products perform flawlessly for years to come.