

Analog Sound Digital Recall



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ng78

User manual

EN

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Thank You for the purchase of **ng78**

Next Generation Stereo FET Compressor with digital recall

With kind regards

Radoslaw Wesolowski and Michal Weglicki

Next Generation FET Compressor with digital recall

FET compressors have long defined the sound and dynamic control of countless recordings in professional studios. The **ng78** continues this legacy with a **dual-channel, fully analog FET design** enhanced by **digital recall and DAW integration**. Each channel provides an **extended attack range up to 20 ms**, offering precise transient control while preserving the fast response and distinctive punch characteristic of FET compression. The newly introduced **2:1 ratio** enables subtle, musical compression, making the ng78 equally suited for mix-bus, tracking, or mastering applications.

The **ng78** represents the perfect fusion of **classic analog tone and modern workflow**, delivering the unmistakable sound of a vintage FET compressor with the flexibility and precision of today's digital control.



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1 Main Features

ng78 offers a sophisticated blend of analog audio excellence with digital precision, designed for professionals seeking uncompromising sound quality and versatile control:

- **100% Analog Stereo FET Compressor:** Dual-channel design based on classic FET topology, offering punchy, fast compression with true stereo operation.
- **Digital Recall and DAW Integration:** Full parameter control, automation, and instant recall via USB or Ethernet connection and dedicated plug-in.
- **Selectable Compression Ratios:** Five ratio settings (**2:1, 4:1, 8:1, 12:1, 20:1**) plus the “All-Buttons-In” mode for classic aggressive FET behavior.
- **Extended Attack and Release Ranges:** Attack from **20 µs to 20 ms**, release from **50 ms to 1100 ms**, allowing precise transient shaping.
- **Parallel Compression (MIX Control):** Adjustable blend between dry and compressed signals for flexible modern compression workflows.
- **Sidechain Filter Section:** Multiple high-pass and high-shelf filter options to tailor how the detector reacts to the input signal.
- **Detector Linking:** Dual-mono or true stereo linking via **Dynamic Link Technology**, ensuring accurate stereo image and balanced compression.
- **Saturation Mode (SAT MODE):** Dedicated mode that introduces fixed compression and harmonic saturation for additional analog coloration.
- **THD Control:** Selectable levels (**Off / Low / Mid / High**) to introduce controlled harmonic distortion independent of compression or saturation mode.
- **Carnhill Transformer Output Stage:** Adds warmth, depth, and analog tone coloration.
- **Preset A/B Memories:** Internal memories for instant comparison of two different compressor setups.
- **True Bypass:** Hard relay bypass for transparent signal path when disengaged.
- **Comprehensive Metering:** Independent meters for Input, Output, and Gain Reduction.
- **High Headroom (+24 dBu):** Ensures professional-level performance and compatibility with high-level studio gear.

2 Hardware

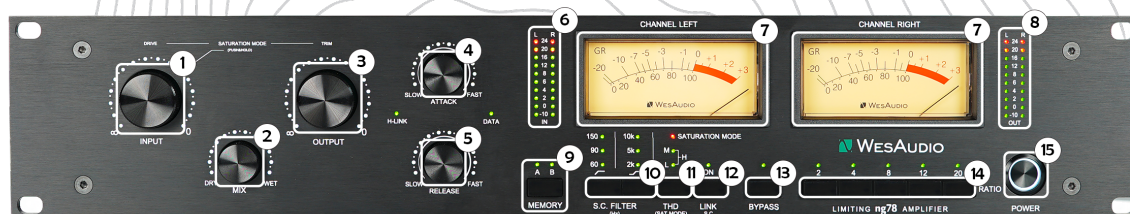
This chapter will go through all analog features and explain all hardware aspects of ng78.

2.1 Specification

Attack Time	20 μ s – 20ms
Release Time	50ms – 1100ms
Compression Ratio	2:1, 4:1, 8:1, 12:1, 20:1 (all possible combinations)
SC High Pass Filter	60Hz, 90Hz, 150Hz
SC High Shelf Filter	2kHz, 5kHz, 10kHz
Output Impedance	50 Ω
Frequency Response	20Hz-20kHz (+/- 1dB)
Signal to Noise Ratio SNR	SNR > 83dB
Max Signal Level	+24dBu
THD+N MIN	0.2%
Noise Floor	-95dBu
Power Consumption	14W
Unit Dimensions	88x483x235mm
Box Dimensions	580x420x320mm
Unit Weight	7 kgs
Box Weight	8 kgs
Balanced Output and Input	
Case Rack	2U
Warranty	2 years

2.2 Front Panel and Main Functions

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- 1) **INPUT/SAT MODE** – This knob has two functions:
 - a. Adjusts the level of the input signal entering the compressor.
 - b. Pushing the knob enable/disable saturation mode
 - 2) **MIX** – Blends the compressed (wet) and uncompressed (dry) signals for parallel compression.
 - 3) **OUTPUT** – Controls the level of the output signal leaving the compressor. Use this to compensate for gain reduction applied by the compression circuit.
 - 4) **ATTACK** – Sets the attack time from 20 microseconds to 20 milliseconds. The fastest attack occurs when the knob is fully clockwise; the slowest when fully counterclockwise.
 - 5) **RELEASE** – Sets the release time from 50 milliseconds to 1100 milliseconds. The fastest release occurs when the knob is fully clockwise; the slowest when fully counterclockwise.
 - 6) **VU IN Metering** – Displays the input signal level before any processing (-10dBu to +24dBu).
 - 7) **Gain Reduction Meter** – This meter shows the amount of gain reduction applied (**Note:** This meter is disabled when Saturation Mode is engaged or when Ratio is turned off).
 - 8) **VU OUTPUT Metering** – Displays the output signal level (-10dBu to +24dBu).
 - 9) **A/B** – Two memory slots that allow you to compare different compressor settings.
 - 10) **SC Filter EQ** – Controls two independent sidechain EQ sections:
 - a. **High-Pass Filter (HPF)** – allows to control the harmonic distortion applied to the wet signal, switchable between OFF/60/90/150Hz
 - b. **High Shelf Filter** – allows to tame high frequencies and emphasize high/mid-range content for more control over the top end, switchable between OFF/2/5/10kHz
 - 11) **THD/SAT MODE** – Adds harmonic content to the signal:
 - a. Possible options: OFF/LOW/MID/HIGH.
 - b. Pushing and holding this button will enable/disable saturation mode.
 - c. **Note:** When Saturation Mode is engaged, sidechain filters, attack, release, ratio controls, and gain reduction metering are disabled.
 - 12) **Side Chain Link** – Enable/disable the link between detectors for stereo or dual mono operation.
 - 13) **BYPASS** – Bypass switch.
 - 14) **RATIO** - Sets the compression ratio: **2:1, 4:1, 8:1, 12:1, 20:1**. Compression can be disabled by deselecting all ratios. Multiple ratios can be combined (e.g., “All Buttons In”) by pressing and holding one ratio button while engaging the others.
 - 15) **POWER Toggle (POWER)**: This switch toggles power to the unit.

2.3 Rear Panel

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1. **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.**

Failure to use the correct fuse may result in internal damage, blown components, or pose a safety risk. The correct fuse values and types for each voltage configuration are listed in the “[Voltage Selector and Fuses](#)” section of this manual. If you're unsure about the proper settings, consult a qualified technician or contact WesAudio support before powering the unit.

2. **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.

Digital Management Connections: The ng78 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.**

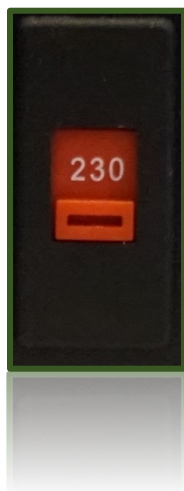
2.4 Audio Signal Connectivity

The ng78 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 ng78 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.**

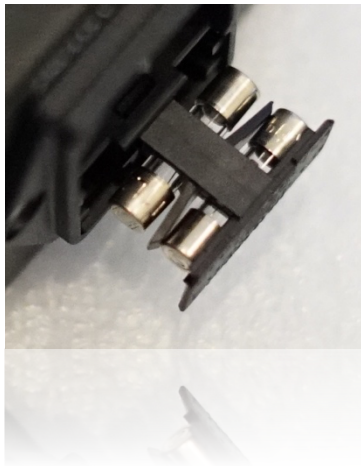


For proper operation, you can change the voltage and ensure the correct fuse is installed based on your voltage setting. Use:

- **630mA fuse (ZKT-0.63A) for 115V**
- **315mA fuse (ZKT-0.315A) 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.

2.5.3 Replacing the Fuse

In the event of a blown fuse, follow the instructions below to safely access and replace it.

Important: Ensure that the unit is powered off and the power cord is disconnected from the power source before proceeding.

2.5.3.1 Opening Fuse Holder

To open the fuse holder, use a small flat-head screwdriver.

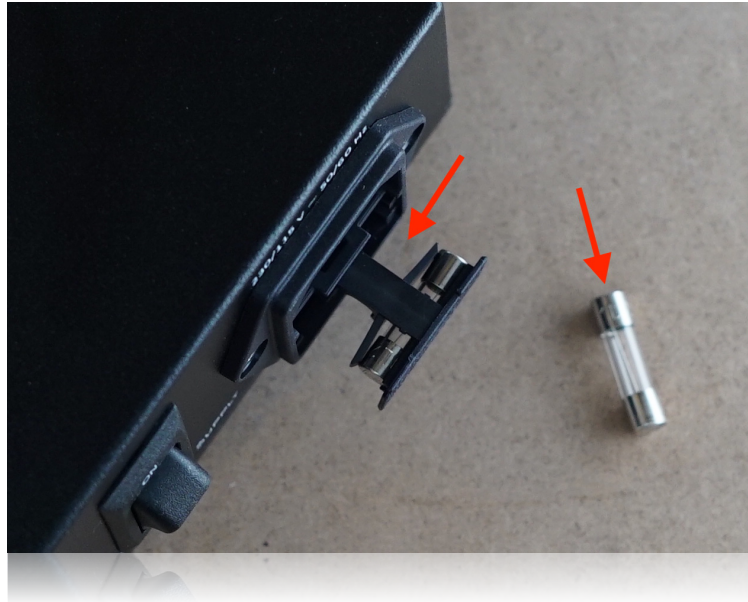
1. Insert the screwdriver into the slot of the fuse holder.
2. Gently pull the fuse holder open, as illustrated in the image below.



2.5.3.2 Changing the Fuse

Once the fuse holder is open, proceed with the following steps:

Remove the blown fuse (marked with indicators) by gently pressing on it until it disengages and drops out of the holder, as shown in the picture below.



Take the spare fuse located in the adjacent slot and insert it into the position of the removed fuse.



Close the fuse holder securely.

Your device is now ready for use.

3 Analog Processing

This chapter in depth describes the analog nature of ng78.

3.1 Signal Flow

The diagrams below illustrate the signal flow of the ng78.

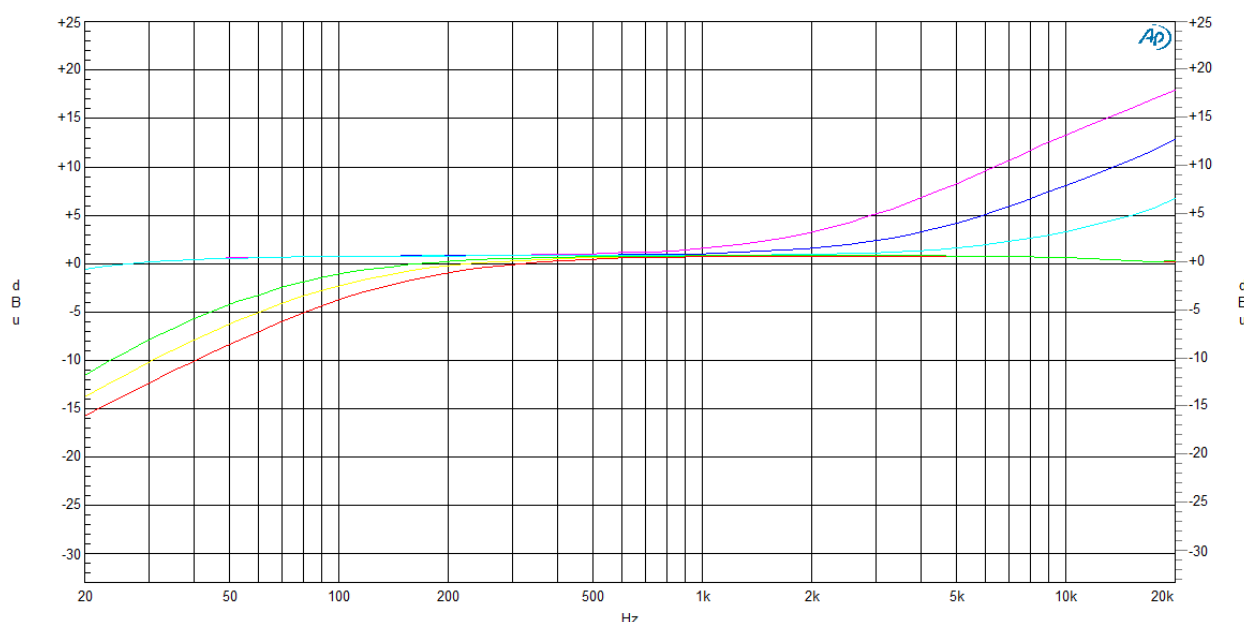


3.2 Side Chain EQ

The **ng78** features **two independent EQ sections** within the sidechain circuit:

- **High-Pass Filter (HPF):** 60 Hz, 90 Hz, and 150 Hz (**6 dB/octave**) – prevents the compressor from responding to low-frequency content, preserving the punch and clarity of the source material.
- **High-Shelf Filter:** 2 kHz, 5 kHz, and 10 kHz (**6 dB/octave**) – emphasizes high-frequency content in the sidechain, causing the compressor to react more strongly to treble. This can result in a slightly darker overall tonal balance depending on the selected settings.

These filters provide precise control over how the compressor responds to different frequency ranges, enabling tailored dynamic shaping for any source.



3.3 THD - Total Harmonic Distortion

The **THD circuit** in the ng78 introduces controlled harmonic content to the audio signal by leveraging the unit's FET compression circuitry. This circuit emphasizes **odd-order harmonics**, producing the classic tonal coloration associated with FET compressors. The ng78 provides **three selectable THD levels: Low, Mid, and High**, giving the flexibility in the intensity of harmonic enhancement. At **Low**, subtle harmonics are added, providing gentle warmth and slight coloration. The **Mid** setting increases harmonic content, adding character and presence without significantly affecting dynamics. The **High** setting generates a more pronounced effect, creating richer harmonic saturation suitable for more aggressive or creative processing.

THD operates independently of the standard compression controls, allowing to use harmonic enhancement either in combination with compression or on its own. The effect is fully analog, maintaining the integrity and speed of the FET circuit while adding musical coloration that can enhance tracks in both individual channels and stereo mixes.

3.4 Saturation Mode

The **Saturation Mode (SAT MODE)** is a unique operating mode in which the compression sidechain is triggered by an internal DAC generating a high-frequency sine wave (above 25 kHz) instead of the incoming audio signal. This establishes a **static compression level** - typically around 10 dB of gain reduction - allowing the unit to produce the harmonic distortion characteristic of FET compressors and to take full advantage of the THD circuit.

In this mode, the **INPUT** and **OUTPUT** controls interact inversely via the **DRIVE** knob: when DRIVE is set to maximum, INPUT is at its highest while OUTPUT is at its lowest, and vice versa. This configuration enables controlled **clipping**, as driving the FET circuit hard produces audible distortion. DRIVE is designed to maintain unity gain until clipping occurs, which may reduce signal peak levels while increasing the RMS level. To fine-tune the output, the **TRIM** control allows adjustment between approximately **-8 dB and +8 dB**.

Note: When Saturation Mode is active, the **Attack, Release, Sidechain Filter, Ratio, and Gain Reduction Metering** controls are disabled.

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

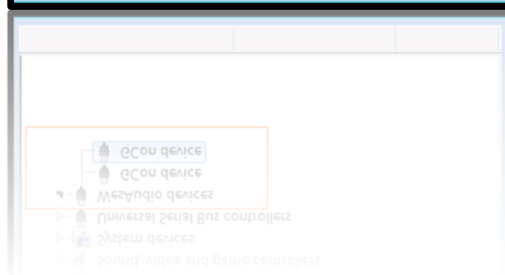
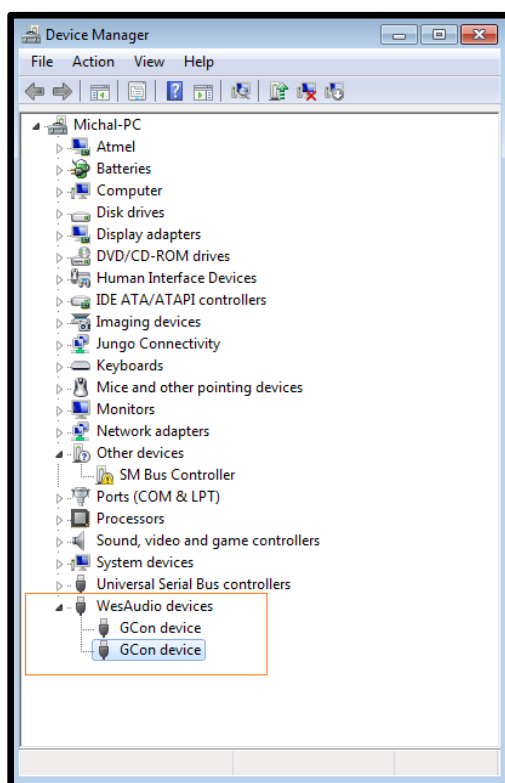
Due to the simpler nature of OSX architecture and its handling of USB devices, the primary consideration is to ensure all devices are connected before beginning the installation process. Once you initiate the installer application, you might encounter system warnings regarding the installer. In such 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, 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:

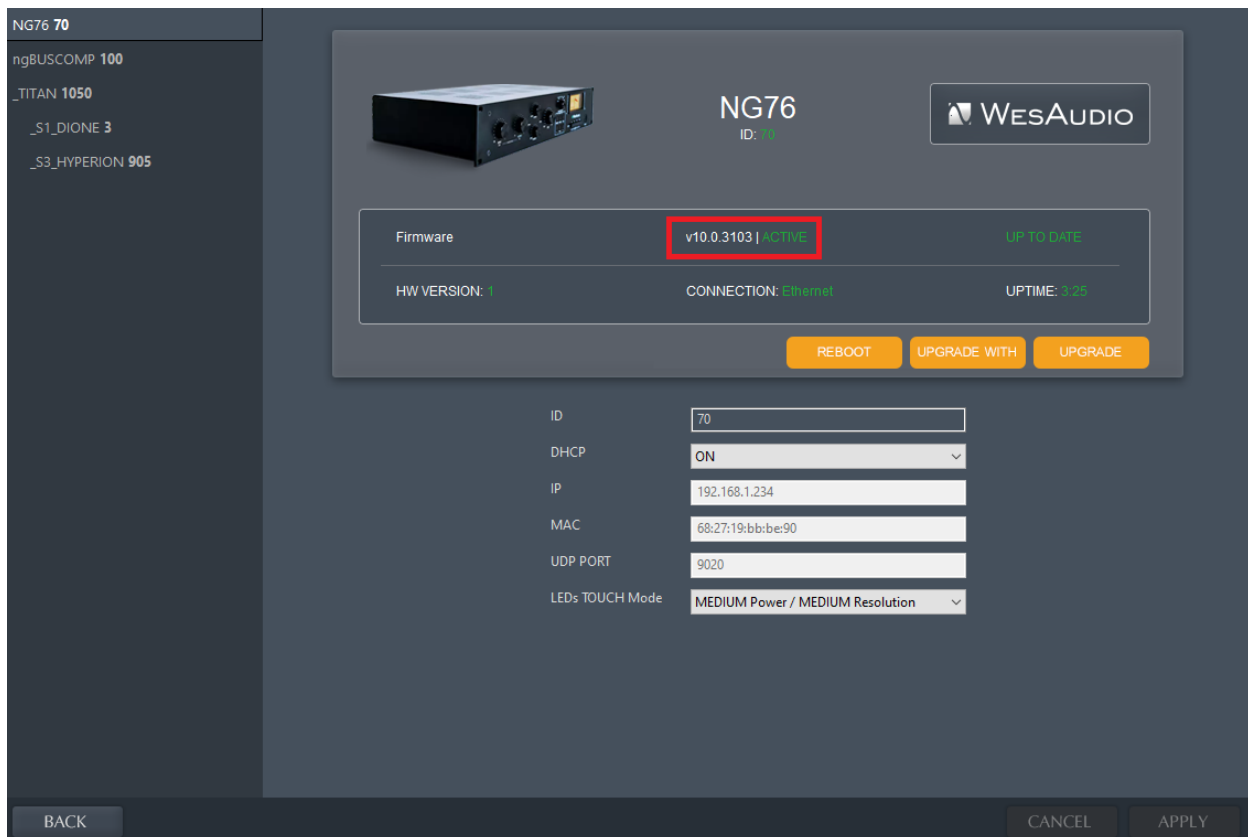
- **For OSX:** Access it at “/Applications/WesAudio/GConManager.”
- **For WINDOWS:** Find it in the folder chosen during the installation phase, typically “c:/Program Files x86/WesAudio/GConManager.exe” by default.

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).

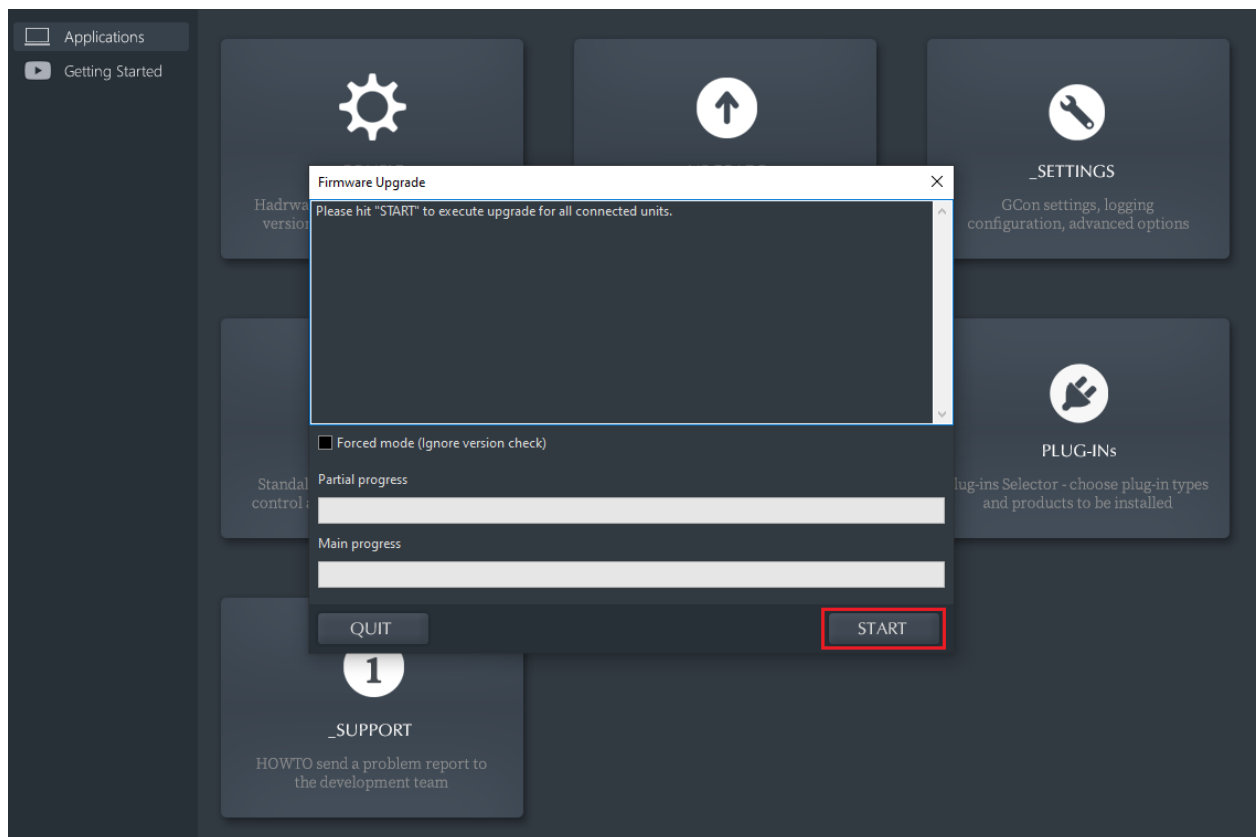
4.3 How to check Firmware version

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.

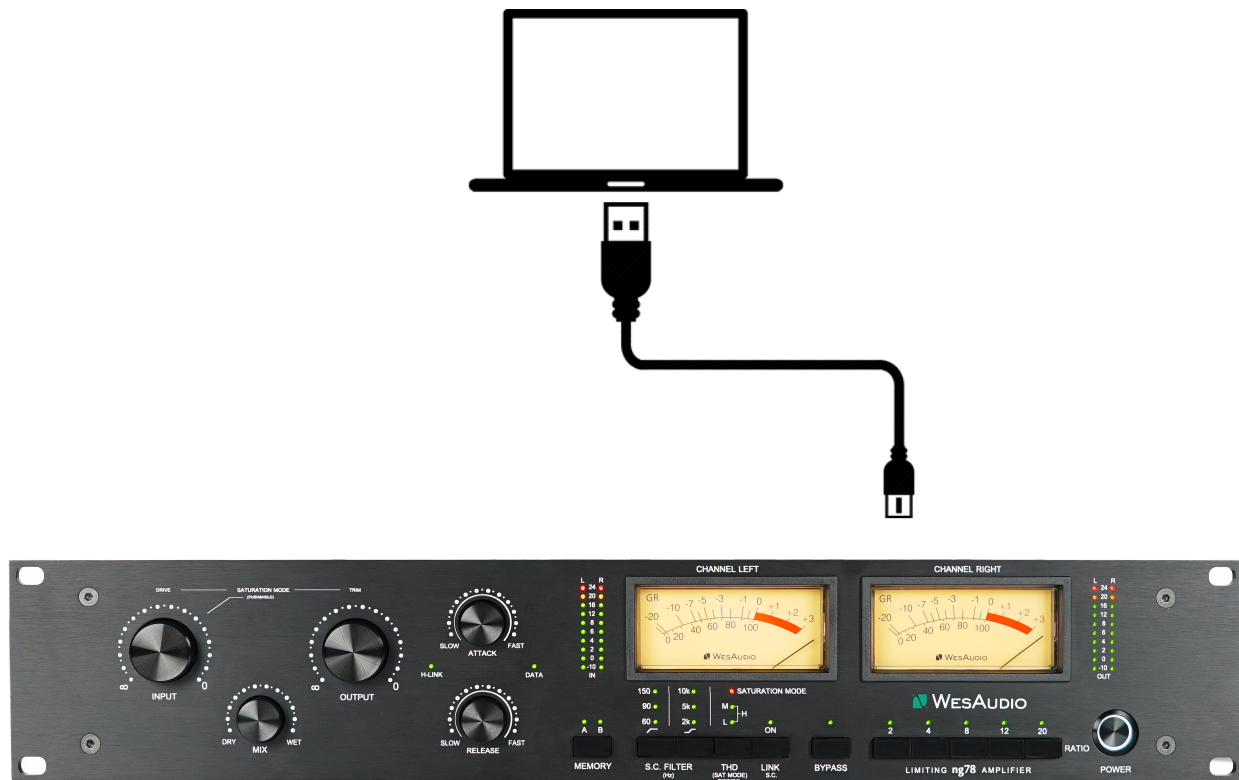
Broadly speaking, the ng78 supports two types of connections:

- **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 ng78 unit to your workstation, simply use a USB cable to connect it to any available USB 2.0+ port on your computer.

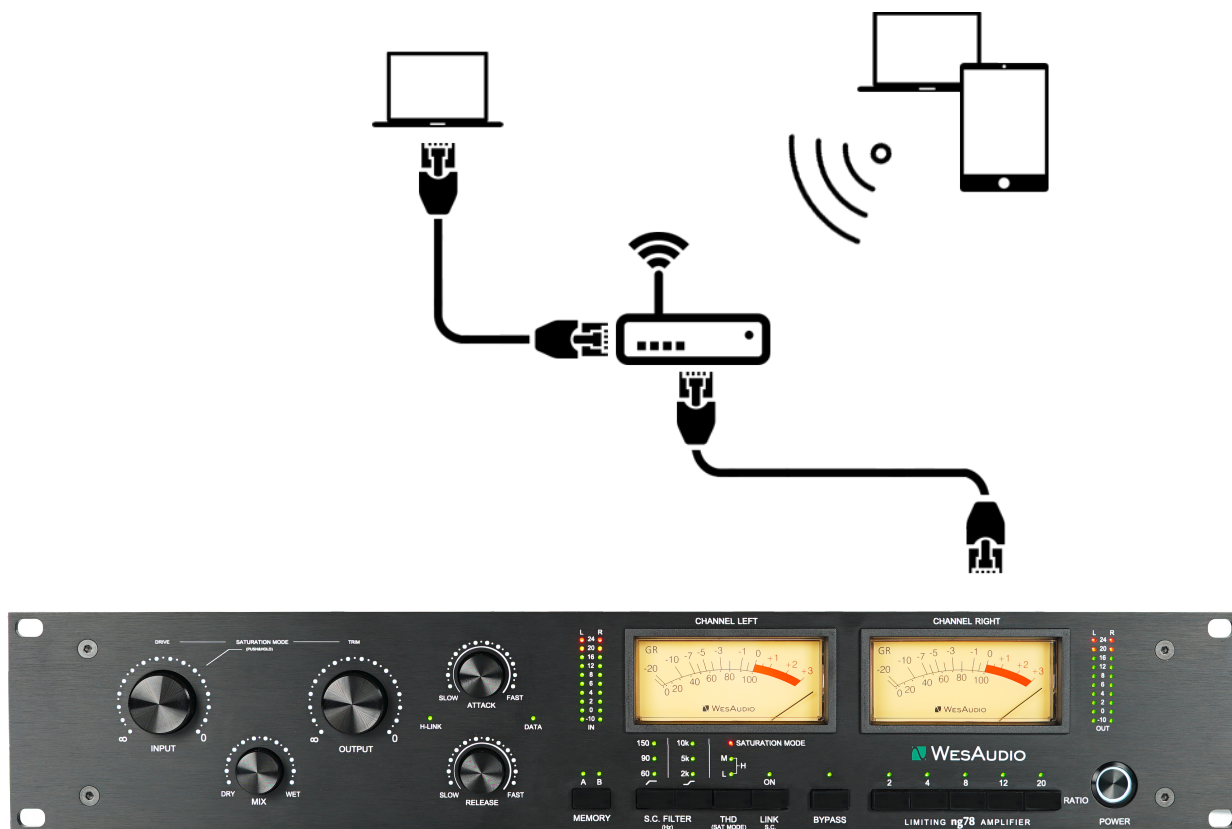


4.5.2 Ethernet

The ng78, like any network-enabled device, offers flexibility in connectivity to your workstation through the following methods:

- **Local Area Network (LAN) Connection:** By integrating the ng78 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 ng78 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 ng78 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 ng78 features:



(*) In case you would like ng78 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).

4.5.3 Default Network Configuration via DHCP

Each ng78 unit is set to utilize **DHCP by default**, making it straightforward to connect your ng78 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.

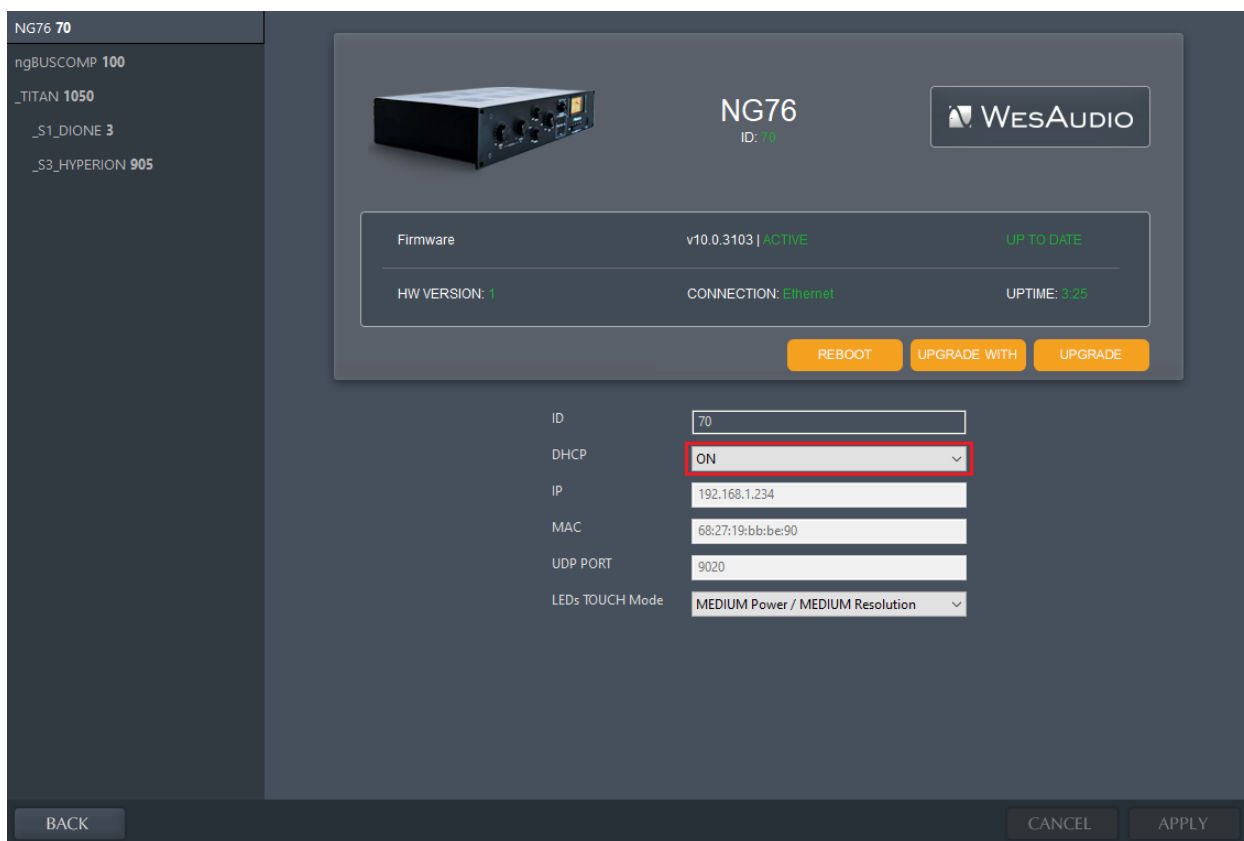
Configure a Static IP Address: Once DHCP is disabled, you can assign a specific, unchanging IP address to your device.

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

4.5.4 Enable/Disable DHCP

To toggle the DHCP setting on your ng78 unit to either enabled or disabled, follow these steps:

- **USB Connection:** Begin by connecting your ng78 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 ng78 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 ng78 should automatically re-establish.



Before transitioning from a USB connection to Ethernet, it's crucial to configure the appropriate IP address on your ng78. 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.

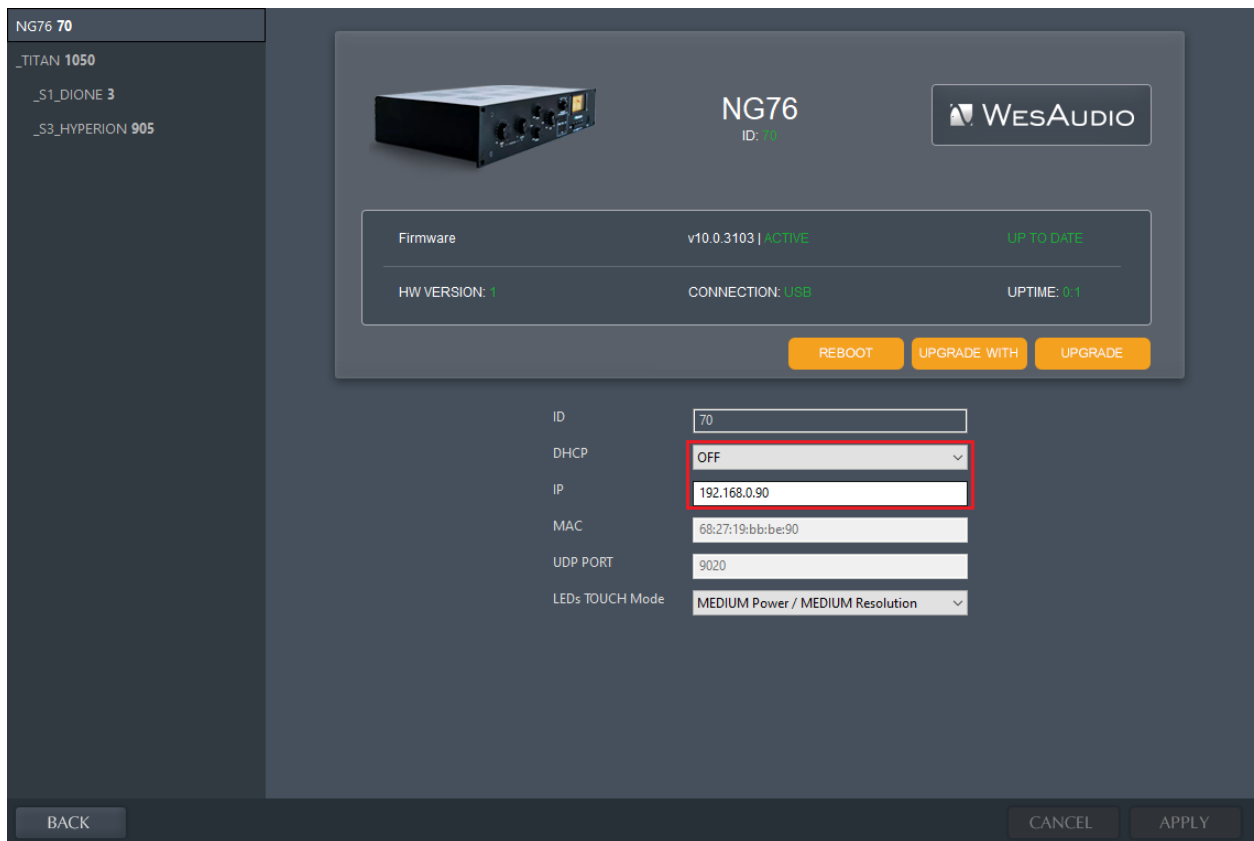
4.5.5 Set Up Static IP Address

There are a few situations where manually configuring the IP address for your ng78 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 ng78 can connect to the network.
- **Manually Configured LAN:** For networks set up with manual configurations, such as through a hardware switch, your ng78 will require a manual IP setup to match the network's settings.
- **Direct Workstation Connection:** If you prefer to connect your ng78 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 ng78, 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 ng78 directly to your workstation using a USB cable. (If you've already established a connection to the ng78 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 ng78 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 ng78 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 ng78 will be re-established under the new IP configuration.
- After successfully configuring the IP address, you can now disconnect the USB cable from your ng78 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.



4.5.6 Direct Connection – Setting IP Address on PC/MAC

Connecting your ng78 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 ng78 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 ng78.
- Connect the other end of the Ethernet cable to the Ethernet port on your Mac or PC.

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 ng78.
- 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 ng78 network settings.
- Click "Save" when done.

Final Step for both Mac and PC

- Power on your ng78.
- Ensure any necessary software or drivers for ng78 operation over Ethernet are installed on your computer.
- If required, adjust the ng78 network settings to ensure they are compatible with your computer's network configuration. This might include setting a static IP address on the ng78 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 ng78 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 ng78 and automating its settings. The cornerstone of ng78 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.

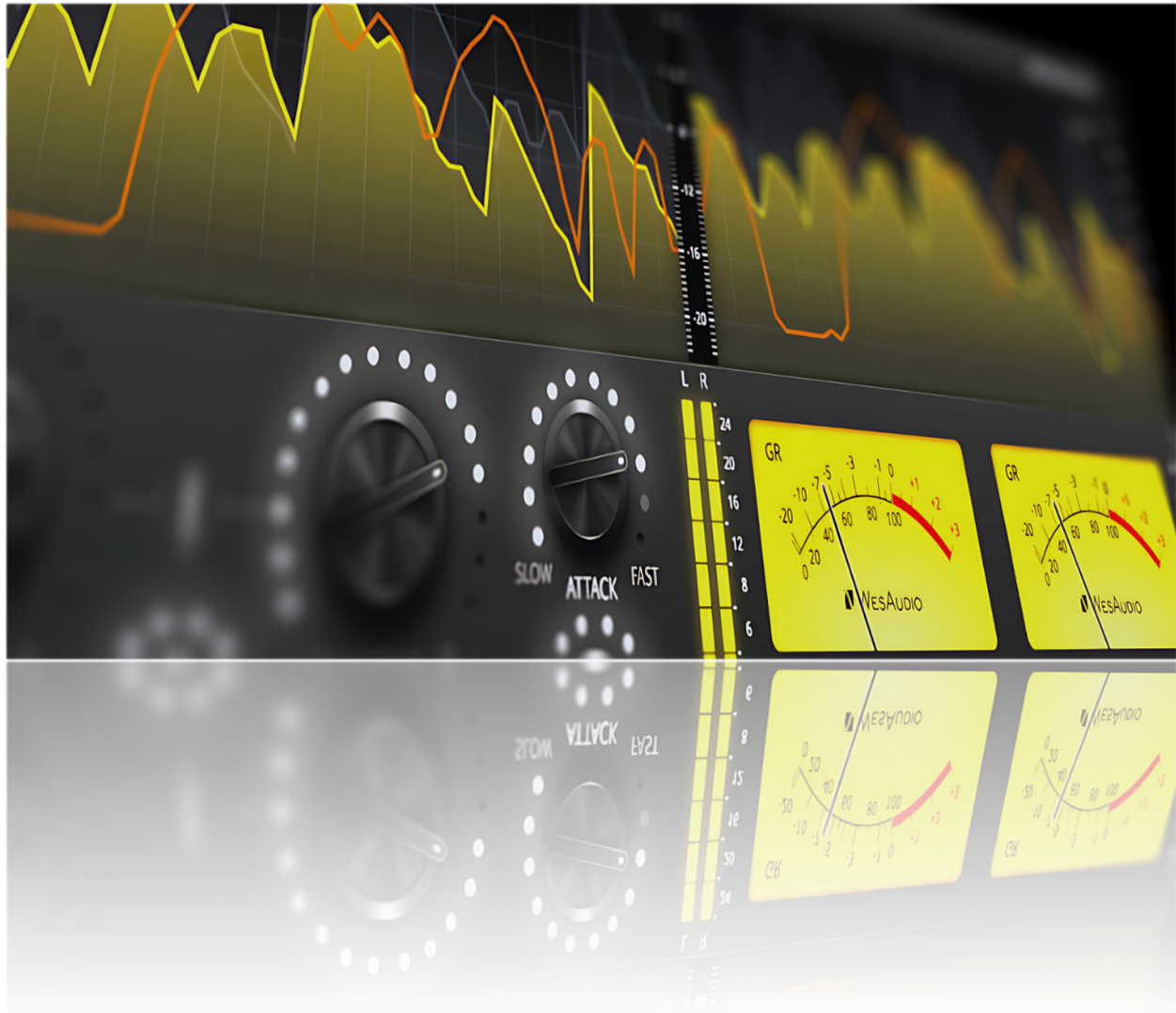
Benefits of DAW Plugin Control:

- **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 ng78 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 ng78 features from the workstation, a boon for those with spatial constraints or other limitations preventing direct access to their hardware.

In essence, ng78 DAW plugin integration marries the rich, analog sound quality with the precision and versatility of digital control. This not only amplifies the functionality of ng78 but also elevates the music production process, offering unprecedented control and flexibility in a traditionally analog setup.

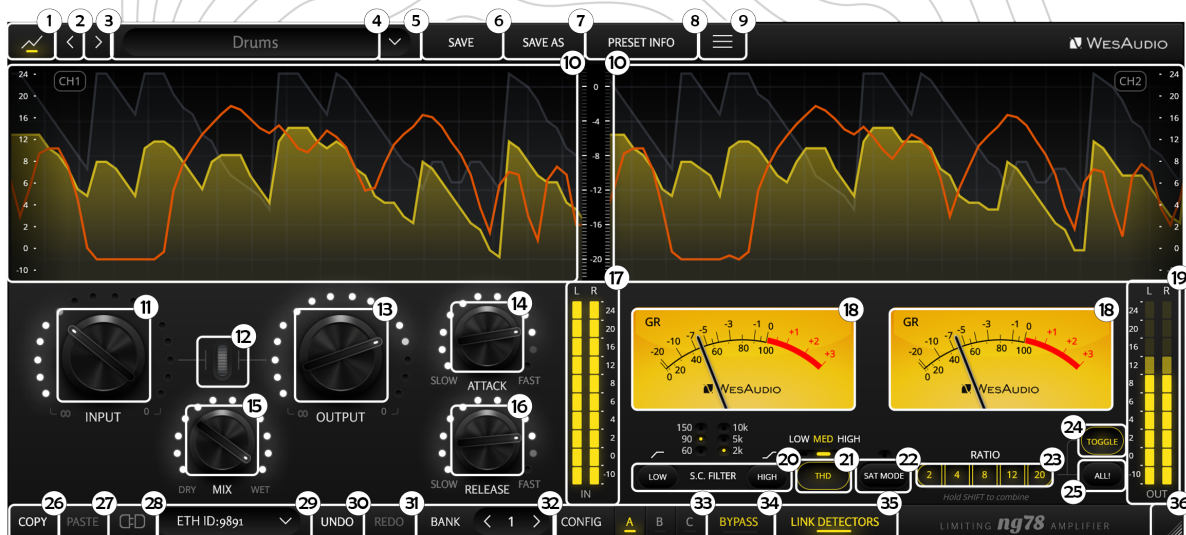
5.1 DAW Plug-in

The ng78 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.



5.1.1 NG78 - Plugin Structure

Analog Sound Digital Recall



For detailed explanations of each control and its functionality, users are encouraged to consult the chapter titled "[Front Panel and Main Functions](#)." This section provides comprehensive insights into how to interact with the ng78, whether you're adjusting parameters on the physical unit or via the plug-in.

1. **Plot:** Toggles the Gain Reduction Graph view on or off for visual monitoring of compression over time.
For more information read chapter "[Plot Feature](#)."
2. **Previous Preset:** Loads the previous preset from preset database.
3. **Next Preset:** Loads the next preset from preset database.
4. **Preset Name:** The name of the preset currently in use or being modified, which allows for easy recall or sharing of specific configurations.
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.
 - **Save GUI Preferences:** Allows to save current GUI settings, ensuring each new plugin instance opens with the same size and scaling settings.
 - **Clear GUI Preferences:** Clears the information about plugin size, FFT, and draw plot from the file. Please note that this function does not reset the plugin GUI to its default settings, it just clears saved configuration used by new plug-in instances.
 - Shows currently installed plug-in version.
10. **Gain Reduction Graph:** Displays the real-time gain reduction applied to the signal, helping users monitor and adjust compression settings for precise dynamic control.
11. **Input:** Adjusts the input gain, allowing users to control the level of the incoming signal before it undergoes processing, ensuring optimal signal strength for compression.
12. **Dynamic Link:** Creates a link between Input and Output controls, causing both parameters to move in opposite directions when adjusted - increasing Input automatically decreases Output, and vice versa.
For more information read chapter "[Auto Parameter Linking Feature](#)."
13. **Output:** Adjusts output gain to compensate for level reduction caused by compression, ensuring consistent loudness.
14. **Attack:** Defines how quickly the compressor or limiter responds to signals exceeding the threshold, affecting how tightly the effect grabs transients
15. **MIX:** Balances between the wet (processed) and dry (unprocessed) signal, allowing for parallel compression or blending effects.
16. **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.
17. **Input Meter:** The Input Meter visually represents the input levels for both hardware channels, utilizing an analog scale that ranges from -10dBu to +24dBu. This feature provides users with an intuitive and

accurate way to monitor signal strength entering the ng78, ensuring levels are kept within an optimal range for the best possible sound quality.

- 18. Gain Reduction Meter:** Shows the amount of gain reduction being applied to the signal, which is helpful for monitoring compression or limiting.
- 19. Output Meter:** The Output Meter visually represents the output levels for both hardware channels, utilizing an analog scale that ranges from -10dBu to +24dBu. This feature provides users with an intuitive and accurate way to monitor signal strength leaving the ng78, ensuring levels are kept within an optimal range for the best possible sound quality.
- 20. SC Filter:** offers two independent filters in the sidechain path, allowing precise frequency control over how the compressor responds to the input signal:
 - **High-Pass Filter (HPF):** Excludes low-frequency content from triggering compression, preventing the compressor from reacting to bass-heavy material. Selectable frequencies: OFF/60/90/150Hz.
 - **High-Shelf Filter:** Emphasizes high-frequency content in the sidechain, making the compressor more responsive to transients and brightness. Selectable frequencies: OFF/2/5/10kHz.
- 21. THD:** Toggles harmonic distortion levels OFF/LOW/MED/HIGH.
- 22. Saturation Mode:** Turn on or off Saturation.
- 23. Ratio:** Sets the amount of compression applied once the signal exceeds the threshold, determining how much the input signal is reduced. Switches between 2:1, 4:1, 8:1, 12:1, 20:1.
- 24. Ratio Hold/Toggle:** Controls how ratio buttons behave. When enabled (default), selecting a ratio deactivates the previously selected one, allowing only one ratio at a time. When disabled, ratio buttons act independently, letting you engage multiple ratios simultaneously.
- 25. All:** Engages all ratio buttons simultaneously.
- 26. Copy:** Enables users to copy the current parameter state.
- 27. Paste:** Enables users to paste the current parameter state, facilitating quick duplication of settings.
- 28. 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."
- 29. The Select Connection Button:** within the ng78 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.

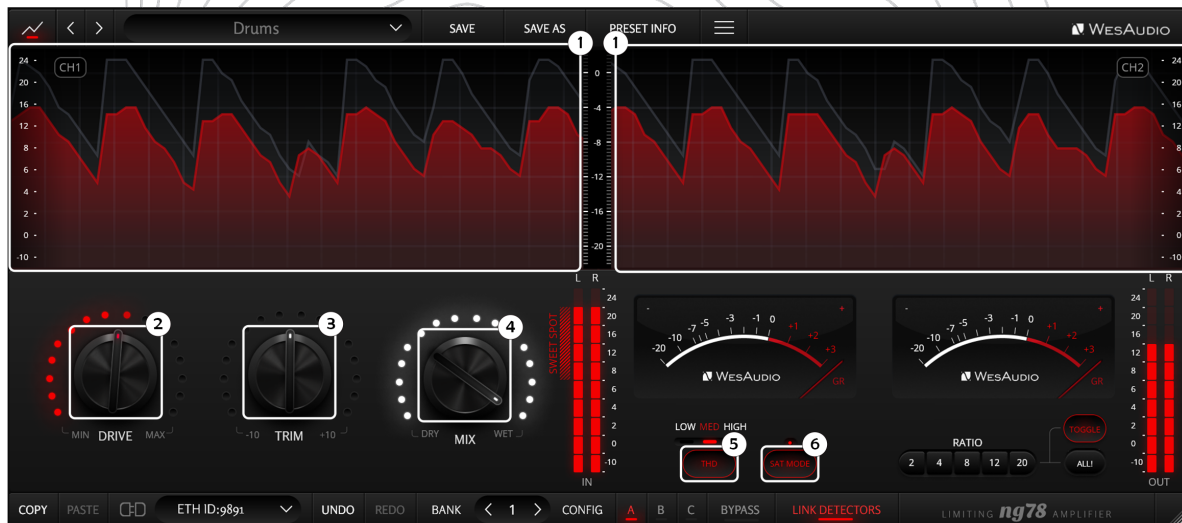
Upon Initiating Connection, It Visualizes the Connection State as Follows:

 - **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:

- **ON:** A solid white font denotes a successful connection, indicating that communication between the plug-in and the hardware unit is active.
 - **OFF:** A solid gray font signifies that the connection is not established, alerting the user to a disconnect or other issue preventing communication.
 - **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
- 30. Undo:** The Undo feature in the ng78 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.
- 31. 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.
- 32. Config Bank:** Selects between configuration banks, each containing three configurations. This feature supports automation for changing unit settings within a session or a song
- 33. Fast Preset Change (A/B/C):** Quickly toggles between configs A/B/C without affecting connection-related parameters like the Connection ID.
- 34. Bypass:** Allows to engage/disable bypass on the hardware unit.
- 35. Link Detectors:** Enables or disables linking between the left and right channel detectors. When enabled, both channels share the same sidechain signal, ensuring identical compression and preserving stereo balance. When disabled, each channel operates independently, allowing different compression behavior on each side for creative or dual-mono processing.
- 36. Resize:** Adjusts the display size or layout of the interface.

5.1.2 NG78 - Plugin Structure (Saturation Mode)

Analog Sound
Digital Recall



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- 1) **Saturation Graph:** Displays the real-time visualization of the amount of saturation applied to the signal.
- 2) **Drive:** Adjusts the amount of saturation, increasing harmonic distortion as you turn it up.
- 3) **Trim:** Adjusts the output level to maintain consistent volume after saturation.
- 4) **Mix:** Blends the processed (wet) signal with the original (dry) signal for parallel processing.
- 5) **THD:** Selects the intensity of harmonic distortion, with options for low, medium, high or off.
- 6) **Saturation Mode:** Toggles the saturation mode on or off.

6 Other Functions

6.1 Memories

In terms of parameter storage:

- The ng78 unit offers **TWO** distinct quick-access presets, selectable via the A/B button.
- In contrast, the ng78 plugin supports saving an **UNLIMITED** number of configurations. Each preset within the plugin provides three rapid configuration changes, labeled A/B/C per bank ID.

6.1.1 Synchronization Upon Connection

When a new plugin instance is loaded into your DAW, it starts with default settings and no modified parameters. Upon establishing a connection to the hardware unit by setting the Connection ID, the plugin downloads the current parameter state from the hardware, including any available fast configuration presets. For example, if the connection between the ng78 plugin and the ng78 hardware is made while the plugin is in its default state, all parameter states, including A and B presets, will be downloaded to the plugin.

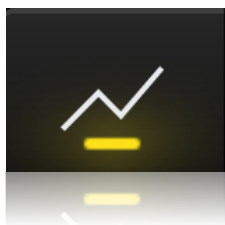
6.1.2 Preset Banks Feature

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.



6.2 Plot Feature

The Plot feature in the ng78 allows users to toggle the visual representation of the gain reduction applied or the input/output signal passing through the unit. By clicking on the plot icon, you can easily enable or disable the function, giving you the flexibility to visualize the dynamic changes in real-time. This graphical display provides an intuitive way to monitor compression or signal flow, offering immediate feedback to fine-tune settings for optimal performance. Whether you want a clear overview of how the gain reduction is affecting your sound or track the levels of your input and output signals, the Plot feature enhances your workflow with precision and ease.



6.3 Auto Parameter Linking Feature

Dynamic Link is a hardware-based function that allows related parameters to move together in a coordinated way, ensuring smooth and consistent control behavior.

In the ng78, the Dynamic Link function connects the **Input** and **Output** controls to maintain consistent signal levels during compression. When active, both parameters are linked to move in opposite directions - increasing the Input level automatically decreases the Output level, and vice versa.

This behavior ensures smooth gain staging and makes it possible to drive the compressor harder without causing drastic changes in overall loudness. The interaction provides a fast and intuitive way to balance drive and output level, maintaining consistent volume and tonal character during compression adjustments.

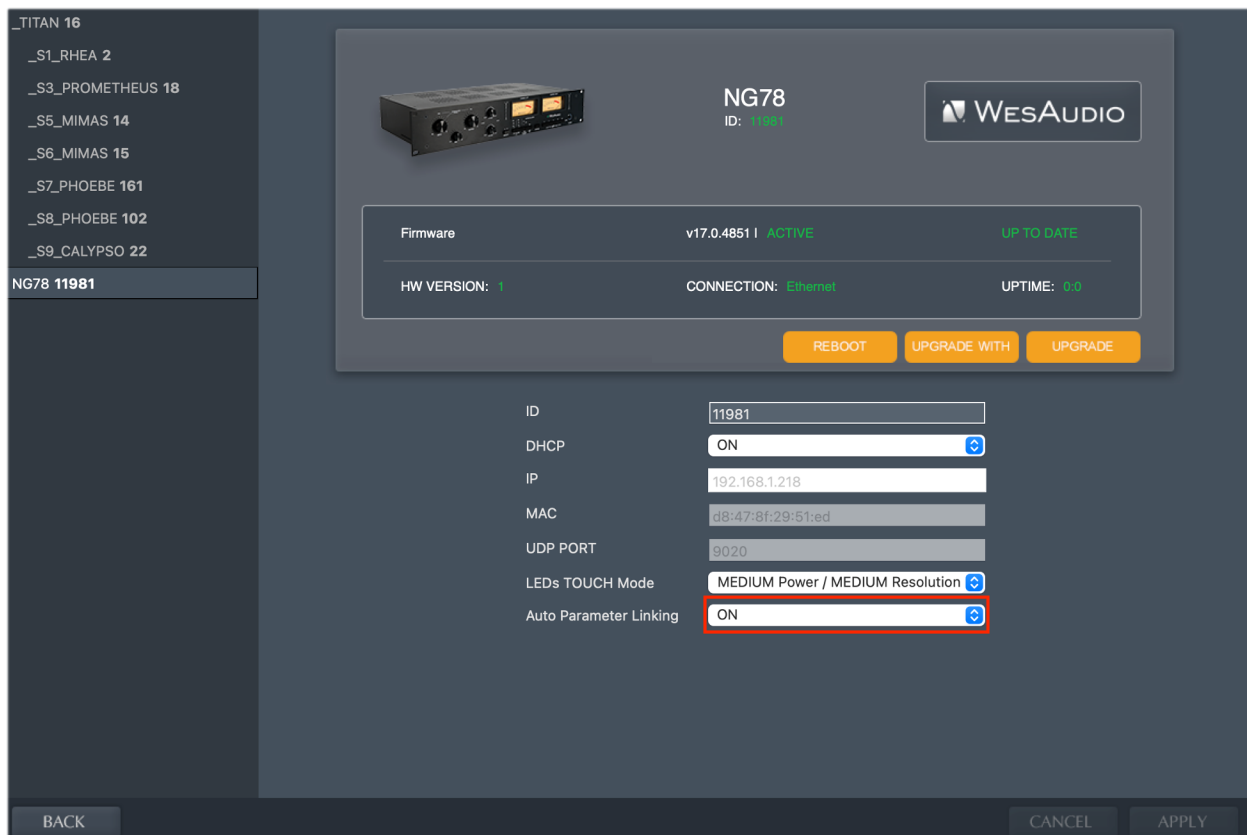


6.3.1 How to Activate Auto Parameter Linking

To activate Dynamic Link, open the GCon Manager _CONFIG application. Locate the **Auto Parameter Linking** option and set it to **ON** to enable automatic linking of parameters or **OFF** to disable the feature.

When **Auto Parameter Linking** is enabled, **touching two encoders simultaneously on the hardware** will activate the Dynamic Link between them. Once linked, the parameters move in opposite directions when either control is adjusted, maintaining a consistent signal level relationship.

If this option is set to **OFF**, the Dynamic Link feature will not respond to encoder touches on the hardware, but it will remain available and fully functional within the plugin, accessible through the GUI widget.



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 uninterrupted coverage.

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.