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# ngBusComp

User manual

EN



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Thank You for the purchase of ngBusComp

ngBusComp

**Next Generation Bus Compressor with digital recall**

With kind regards

A handwritten signature in black ink, appearing to be 'L. Wesolowski'.

Radoslaw Wesolowski and Michal Weglicki

# Next Generation Bus Compressor with digital recall

Legendary sound of Stereo Bus compressor has been true companion on countless recordings since 40 years. Often recognized as “mixbus glue”, this particular compression sound have become industry standard. Now, we improve this design creating whole new level of versitality with unbeliveble modern DAW integration –  
*WesAudio presents ngBusComp – fully analog, dual mono, stereo, mid-side compressor, with digital recall.*



**NGBUSCOMP** NEXT GENERATION BUS  
COMPRESSOR WITH DIGITAL RECALL

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# 1. Main Features

**True ANALOG sound with extremely convenient control!**

**TOTAL RECALL AND PLUGIN CONTROL**

**TRUE QUAD VCA THAT 2181**

**+26 dBu of headroom**

**STEREO / DUAL MONO compression**

**Relative channel linking!**

**MID-SIDE operation mode**

**Canhill transformers inside**

**SELECTABLE OUTPUT CIRCUIT** – electronically balanced, or transformer balanced  
Passive attenuator in “transformer mode” allows to drive transformer according to  
needs

**Mix knob for parallel compression**

**Proprietary THD implementation with very detailed variable control!**

**PREDEFINED SIDE CHAIN FILTERS** - It includes 3 high pass filters at 60, 90 and 150 Hz, and 2  
tilt filters which are special “curve” designed filters.

**FIVE RATIO SETTINGS** - 1.5:1 and 2:1 for gentle mixbus processing, 4:1 and 10:1 for large  
variety of applications, and INF mode – to hit and crash your transients!

**External Side chain through back TRS connectors**

**HARDWARE A/B/C**

**USB or Ethernet connectivity!**

**Detailed metering for each channel** – Input / Output and Gain reduction

**Analog automation via plug-in control**

**Analog automation record in DAW with 5 touch sensitive encoders**

**True Bypass**

Fully digitally controlled and isolated analog circuit

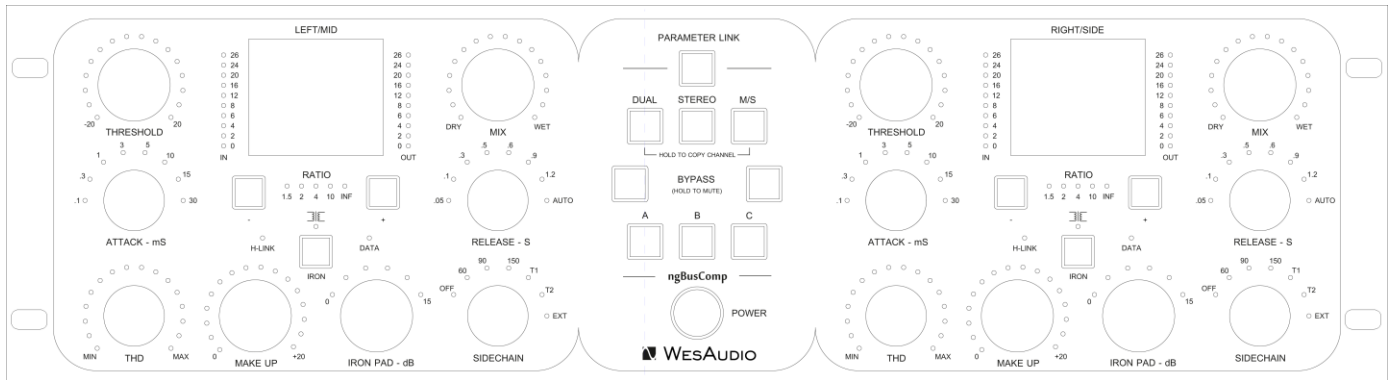
Free software and firmware upgrades

## 2.Specification

Short specification summary:

- THD+N(20Hz-20kHz) at 0dBu < 0.006%
- Frequency response: 0-300kHz (-3dB)
- Input impedance > 10kohm
- Output impedance < 50ohm
- Channels crosstalk > 90dB
- Maximum input level: +26dBu
- Maximum output level: +26dBu
- Dynamic range > 120dB
- **Attack**: 0.1, 0.3, 1, 3, 10, 30 (ms)
- **Release**: 0.1,0.3,0.6,0.9,1.2,Auto (s)
- **Ratio**: 1.5, 2, 4, 10, INF
- Sidechain Filter: 60, 90, 150, T1, T2
- THD: 0% to 8%

## 3. Front panel and main functions



**THRESHOLD** – sets the operating level for the knee of the compressor. Threshold is continuously adjustable.

**MIX** – WET/DRY signal mixer knob. Allows the parallel compression to be used.

**ATTACK** – controls the quickness of the compressor's response to changes. Eight switchable attack rates: 0.1, 0.3, 1, 3, 5, 10, 15 and 30 ms.

**RELEASE** – release time is switchable between 0.05, 0.1, 0.3, 0.5, 0.6, 0.9 and 1.2 seconds, or to automatic. If Auto is selected, the release time depends on the duration of the program peak.

**RATIO** - this button determines deepness of the compression. A ratio 1.5:1 is the smallest and very gentle possible value of the compression, while INF is the biggest one (close to the limiting).

**THD** – controls the harmonic distortion of the Wet signal only.

**SIDECHAIN** - this control determine side chain filter and side chain source:

1. OFF – Sidechain filter not active,
2. 60 Hz – Sidechain High Pass Filter at 60 Hz (6dB/Octave).
3. 90 Hz – Sidechain High Pass Filter at 90 Hz (6dB/Octave).
4. 150 Hz – Sidechain High Pass Filter at 150 Hz (6dB/Octave).
5. T1– special tilt filter with HPF and High boost.
6. T2– special tilt filter with HPF and High boost.
7. EXT – back TRS connectors are active to accept external sidechain signal. If TRS connectors are not used, this setting can be used to simply disable compression and use ngBusComp as a saturation box.



### **OUTPUT STAGE:**

**IRON** – engages transformer balanced output stage (if disabled, output stage is electronically balanced).

**MAKE UP GREEN LEDs\*** – determines the level of the output signal leaving the compressor in “NORMAL MODE” (*electronically balanced*). It is used to recover compression lost signal. Continues control with 0.25dB step, range 0-20dB.

**MAKE UP RED LEDs\*** – determines the level of the output signal leaving the compressor in “IRON MODE” (*transformer balanced*). It is used to recover compression lost signal, and to drive the transformer with higher signal to produce saturation. Continues control with 0.25dB step, range 0-20dB.

**IRON PAD** – engages passive attenuation managed via relay cascade up to 15dB (1dB step) – enabled/active only in IRON MODE.

**(\*) For more information about Make up parameter please refer to [Selectable output](#) chapter.**

### **MIDDLE PANEL:**

**DUAL/STEREO/MS** – Selects compression mode, for more information please refer to chapter [Compression modes](#).

**A/B/C** – internal preset memory buttons which can be used to compare three different compressor settings.

**BYPASS** – True bypass switches for each channel.

**PARAMETER LINK** – This button links parameters between channels – for instance to use unit in stereo. Parameters are always linked relatively, that means that change on one channel will affect other channel by exactly same amount. **Holding any touch sensitive encoders for both channels at a same time will temporarily disable parameter link.**

**POWER** – Power switch.

### **CHANNEL INDICATORS:**

**H-LINK LED** – indicates state of host-module connection.

**DATA LED** – indicates that data is being sent from DAW to the device.

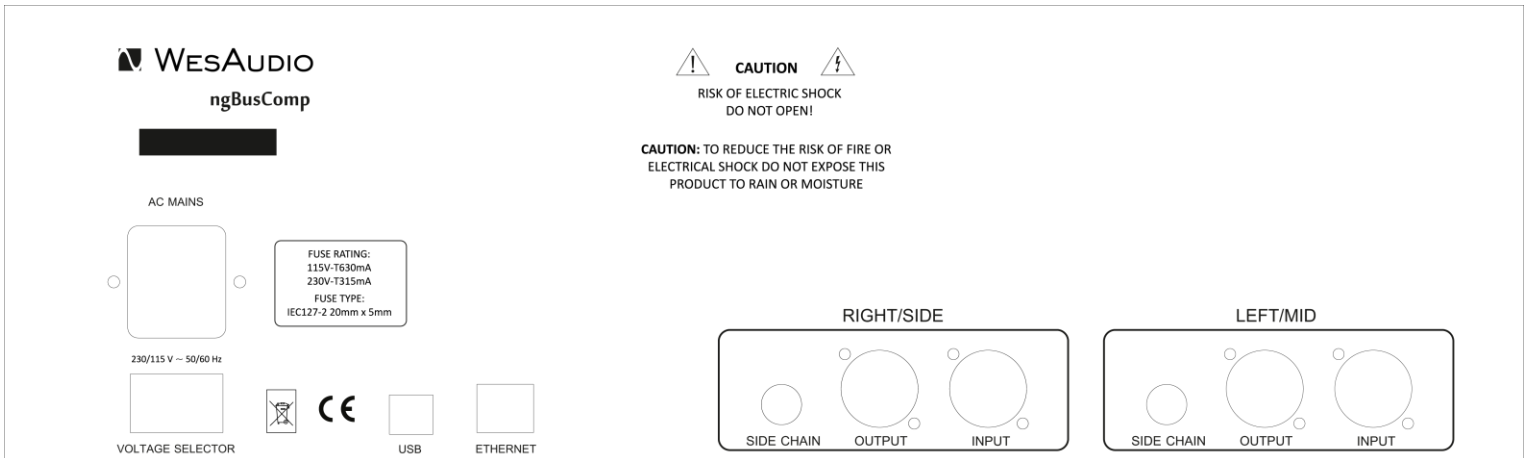
### **METERS – each channel supports:**

**IN LED metering (0 – 26dBu),**

**OUT LED metering (0 – 26dBu),**

**GR - Gain reduction analog meter (0 – 20 dB).**

## 4. Rear panel



**Voltage selector** – selection between 115V (60Hz) and 230V (50Hz).

### Digital management connectivity:

**ngBusComp** supports two types of connection for digital management:

**USB** – USB2+ compatible port for GCon connectivity (management).

**ETHERNET** – Ethernet port for GCon connectivity (management) based on UDP protocol (LAN single subnet).

**Please note that only one connection type can be used at the same time.**

**SIGNAL CONNECTORS** - each channel contains following signal connectors:

**XLR IN** – Input signal via XLR cable,

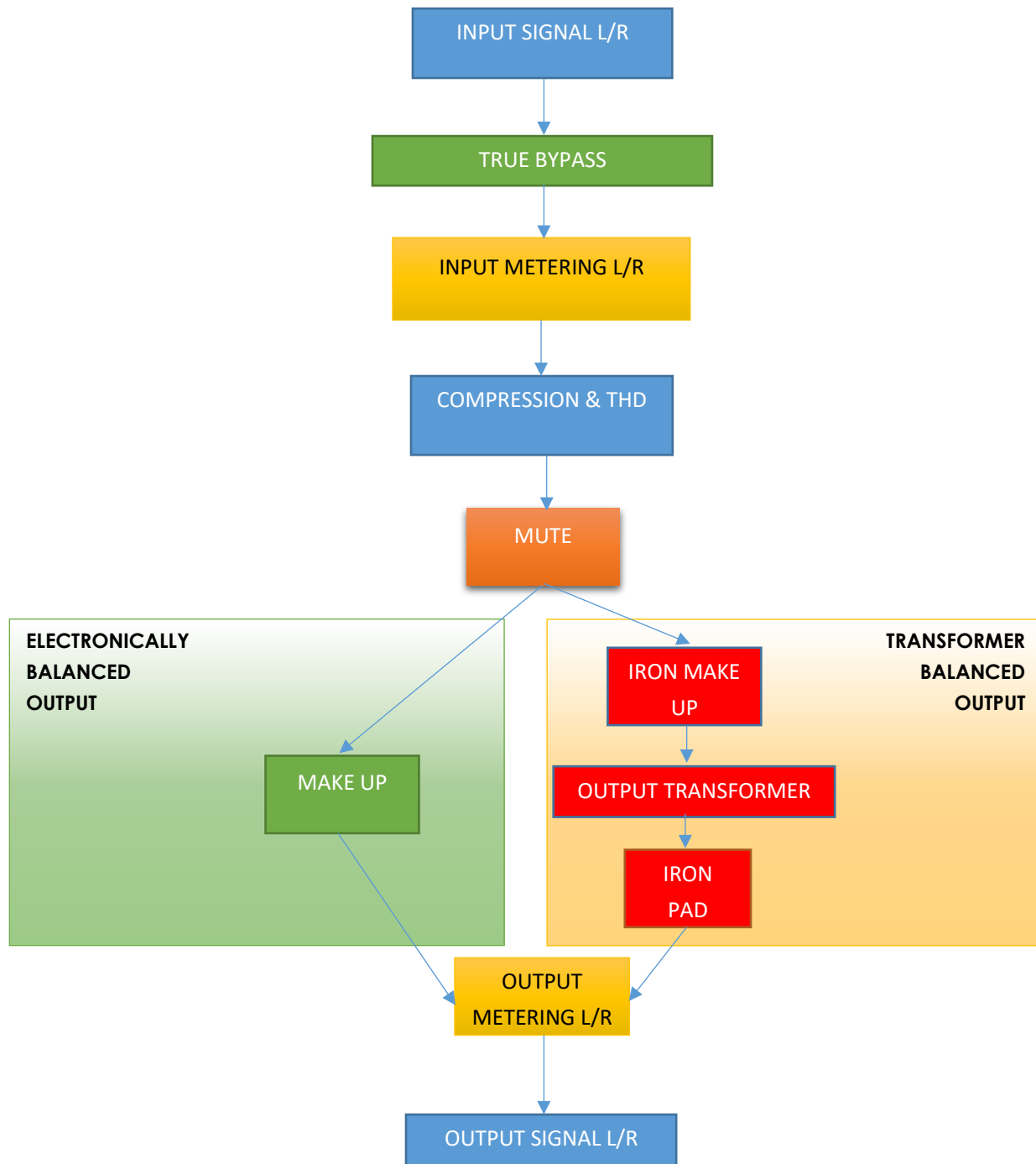
**XLR OUT** – Output signal via XLR cable,

**TRS INPUT** – External Sidechain signal input.

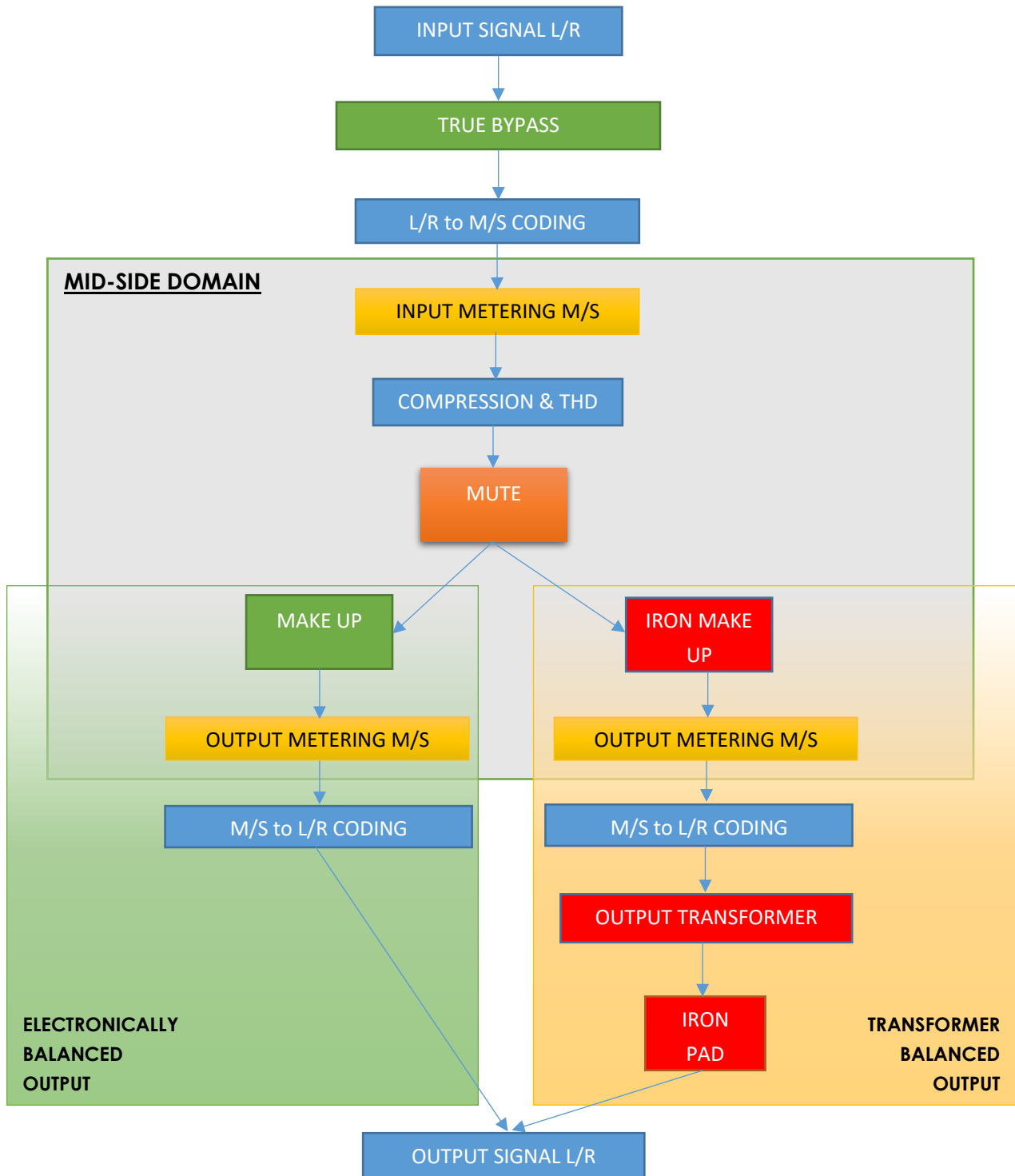
## 5. Structure

Below figures show ngBusComp features order and structure.

### DUAL MONO / STEREO



**MID-SIDE**



## **NOTES**

Above figures explains order of some functionalities. Because ngBusComp is still 100% analog unit, some features affects each other, other chapters share more information of some of those cases, but please find below summary of things that should be kept in mind:

- Bypass completely disengage unit by hardwiring INPUT to OUTPUT – this means that any other feature in chain won't be noticeable – for example MUTE won't work if BYPASS is ON. **(IF UNIT passes signal only in BYPASS – most likely INPUT from the interface have been connected to the INPUT of the device, not the other way around).**
- **IRON mode in Mid Side** mode will always have **same** value for **both channels**. Because transformer is engaged in output stage (symmetrization) it works already in Left/Right mode, so outside M/S domain.
- **Metering for Mid-Side** is still executed inside M/S domain so it won't be affected by IRON PAD setting.
- **IRON PAD** is last analog circuit before hitting output XLR socket. That means that IRON PAD literally is after transformer what allows us to passively attenuate signal just before it will go out from the unit. **It enables additional control over Transformer saturation based on the signal it is driven with!**

## 6. Software installation

Software package can be downloaded from <http://www.wesaudio.com/download> by anyone who purchased related HW unit. To check currently supported plugin types and platforms, please follow above link.

### 6.1. Installation

To install WesAudio software package, please visit <http://www.wesaudio.com/download> and download recent version of software.

#### 6.1.1. Windows

Start the installer application, if you will encounter any system warnings about this particular installer, please ignore them\*, then select any components which you would like to install\*\*.

- If this is **FIRST** installation, please unplug all WesAudio devices from your workstation.
- When USB driver will be installed, application will inform that all devices should be connected – **please do so.**
- If USB driver installation is triggered, user will be asked to restart computer. We know that this is unwanted activity, but it is necessary step for USB driver to install with success.
- If computer restart is triggered, this Installer will start again during start up. **If for some reason installer won't be started after the restart, please start same installer manually again.**

#### 6.1.2. OSX

Because OSX architecture and USB devices handling is much simpler in concept, the only thing to note is to have all devices **connected** during install procedure.

Start the installer application, if you will encounter any system warnings about this particular installer, please ignore them \* (sometimes it is necessary to open context menu with "Option" click (or right mouse button) and trigger installation once again).

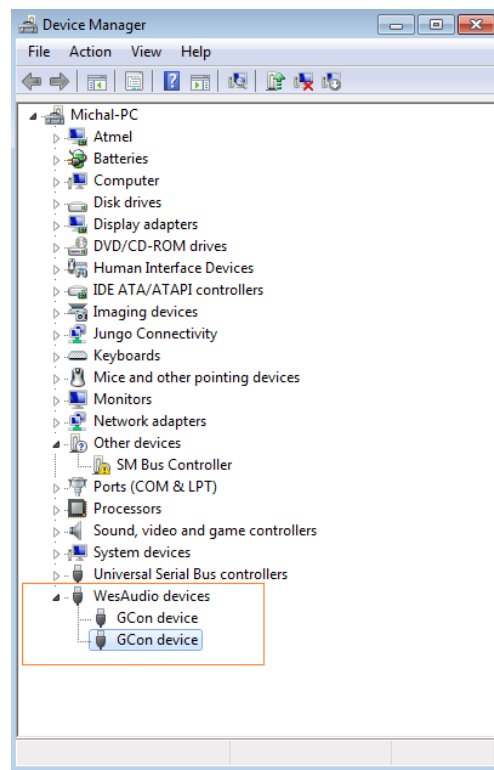
### 6.1.3. Troubleshooting

If anything would fail during installation procedure please contact our support at [support@wesaudio.com](mailto:support@wesaudio.com). We will get back to you as soon as possible.

Below you can find some symptoms and description which will help to investigate the issue:

“Can't find my device on plugin drop down menu”

Unfortunately there could be dozens of root causes. On Windows machine it is very important to check if USB device is successfully connected on system level. That can be checked in “Control Panel->System->Device Manager”:



\*\* Please note that for **WINDOWS** it is necessary to install USB driver which is critical to communicate with HW units. It is required step only during first installation, and this option will be automatically disabled during any software upgrades.

## 6.2. GCon Manager

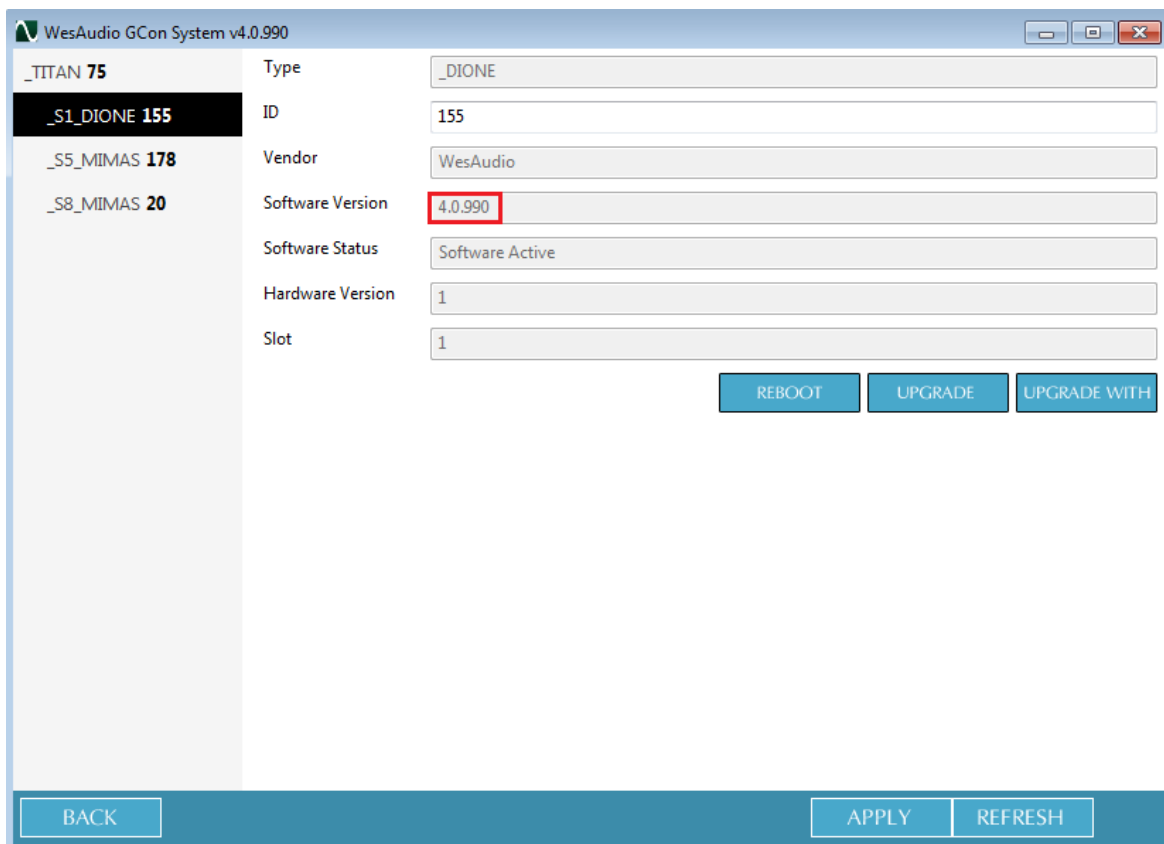
GCon Manager is generic application which implements configuration management over compatible units. It can be found in Application folder data:

- For OSX: “/Applications/WesAudio/GConManager”
- For WINDOWS: folder specified during installation phase, by default in: “c:/Program Files x86/WesAudio/GConManager.exe”.

This section describes how manage firmware of available units, but GConManager also provides other functions which will be described in next chapters.

### 6.2.1. How to check firmware upgrade.

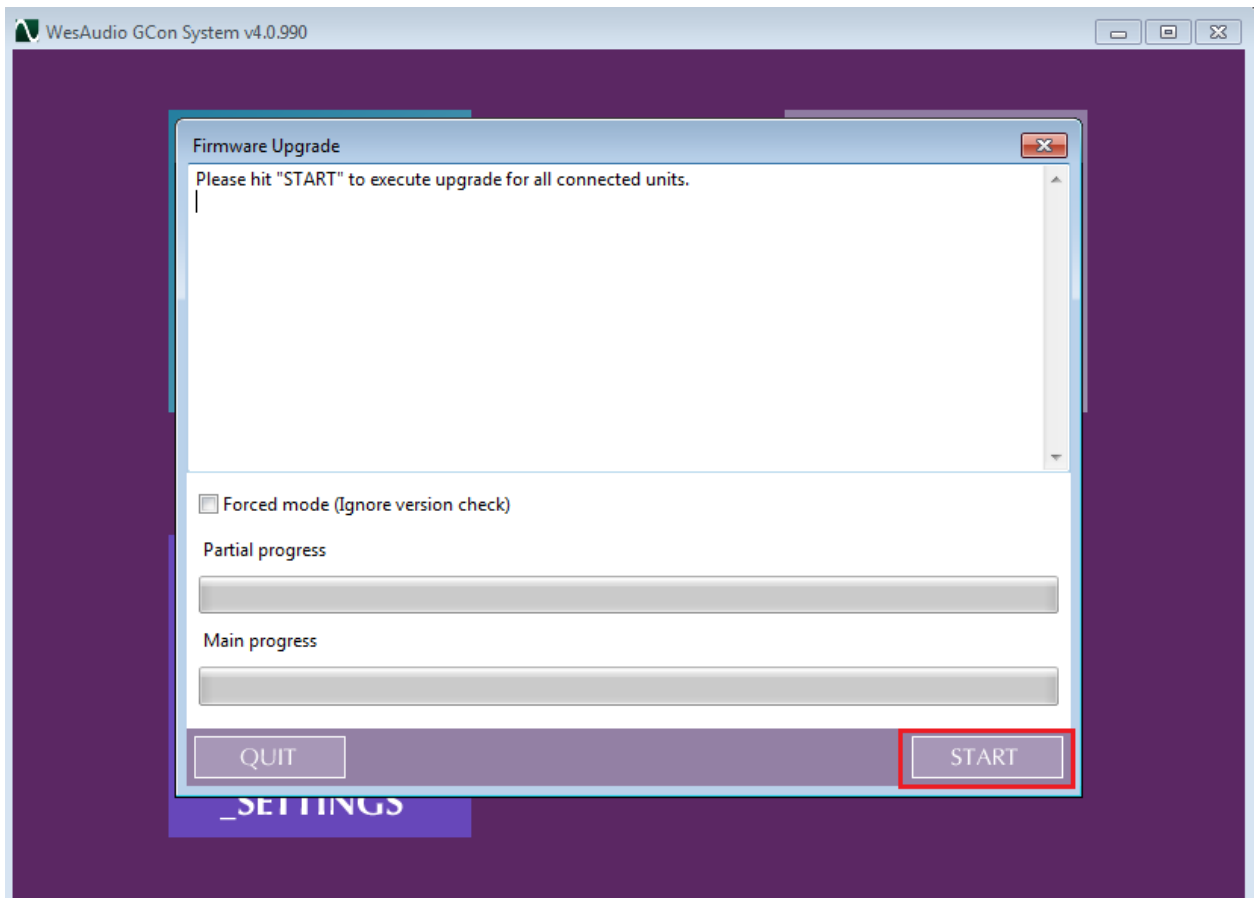
Each device reports to your workstation with particular version, which indicates compatibility between your host application, and remote module. To check firmware upgrade please to GCon Manager CONFIG application:





### 6.2.2. How to perform firmware upgrade.

To perform firmware upgrade go to GConManager upgrade and hit "Start" button. This will trigger upgrade operation for all modules which are not up to date with your host software.



## 7.Set up GCon Connection

This chapter goes through possible setups and describes main configuration steps.

Please note that audio signal connectivity is described in next chapter [Signal connection](#), this chapter describes digital management side.

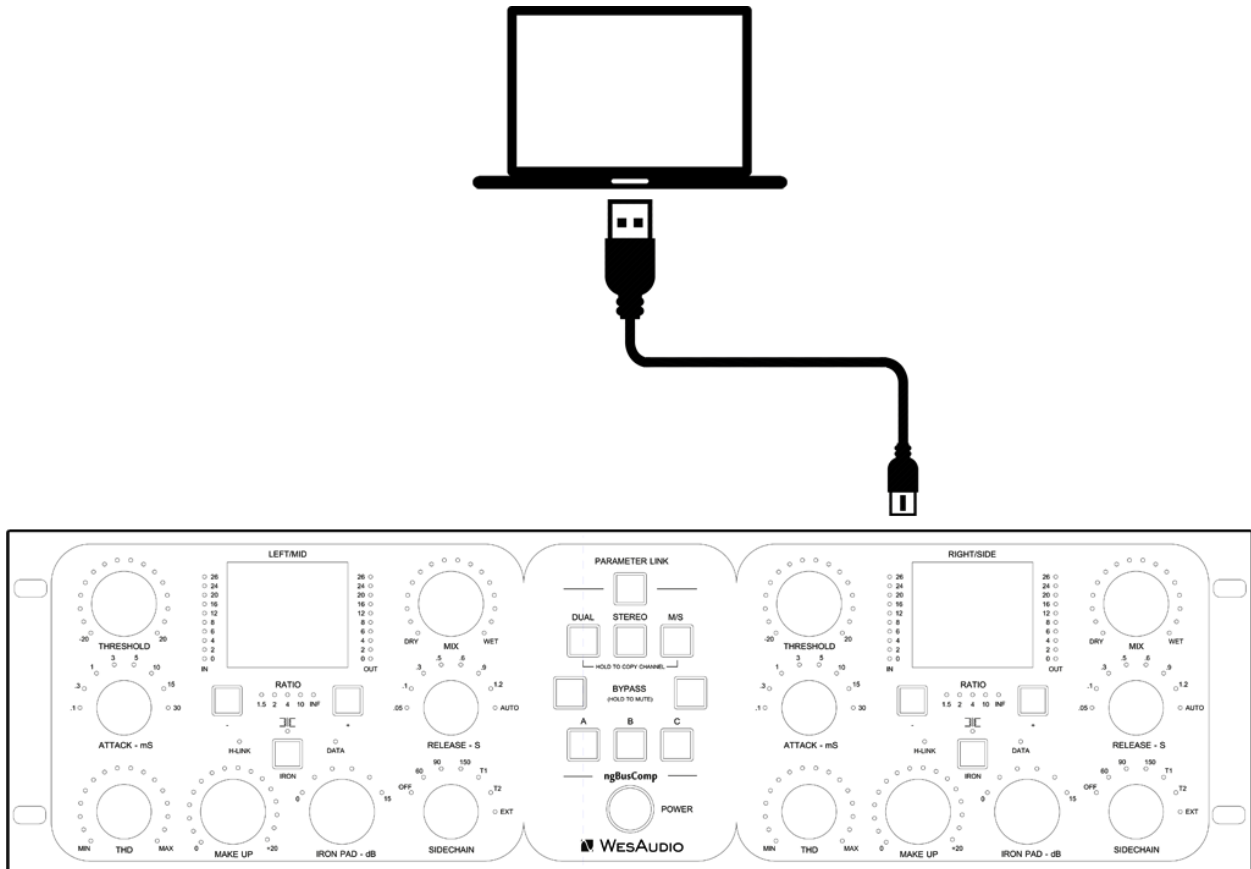
In general ngBusComp implements two connection types:

- **USB 2.0+.**
- **Ethernet 10/100** – based on UDP protocol (LAN single subnet).



## 7.1. USB

To connect your ngBusComp frame directly to your workstation, just connect it to any available USB 2.0+ socket via USB cable.



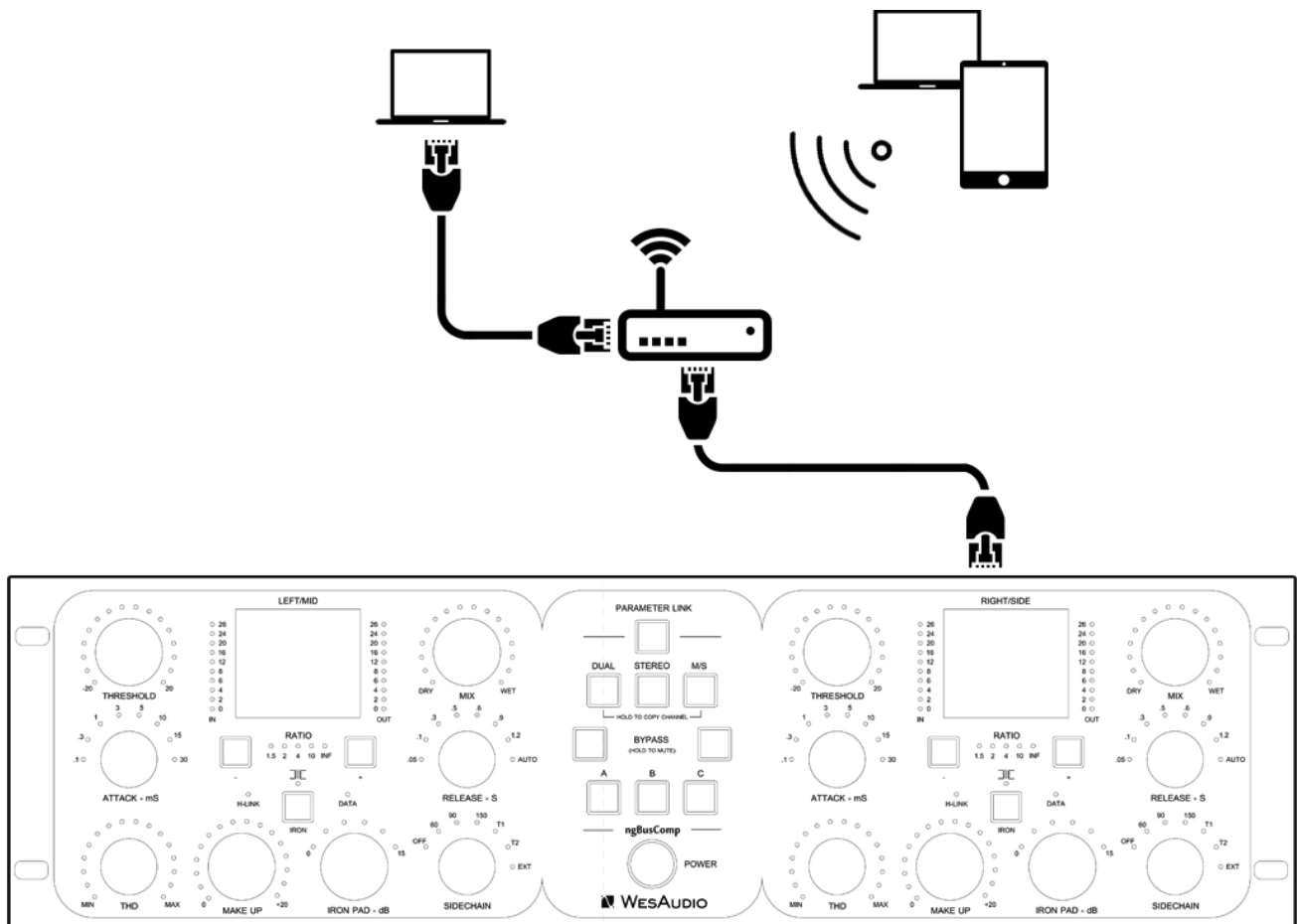
## 7.2. Ethernet

ngBusComp as any network device, can be connected to your workstation in following ways:

- By joining your local area network (LAN)
- Or directly connected to your workstation.

In some cases it is mandatory to set IP addresses\* for your workstation and ngBusComp.

Below you can find possible setup in your local area network, and how different devices can access ngBusComp resources:



(\*) 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).

7.2.1. Default network configuration.

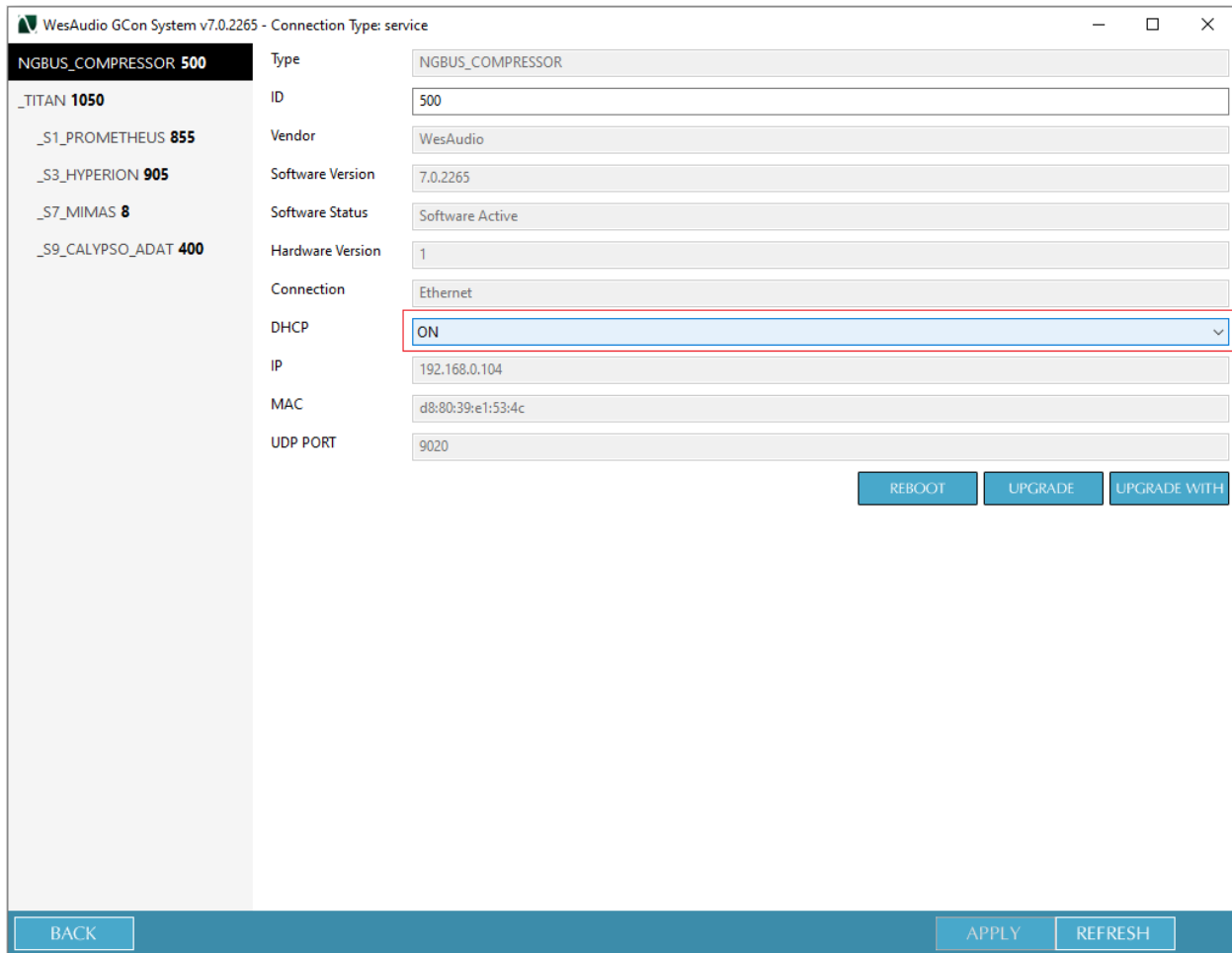
**Each ngBusComp chassis by default has DHCP enabled. So if you would like to connect your ngBusComp to your router, just do it!**

*...However if you would like to change that configuration, please read description below.*

## 7.2.2. Enable/Disable DHCP

To change any network specific configuration of your ngBusComp chassis:

- 1) Connect your ngBusComp directly to your workstation through USB cable (If connection to ngBusComp is already established through Ethernet cable, this step is not necessary),
- 2) Start GConManager and go to \_CONFIG application.
- 3) Then select your ngBusComp unit from the elements tree on the left.
- 4) Then change DHCP option to "ON". Unit will restart, and your connection to ngBusComp will be established again.



Now you can disconnect USB cable, and connect ngBusComp using Ethernet cable.

### 7.2.3. Static IP address

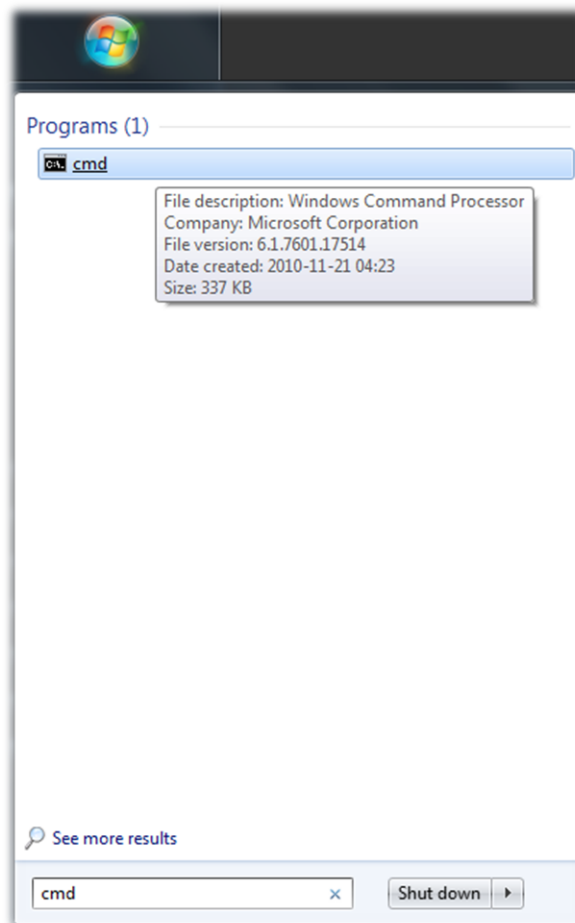
In general there are few use cases when you would like to configure ngBusComp IP address manually:

- 1) When your router doesn't support DHCP
- 2) When your LAN network is configured manually for example through hardware switch.
- 3) When you would like to connect your ngBusComp directly to your Ethernet socket in your workstation.

As a first step please check your currently configured IP address.

#### 7.2.3.1. Windows – how to check your IP address.

- Start cmd application (hit Windows "START" button and type "cmd"):



- Type "ipconfig" which will show current network configuration:

```

Administrator: C:\Windows\system32\cmd.exe
Microsoft Windows [Version 6.1.7601]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

C:\Users\Michal>ipconfig

Windows IP Configuration

Ethernet adapter Local Area Connection:

    Media State . . . . . : Media disconnected
    Connection-specific DNS Suffix  . :

Wireless LAN adapter Wireless Network Connection 3:

    Media State . . . . . : Media disconnected
    Connection-specific DNS Suffix  . :

Wireless LAN adapter Wireless Network Connection 2:

    Media State . . . . . : Media disconnected
    Connection-specific DNS Suffix  . :

Wireless LAN adapter Wireless Network Connection:

    Connection-specific DNS Suffix  . :
    Link-local IPv6 Address . . . . . : fe80::b034:9fb7:4cb2:2e2f%11
    IPv4 Address. . . . . : 192.168.0.100
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . : 192.168.0.1

Ethernet adapter VirtualBox Host-Only Network:

    Connection-specific DNS Suffix  . :
    Link-local IPv6 Address . . . . . : fe80::7580:e54b:5962:9c3a%15
    IPv4 Address. . . . . : 192.168.56.1
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . :

Tunnel adapter isatap.<F78175D0-A0CF-4EB4-B3E4-9F3AC002D3DA>:

    Media State . . . . . : Media disconnected
    Connection-specific DNS Suffix  . :

Tunnel adapter isatap.<0B2A372F-F34D-46F9-A3B6-794F92D185E0>:

    Media State . . . . . : Media disconnected
    Connection-specific DNS Suffix  . :

Tunnel adapter isatap.<E1EA6476-41C5-43AB-BB50-A89F0F3570B0>:

    Media State . . . . . : Media disconnected
    Connection-specific DNS Suffix  . :

Tunnel adapter Teredo Tunneling Pseudo-Interface:

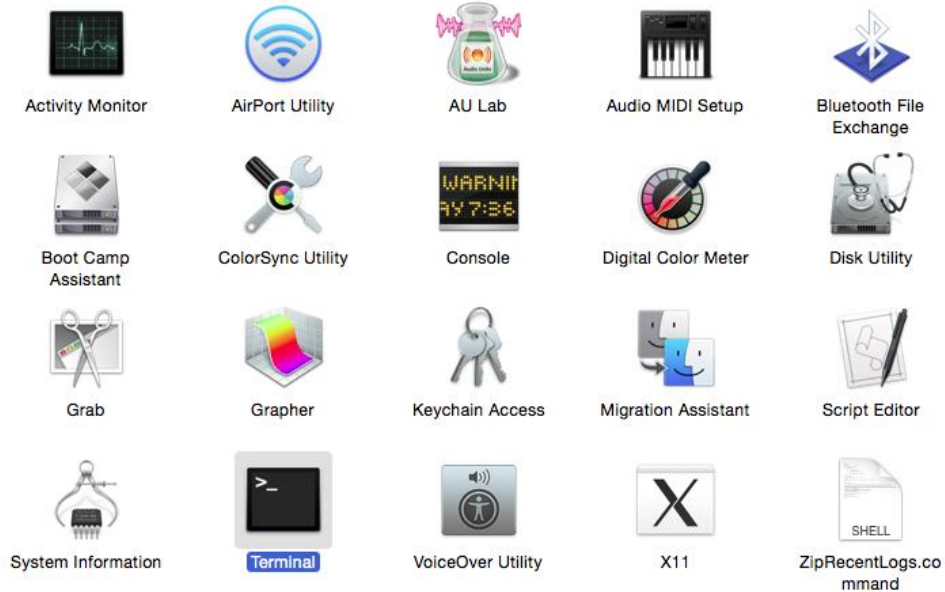
    Media State . . . . . : Media disconnected
  
```

- Then you have to find your currently connected network card (Ethernet card or Wi-fi card) and check IP address. In this particular case IP address is **192.168.0.100**. ngBusComp IP address has to be in the same subnet, so for above example it would mean any IP address from 192.168.0.2 to 192.168.0.254, excluding currently occupied addresses by any devices connected to your network (like your workstation address, router address, etc.).



### 7.2.3.2. OSX – how to check your IP address.

- Start “Terminal” (located in Applications/Utilities) application:



- Type “ifconfig” which will show current network configuration:

```
Mac-mini-Michal:~ michal$ ifconfig
lo0: flags=8049<UP,LOOPBACK,RUNNING,MULTICAST> mtu 16384
    options=3<RXCSUM,TXCSUM>
    inet6 ::1 prefixlen 128
    inet 127.0.0.1 netmask 0xff000000
    inet6 fe80::1%lo0 prefixlen 64 scopeid 0x1
    nd6 options=1<PERFORMNUD>
gif0: flags=8010<POINTOPOINT,MULTICAST> mtu 1280
stf0: flags=0<> mtu 1280
en0: flags=8863<UP,BROADCAST,SMART,RUNNING,SIMPLEX,MULTICAST> mtu 1500
    options=27<RXCSUM,TXCSUM,VLAN_MTU,TSO4>
    ether 00:23:df:7f:b5:28
    inet6 fe80::223:dfff:fe7f:b528%en0 prefixlen 64 scopeid 0x4
    inet 192.168.0.103 netmask 0xfffff00 broadcast 192.168.0.255
    nd6 options=1<PERFORMNUD>
    media: autoselect (1000baseT <full-duplex,flow-control>)
    status: active
en1: flags=8823<UP,BROADCAST,SMART,SIMPLEX,MULTICAST> mtu 1500
    ether 00:24:36:eb:b3:51
    nd6 options=1<PERFORMNUD>
    media: autoselect (<unknown type>)
    status: inactive
fw0: flags=8863<UP,BROADCAST,SMART,RUNNING,SIMPLEX,MULTICAST> mtu 4078
    lladdr 00:23:df:ff:fe:7f:b5:28
    nd6 options=1<PERFORMNUD>
    media: autoselect <full-duplex>
    status: inactive
Mac-mini-Michal:~ michal$
```

- Then you have to find your currently connected network card (Ethernet card or Wi-fi card) and check IP address. In this particular case IP address is **192.168.0.100**. Unit's IP address has to be in the same subnet, so for above example it would mean any IP address from 192.168.0.2 to 192.168.0.254 excluding currently occupied addresses by any device connected to your network (like your workstation address, router address, etc.).

### 7.2.3.3. Set up static IP address.

To set up IP address for ngBusComp, first connect it directly to your workstation using USB cable. Then start GConManager and select “\_CONFIG” application. Select your ngBusComp unit at the device list on the left side of the screen, then change IP address:

To change any network specific configuration of your ngBusComp:

- 1) Connect your ngBusComp directly to your workstation through USB cable (If connection to ngBusComp is already established through Ethernet cable, this step is not necessary),
- 2) Start GConManager and go to \_CONFIG application.
- 3) Then select your ngBusComp unit from the left side of the screen.
- 4) Then change DHCP option to “OFF” (if it is currently “ON”). Unit will restart, and your connection will re-establish.
- 5) Enter IP address that you would like to set, hit Apply button. Unit will restart, and your connection with ngBusComp will be established again.

The screenshot shows the WesAudio GCon System v7.0.2265 interface. The title bar reads "WesAudio GCon System v7.0.2265 - Connection Type: service". On the left, a sidebar lists several units: NGBUS\_COMPRESSOR 500 (selected), \_TITAN 1050, \_S1\_PROMETHEUS 855, \_S3\_HYPERION 905, \_S7\_MIMAS 8, and \_S9\_CALYPSO\_ADAT 400. The main area displays configuration details for the selected unit:

Type	NGBUS_COMPRESSOR
ID	500
Vendor	WesAudio
Software Version	7.0.2265
Software Status	Software Active
Hardware Version	1
Connection	Ethernet
DHCP	OFF
IP	192.168.0.90
MAC	d8:80:39:e1:53:4c
UDP PORT	9020

At the bottom right of the configuration area are buttons for REBOOT, UPGRADE, and UPGRADE WITH. At the bottom of the window are buttons for BACK, APPLY, and REFRESH.

Now you can disconnect USB cable, and connect ngBusComp using Ethernet cable.

#### 7.2.4. Direct connection – setting IP address on PC/MAC.

To directly connect unit to your workstation via Ethernet cable, it is mandatory to set up IP address for your network interface (Ethernet network card). This activity is not in scope of this manual, however it can be easily find online, please find below help pages:

Windows: <http://www.howtogeek.com/howto/19249/how-to-assign-a-static-ip-address-in-xp-vista-or-windows-7/>

OSX: <http://www.macinstruct.com/node/550>

## 8.Signal connection

ngBusComp is digitally controlled analog unit – it means that signal has to be connected in analog domain, but all its functions can be controlled via digital management protocol.

Signal is provided via back XLR sockets for each channel, additional TRS connector is provided for Sidechain functionality.



## 9.Automation and recall

This chapter describes all options to manage ngBusComp and automate its settings. Source of ngBusComp automation is DAW plugin available in all common formats.

### 9.1. DAW Plug-in

ngBusComp plug-in allows to control all unit's parameters, and it is available in all common standards VST2/VST3/AU/AAX.



ngBusComp comes with two plug-in types:

- Stereo – plug-in have full control over two channels of the unit, this mode supports dual mono, stereo and mid-side operation.
- Mono – plug-in connects to just one channel (two plug-in instances can connect to one hardware unit). This operation allows true dual mono usage, so for instance one channel can process a kick, and second a snare – in this mode, each hardware channel acts as separate mono unit.

### 9.1.1. Plug-in management panel



1. **Select connection button:** This button shows all connected devices, if “drop-down” list with element IDs is not visible, that means that no devices has been detected which support GCon protocol.
2. **Toggle connection button:** Button toggles connection status ON/OFF. Please note that button works only if ID has been previously selected using “Select connection button”.
3. **Connection details:** Additional connection information:
  - a. **USB** – unit has been connected through USB.
  - b. **ETH** – unit has been connected through Ethernet.

**NOTE:** This fields shows also connection status:

- a. **ON** – Font **WHITE/Style: NORMAL:** Connection is established.
- b. **OFF** – **FONT GRAY/Style: NORMAL:** Connection is NOT established.

- c. Connecting FONT GRAY/Style: ITALIC** – Connection process is ongoing. If “Connecting” state is visible for longer period of time (more than 5 seconds), and plugin has no control over the unit, that would mean:
- i. HW unit is no longer connected to your Workstation.
  - ii. HW unit was disconnected or detached by operating system for some reason.
  - iii. Any other reason which should be consulted with [support@wesaudio.com](mailto:support@wesaudio.com).
4. **Connection ID:** Unique Connection ID of connected HW unit.
5. **Fast preset change (A/B/C):** Button switches between available setups A/B/C. Please note that this presets won't switch any connection related parameters. That means Connection ID is shared between all available setups (A/B/C) and won't be changed if any of those buttons is hit.
6. **Undo:** Undo last parameter change.
7. **Redo:** Redo last parameter change.
8. **Menu:**
- a. Reset parameters to default – sets all plug-in parameters to default.
  - b. Disable/Enable IN metering.
  - c. Disable/Enable OUT metering.



## 9.1.2. ngBusComp – Stereo Plug-in



Plug-in structure almost exactly maps to the Hardware layout – so for more information about each control please refer to chapter [Front panel and main functions](#). There are following changes compared to the real hardware layout when unit is connected to a stereo plug-in:

- Bypass button is linked for both channels permanently to allow proper integration with DAWs.
- There is dedicated MUTE button for each channel **(1)**.
- There are two dedicated buttons for channel parameters copy (LEFT/MID channel to RIGHT/SIDE copy, and RIGHT/SIDE channel to LEFT/MID copy) **(2)**.

### 9.1.3. ngBusComp – Mono Plug-in



Plug-in structure almost exactly maps to the Hardware layout – so for more information about each control please refer to chapter [Front panel and main functions](#). There are following changes compared to the real hardware layout when unit is connected to a mono plug-in:

- There is dedicated MUTE button in right bottom corner.

Also please note that connecting ngBusComp to mono plug-in enables true dual-mono operation, which means:

- IRON mode can be independently changed for each channel,
- To change A/B/C from hardware front panel, touch encoder of particular channel needs to be hold.
- Compression detectors are in DUAL mode (unlinked) and operation mode can't be changed (DUAL / STEREO / M-S buttons are inactive).

#### 9.1.4. Stereo Plug-in – automation of linked channels

Please note that when channels are linked together using PARAMETER LINK function, only one channel needs to be automated and second channel will follow accordingly. If both channels will be automated, each channel will try to update the other one, which will definitely lead to unexpected and unwanted results.

## 10. Front panel usability functions

From ngBusComp front panel level, it is possible to copy channels between each other, copy presets or mute channels.

1. COPY CHANNEL:
  - a. To copy Channel 1 to Channel 2, please hold "DUAL" button for 2 seconds until it starts blinking in red, then press "M/S" button.
  - b. To copy Channel 2 to Channel 1, please hold "M/S" button for 2 seconds until it starts blinking in red, then press "DUAL" button.
2. COPY PRESET A/B/C:

To copy any preset – please hold corresponding button unless it will start blinking, then just press preset button that you would like to overwrite.
3. MUTE:
  - a. To MUTE channel 1, please press BYPASS for channel 1 for 2 seconds until it starts blinking in red, now channel is muted. To unmute, just press channel 1 bypass again.
  - b. To MUTE channel 2, please press BYPASS for channel 2 for 2 seconds until it starts blinking in red, now channel is muted. To unmute, just press channel 2 bypass again.

## 11. Compression modes

ngBusComp supports following compression modes (selectable from unit's front panel):

- DUAL – detectors unlinked (dual mono compression),
- STEREO – detectors work on summed signal,
- M/S – Signal is coded into Mid-Side mode, then left channel processes middle signal, and right channel processes side signal, after that signal is decoded back into L/R signal. In this mode compression detectors are unlinked.

## 12. 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.
- Mon 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

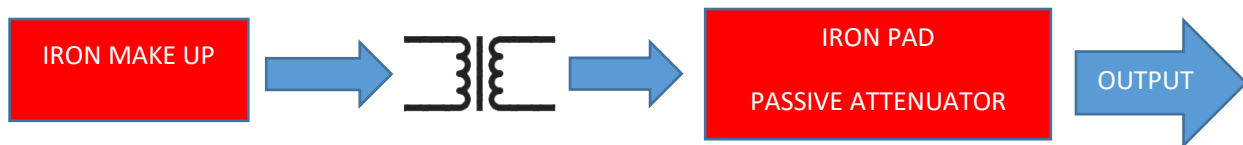
## 13. Selectable output

ngBusComp implements two selectable output stages:

- Electronically balanced,
- Transformer balanced with Passive Attenuator (relay cascade).

Output stage is switchable via IRON parameter. What is important to note, that in each mode MAKE UP is treated as different parameter – so in practice it is possible to have different MAKE UP value with transformer balanced output, and different value for electronically balanced output. This is implemented like this to easily toggle between two modes and check the difference maintaining same output level – in IRON mode usually MAKE UP value will be different to drive the transformer, and signal level will be compensated with IRON PAD. Using this approach those two output stages can be easily compared with same signal level.

### IRON MODE ENABLED



**As shown above, it is possible to raise signal with IRON MAKE UP to hit transformer harder, and use IRON PAD to lower it before hitting the next stage in analog chain!**

## 14. Sidechain

ngBusComp implements 5 sidechain filters, and external sidechain signal source.

### FILTERS:

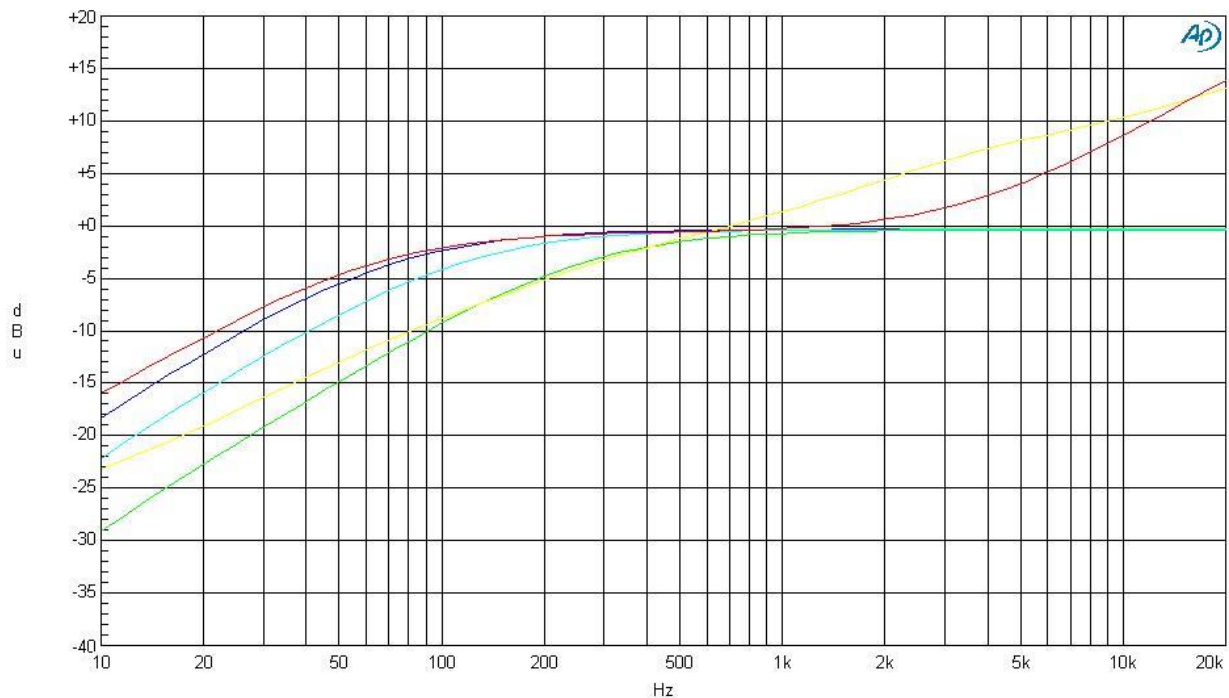
- OFF – Sidechain filter not active,
- 60 Hz – Sidechain High Pass Filter at 60 Hz (6dB/Octave).
- 90 Hz – Sidechain High Pass Filter at 90 Hz (6dB/Octave).
- 150 Hz – Sidechain High Pass Filter at 150 Hz (6dB/Octave).
- T1– special tilt filter with HPF and High boost.
- T2– special tilt filter with HPF and High boost.

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

Audio Precision

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



NGBUSCOMP USER MANUAL REV1

Upon setting SIDECHAIN parameter to "EXT", it engages back TRS connectors to send sidechain signal from external source. This can be useful feature if we would like to process sidechain signal in a different way compared to the onboard ngBusComp filters.



## 15. Abbreviations and terms

GCon – high speed communication protocol which allows full management and recall of analog devices. Please note that this is just management protocol, audio signal transfer is not in scope of its capabilities.

NG500 – Next generation 500 series.

NG500 connector – special connector which extends standardized 500 series connector with additional pins.

## 16. Warranty

All WesAudio products are built to the highest standards and should provide reliable performance for many years, subject to reasonable care, use, transportation and storage.

**WesAudio warrants all of our products to be free of defective parts and workmanship for a period of two years.**

This warranty period begins at the original date of purchase and is transferable to any person who may subsequently purchase the product during this time. This warranty excludes the following conditions: normal wear and tear, misuse, customer negligence, accidental damage, unauthorized repair or modification, cosmetic damage and damage incurred during shipment. During the time of this warranty, WesAudio will repair or replace, at its option, any defective parts or repair defective workmanship without charge, provided the customer has appropriate proof of purchase and that the product has its original factory serial number. In all warranty claims the customer is responsible for shipping costs to the WesAudio facility, and WesAudio pays for return ground shipping.

## 17. History

<b>Editor</b>	<b>Version</b>	<b>Date</b>	<b>Description</b>
Michal Weglicki	<b>V1</b>	<b>25.06.2020</b>	<b>Document created.</b>