USER GUIDE

ANGRY AUDIO

USB Analog
Audio Gizmo

P/N 991050

Revision 1.0
05/2024

Welcome to the world of Angry Audio, home of the audio gadgets and gizmos.

Some of us remember fondly the smell of vacuum tubes, the days of cart decks, turntables, and rotary attenuator audio consoles…and then came the computers. Prior to the 1990s, you'd be lucky if you saw computers in the front office of most stations…and then (ready or not) they came into the studios.

Fast forward to today, and just about every piece of audio you hear is played out of a computer somewhere. The biggest challenge has been finding good ways to get that audio in and out of those computers. Many of them eventually started to come with onboard audio, but the quality was often mediocre at best-and they did not play well with broadcast equipment. Several companies made specialized audio cards to solve these problems, but they were extremely expensive and cumbersome to use. (Lost that breakout cable, did ya? Good luck.)

Thanks to the home recording revolution, we now have gazillions of USB audio interfaces on the market, but the quality varies from excellent, to eeeewwwww. These interfaces are also usually jam packed with controls-which is awesome if you're recording music, but not so great if you just want to "set and forget". And Joe at the station just LOVES to twiddle those knobs and push those buttons…even if he has no idea what they do. Those devices just are not designed to be broadcast studio friendly. Another problem is ground loops between the USB audio interface and the computer's power supply, introducing annoying whines in the audio…and nobody likes a whiner.

Enter the USB Analog Audio Gizmo. Every Gizmo and Gadget – including the USB Analog Audio Gizmo – is designed to solve your biggest studio headaches and is constructed from only the finest artisan sourced materials…(OK, they came from Bob at the factory). All Angry Audio products are painstakingly engineered to perform even better than that band you loved back in High School.

Our promise and guarantee.

We love the USB Analog Audio Gizmo and we think you will too, but maybe you'll be the one customer who doesn't. However, unlike that knockoff electric guitar you bought online that broke after the first use, we'll buy your Gizmo back within 30 days if you change your mind.

Plus, every Gizmo and Gadget is warrantied to be free from defects in parts and workmanship for two full years after you purchase it. If a Gizmo or Gadget fails within this time period, Angry Audio, at its discretion, will repair or replace it so long as you let us know of the failure within the warranty period and can provide proof of purchase in the form of a dated sales receipt.

You can call us at +1 615-763-3033 or reach out to us online via our website at www.angryaudio.com/contact.

Making a good first impression.

When you unbox your USB Analog Audio Gizmo, we really hope it makes a good first impression and you take a moment to appreciate the lengths we've gone to in order to create a "built for broadcast" product. All of our products are overengineered to provide long-term reliability and guaranteed RFI immunity. Some of this is apparent – such as the durable powder-coated steel enclosure – but much of this goodness is invisible, like the premium components within. Even if you can't see it, you'll hear it!

A word or two about safety.

We think most of this stuff is common sense, but our lawyers at Dewey, Cheetham & Howe say we need to include a few things in case (for example) someone tries to use one of our devices in a game of disc golf.

The USB Analog Audio Gizmo is generally pretty safe (unless you get it wet or feed it after midnight). Power is provided via USB. There is no other means for external power. A pair of DC to DC converters inside the unit provide +/- 15 volts, which (while still generally safe) is just slightly more spicy than USB power.

CAUTION   AVIS

RISK OF ELECTRIC SHOCK. DO NOT OPEN
RISQUE DE CHOC ELECTRIQUE. NE PAS OUVRIR

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK DO NOT REMOVE COVER (OR BACK)
NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED PERSONNEL
ATTENTION: POUR EVITER LES RISQUES DE CHOC ELECTRIQUE, NE PAS ENLEVER LE COUVERCLE.
AUCUN ENTRETIEN DE PIECES INTERIEURES PAR L'USAGER.
CONFIER L'ENTRETIEN AU PERSONNEL QUALIFIE.
AVIS: POUR EVITER LES RISQUES D'INCENDIE OU D'ELECTROCUTION, N'EXPOSEZ PAS CET ARTICLE
A LA PLUIE OU A L'HUMIDITE

These power sources are voltage and current limited, but we still don't recommend opening the unit or otherwise trying to service it, since it could result in damage. To remove power from the unit, just unplug the USB cable.

Do not expose your Gizmo or its connections to rain or moisture. Any electronic device can fail without warning; do not use this product in applications where a life-threatening condition could result due to failure.

Why the USB Analog Audio Gizmo?

USB audio interfaces have been around for a while now, but few of them were truly "broadcast friendly". Sometimes you just want a simple way to get broadcast quality audio in and out of a computer, without all the extra software bells and whistles or front panel controls to get out of whack. We hate being out of whack, so we designed the USB Analog Audio Gizmo to be as "plug-and-play" as possible, in contrast to the office manager's printer that refuses to print in black because it's out of cyan ink.

Watch your head(room)!

The USB Analog Audio Gizmo features +4 dBu (nominal) analog audio I/O on StudioHub+ connectors. Headroom? We've got plenty. Unlike many USB audio devices, the peak input and output level is +24 dBu, for a full 20 dB of headroom! Those of us who have been in this business a while know the old trick of calibrating audio consoles with an oscilloscope and looking for the clip point. Anything lower than +24, and it left less headroom for peaks (or jocks who love to slam the meters).

Always Adaptable.

Not into StudioHub+ (yet)? We helpfully included adaptors to XLR connectors for both input and output. No miniplugs or ¼" plugs here–though if you want them, we've got you covered with optional StudioHub+ adaptors for that too. We even tossed in the correct type A to type B USB cable since it feels like we can never find those things when we actually need them...You don't even need (another) wall-wart since the USB Analog Audio Gizmo is powered directly over USB.

No whining allowed!

Speaking of which, the USB interface is galvanically isolated to prevent any possibility of noise due to ground loops. This detail is often overlooked on many USB audio devices, but it makes all the difference in eliminating power supply noise from the audio. I'm sure many of us have experienced the frustration of hum and whine from USB audio interfaces, particularly on laptops...Unplug the power adaptor and run on battery, noise disappears–but obviously that isn't a solution when it's 5 minutes to air and your battery is dying! No whining here!
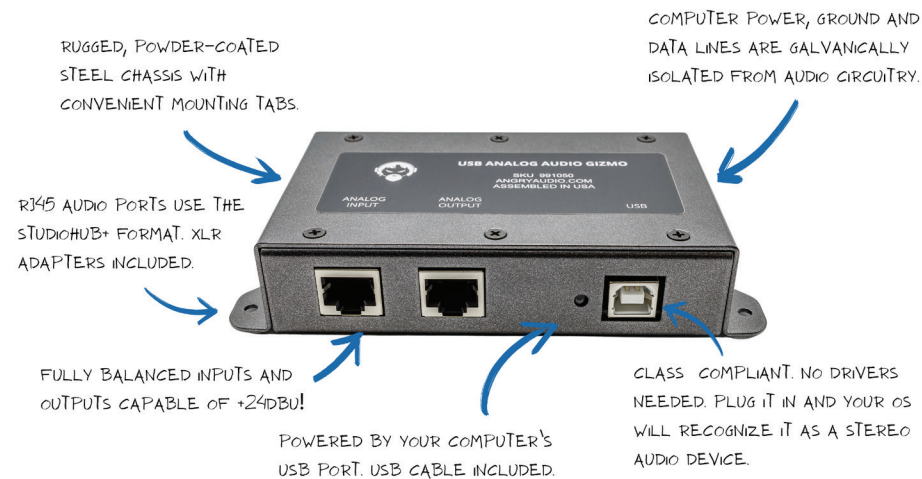
Installing your USB Analog Audio Gizmo

We've made it pretty simple for you to install the USB Analog Audio Gizmo. Like most of the other Angry Audio Gizmos, it comes with pre-drilled metal tabs that can be used to attach it to furniture, or any other convenient location. It also comes with pre-attached rubber feet if you just want to set it down somewhere and let gravity do what it does best.

If you choose to mount it using the integrated tabs and mounting holes, you'll need four No. 6 screws or other appropriate fastener depending on the material you are mounting to. If mounting into a wooden surface, drilling pilot holes is recommended to avoid splitting the wood (or cursing as your driver/drill slips and punctures a new hole in your body). Pro tip: Use the USB Analog Audio Gizmo as a template, mark the location through the mounting holes with a pencil, then drill the pilot holes.

Connections.

This is about as simple as it gets! Simple is good. One StudioHub+ RJ45 for audio input, a second StudioHub+ RJ45 for output, and a female Type B USB connection for the computer. That's it! The USB Analog Audio Gizmo is a class-compliant "plug-and-play" USB audio device and does not require any additional drivers on most systems, though you may need to configure the mixer and/or audio software on your particular system to use the USB Analog Audio Gizmo instead of other audio devices that may be present. If possible, use a USB 2.0 port to connect the USB Analog Audio Gizmo. A USB 3.0 port (ports with blue connectors) will also work but will slow down any other devices on that hub to USB 2.0 speeds.

RUGGED, POWDER-COATED STEEL CHASSIS WITH CONVENIENT MOUNTING TABS.

COMPUTER POWER, GROUND AND DATA LINES ARE GALVANICALLY ISOLATED FROM AUDIO CIRCUITRY.

RJ45 AUDIO PORTS USE THE STUDIOHUB+ FORMAT. XLR ADAPTERS INCLUDED.

FULLY BALANCED INPUTS AND OUTPUTS CAPABLE OF +24DBU!

POWERED BY YOUR COMPUTER'S USB PORT. USB CABLE INCLUDED.

CLASS COMPLIANT. NO DRIVERS NEEDED. PLUG IT IN AND YOUR OS WILL RECOGNIZE IT AS A STEREO AUDIO DEVICE.

Power.

The USB Analog Audio Gizmo is powered entirely through the USB connection. There is no dedicated power input required. Look, Ma! No wall wart! A green LED indicates power status.

RJ45 Audio Pinouts.

The RJ45 jacks use the popular StudioHub+ pinout. Pins 4, 5, 7, and 8 are unused on the USB Analog Audio Gizmo. It does not provide external power to downstream StudioHub+ devices.

Troubleshooting.

We think the USB Analog Audio Gizmo should be pretty self-explanatory and trouble-free, but if you run into any issues, we're here to help. While it should be "plug-and-play" on pretty much anything that supports a class-compliant USB audio device, there are so many variations in hardware and software configurations, it's nearly impossible to document them all. That said, we've tried to cover some basic troubleshooting steps here. If all else fails, consult the documentation for the software or hardware you are using.

No Audio Input.

If you aren't seeing any audio input, first check the upstream audio source to ensure you're sending audio into the USB Analog Audio Gizmo. If you have something like a Headphone Gizmo or other StudioHub+ device on hand that you can use to monitor the output of your source, it would be a great troubleshooting tool here. You'll need to power the Headphone Gizmo with its included wall-wart since the USB Analog Audio Gizmo does not provide or accept power via the StudioHub+ connections.

Second, check the audio connections between your source and the USB Analog Audio Gizmo. When all else fails, follow the path until the audio stops. Are there any jumpers or patch cables in-line? If you used RJ45 cables, are they wired straight-through using the T-568A or 568B standard throughout? Refer to the StudioHub+ pinout at https://studiohub.com/pinoutguide if necessary. In theory a crossover cable would only flip the left and right channels, but stranger things have happened!

Finally, check the settings in your OS and audio software. Is the correct input device selected both in your system's audio mixer, and in your software? The USB Analog Audio Gizmo appears on most systems simply as "USB Audio Codec". Is the input level turned up in the OS and software's mixers as well (if applicable)?

No Audio Output.

Check the same things you would when troubleshooting no audio input, but from the other direction. Again, a Headphone Gizmo or other StudioHub+ device can come in handy here for verifying if there is output from the USB Analog Audio Gizmo. Is the cabling from the output of the USB Analog Audio Gizmo correct? Is the downstream audio device powered on? Is the correct input on the device selected? Is the input gain on the device turned up?

After you've checked the physical connections and settings on the downstream audio device, as with checking the input settings, check the audio output settings in your OS and audio software.

No Audio Input OR Output.

(or: "He's dead, Jim…" if you're a Star Trek fan)

Check the green LED on the USB Analog Audio Gizmo. If lit, it shows that the device is receiving power over the USB connection. If not, the connected device is not providing power (or you may have a faulty USB cable). Try swapping the USB cable to see if the LED turns on and things start working. If the LED is on but things still aren't working, don't worry…we've still got a few things you can check.

Does the device appear in the computer's settings or in your audio software? The procedure for checking this will vary depending on what OS and audio software you are using, but in Windows it can be found in "Device Manager". Use the search bar near the start menu to search for Device Manager, then click on the result to open it. In Device Manager, look for an entry called "Sound, video, and game controllers". Under that entry you should see "USB Audio Codec". If this appears and there are no error indications (yellow triangle and exclamation mark) the USB Analog Audio Gizmo is installed correctly. You should also see a "Speaker" icon near the clock on the taskbar. If you can click that icon and select "USB Audio Codec" as the output, the USB Analog Audio Gizmo should be working.

If the green LED is on, but the device still does not appear in the system's audio settings, try switching USB ports and then look in Device Manager again (or your system's equivalent tool) to see if it appears. If it works after switching USB ports, it may indicate an issue with the original USB port, or a driver on the system that did not get installed completely.

If none of that works (and you've gone through all the steps for troubleshooting audio input and output) try the USB Analog Audio Gizmo on a different system. If it works on the other system, you may have an issue with the USB ports and/or drivers on the original system. If it fails on the other system as well (though rare) you may have a defective Gizmo. Contact us for information on how to proceed.

Hum or Noise.

With a galvanically isolated USB interface and fully balanced audio I/O, hum and noise should not be an issue for the USB Analog Audio Gizmo, but there are still certain cases that can introduce noise.

First, the StudioHub+ standard calls for SHIELEDED twisted pair cable. Will unshielded cable work? Yes…until it doesn't. Not all devices are created equally, and not all are good at rejecting noise on inputs.

Second, check the wiring of all twisted pair cabling and any connectors or terminations in the cable path. This may be less an issue if you're connecting to equipment in the same rack, but it's still important to check. If you're using pre-made Cat5/Cat6 jumper cables, try swapping the cable. Even pre-made cables can occasionally be defective.

Third (and this is probably going to sound like a broken record, but it's important) check the upstream and downstream equipment. Is the audio clean at the source? At the output of the USB Analog Audio Gizmo? At the input to the downstream equipment? Try devices connected directly to the input and output of the USB Analog Audio Gizmo to verify good audio locally.

Finally (especially in the case of longer cable runs) does the cable path run in parallel with AC power circuits for any length? One primary culprit of hum is cabling running near fluorescent fixtures in false ceilings. It happens more often than it probably should, especially if you're using existing Cat5/Cat6 data lines for analog audio.

Clicks and Pops.

If the USB Analog Audio Gizmo is otherwise working properly but you are experiencing clicks and pops in the audio, there are several possible reasons. First (and most likely) are power saving settings on your system. This may not be an issue for applications that don't require 24/7 playback or recording, but in some cases, you may need to disable any power saving settings (particularly in Windows). A full description of how to do this is beyond the scope of this short manual, but there are many excellent writeups on the subject with a quick look on your favorite Internet search engine for "Disable Windows Power Save".

Specifications.

Part Numbers

USB Analog Audio Gizmo   991050

Specifications

THD+N	≤ 0.01% (20Hz - 20kHz)
Output Level	+4dBu nominal, +24dBu max.
Input Level	+4dBu nominal, +24dBu max.
Sample Rate	44.1kHz or 48kHz (Host dependent)
Resolution	16-bit (CD quality)

Power and Environmental

Power Input (USB host)	5VDC, 500mA.
Operating temperature	0° to 40° C (-4° to 104°F)
Storage temperature	-20° to 45° C (-4° to 113°F)
Relative Humidity	0% to 90% non-condensing

Product Weight & Dimensions

Shipping box   8in x 6in x 3in, 3 pounds

Box includes

USB Analog Audio Gizmo

USB-A to USB-B cable, 3ft

ADAPTM-XLRFD (StudioHub+ to female XLR stereo adapter)

ADAPTM-XLRMD (StudioHub+ to male XLR stereo adapter)

Mounting screws

Compliance in the U.S.

In the U.S., this Gizmo complies with the limits for a Class A computer device as specified by FCC Rules, Part 15, Subpart J, which are designed to provide reasonable protection against such interference when this type of equipment is operated in a commercial environment.

...and in Canada.

In Canada, this Gizmo does not exceed the Class A limits for radio noise emissions set out in the Radio Interference Regulations of the Canadian Department of Communications.

...and in Europe.

This Gizmo complies with the requirements of the EEC Council Directives 93/68/EEC (CE Marking), 73/23/EEC (safety – low voltage directive), and 89/336/EEC (electromagnetic compatibility). Conformity is declared to standards EN50081-1 and EN50082-1.

ANALOG IN

ANALOG OUT

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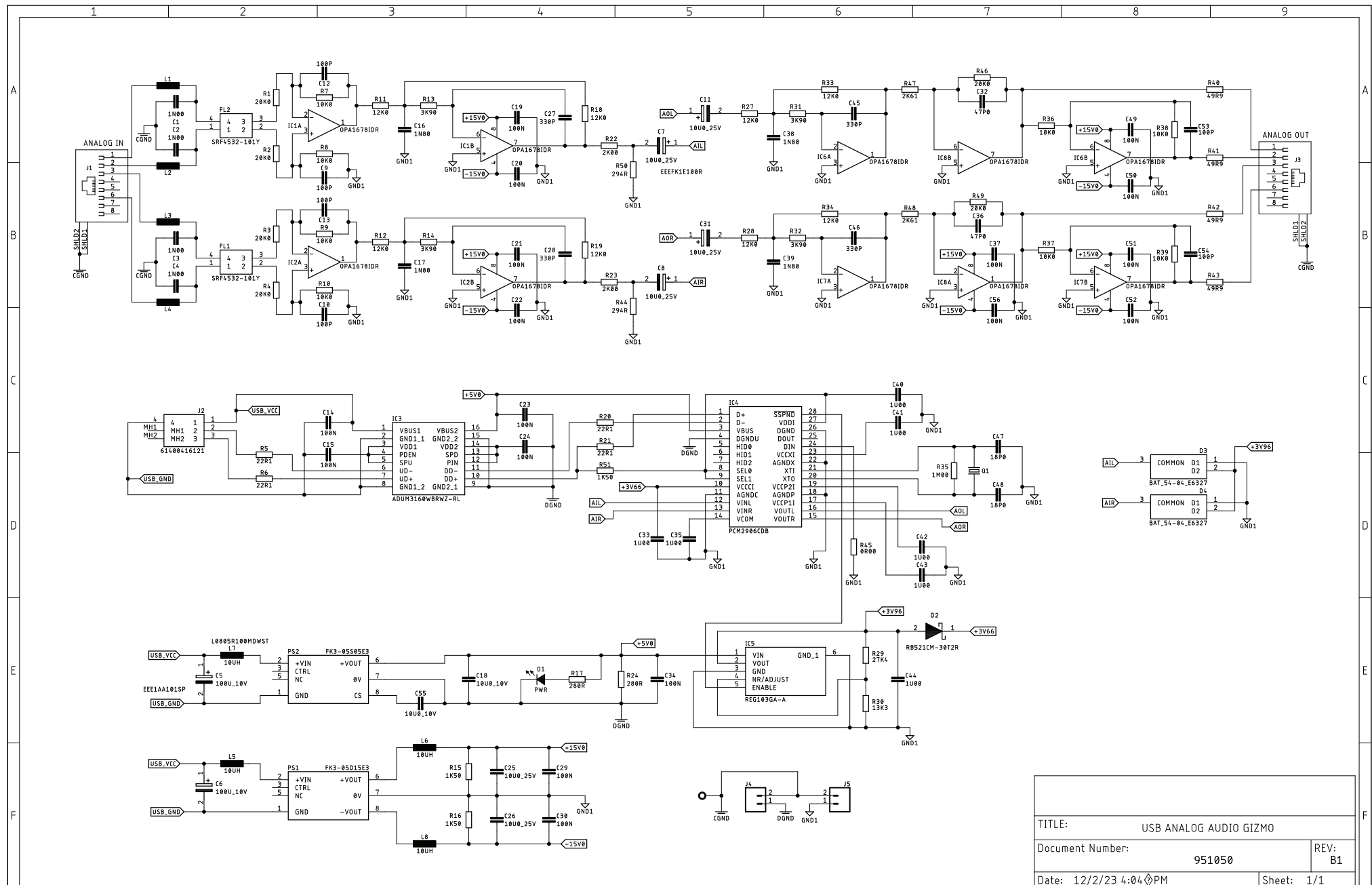
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Document Number: 951050

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