LDG Electronics

AAF7 Analog Audio Filter

For All Receivers and Transceivers

LDG Electronics, 1445 Parran Road, Saint Leonard, MD 20685

Contents

Specifications & Ratings

1. Analog filter frequency range:
   a. Lo Cut adjustment range: 50Hz-500Hz
   b. Hi Cut adjustment range: 500Hz-10000Hz
   c. Freq: Sets parametric EQ frequency
   d. Gain: Sets parametric EQ gain
2. Headphone driving power: 150mW@Max
3. Headphone output impedance: 8-200Ω
4. Input impedance range: Low impedance of 8Ω, high impedance of 10kΩ
5. Speaker output power: >5W (8Ω, THD <0.1%)
6. Speaker output impedance: 4-8Ω
7. Operating voltage: 13.8 VDC +/-15%, 1 amp
8. Size: 6.0 x 3.5 x 1.5 inches (150 x 90 x 40 mm)
9. Weight: 1.5 pounds (680 grams)

Introducing the AAF7 Analog Audio Filter

Congratulations on selecting the LDG Electronics AAF7 analog audio filter. The AAF7 can be widely applied to external audio processing of all types of receiving equipment such as radio transceiver, receiver or broadcast radio to effectively reduce background noise by more than 10 dB, improve the signal-to-noise ratio by 20 dB, and increase the overall all signal readability on the RS and RST scales.

This filter differs from others you may have used in that it employs only analog circuits, resulting in significantly better audio quality than digital filters.

Welcome Notes

Welcome to the LDG Electronics family of amateur radio equipment! Starting in 1995 and based in St. Leonard, Maryland, LDG defines state of the art equipment for the Amateur ("Ham") radio community.
In addition to offering established equipment we're continuing to grow our product line. Check our website (https://www.ldgelectronics.com) often to learn about new developments! We also offer complete product support through our website, and we're here for you for any questions that you might have. All of our products are supported with a two-year transferable warranty. When you sell your LDG product provide the new owner with a copy of the original sales receipt and the two-year warranty transfers to the new owner.

There is no need to complete a warranty card or to register our products. Your product receipt establishes eligibility for warranty service; save that receipt! Send your receipt copy with the product when you ship your product to us for repair. Products sent to LDG without a receipt are considered requests for out-of-warranty repair.

LDG does not warranty against product damage or abuse. This means that a product failure, as determined by LDG, to be caused by the customer or by other natural calamity (e.g. lightning) is not covered under the two-year warranty. Damage can be caused by failure to heed the product's published limitations and specifications or by not following good Amateur practice.

OUT OF WARRANTY SERVICE

We will gladly provide service any time a product fails after the warranty. Send the product to us for repair. We will determine what needs to be done, and, based on your prior instruction, either contact you with an estimate or fix it and contact you with a request to pay any repair charges. Please contact LDG with any questions before you send us an out-of-warranty product for repair.

RETURNING YOUR PRODUCT FOR SERVICE

Returning a product to LDG is easy. We do not require a return merchandise authorization, and there is no need to contact LDG to return your product. Visit the Customer Support Center on our website and download the LDG Product Repair Form. On the Repair Form tell us exactly what happened (or didn't happen) and why you believe the product needs servicing. The technician will attempt to duplicate the problem(s) you had based on how well you describe it so please be accurate and complete.

Ask your shipper for a tracking number or delivery verification. Please include your email address so our shipper can alert you when your product is being returned to you. Be assured that our staff makes every effort to complete repairs ahead of our published wait time. Your patience is appreciated.

Repairs can take four to eight weeks, but are usually faster. The most recent information is found at the LDG Customer Support Center. Send your carefully packaged unit with the Repair Form to:

LDG Electronics, Inc.
Attn: Repair Department
1445 Parran Rd
St. Leonard, MD 20685

PRODUCT FEEDBACK

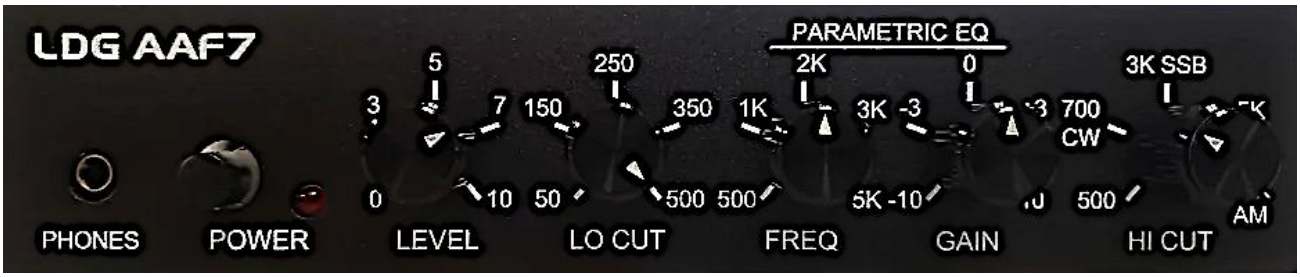
We encourage product feedback! Tell us what you think of your LDG product. In a card, letter, or email (preferred) tell us how you use the product and how well it worked in your application. Send along a photo or even a schematic or drawing to illustrate your narrative. We like to share your comments with our staff, our dealers, and even other customers at the LDG website.

Your AAF7 Filter

Your AAF7 is a quality, precision instrument that will give you many years of outstanding service; take a few minutes to get to know it.

Front Panel:

The front panel of the AAF7 features one pushbutton, five control knobs, one jack and one LED indicator:



Power: Turns the unit on or off
LED: Indicates power on
Level: Controls speaker and headphone output levels
Lo Cut: Sets lower filter frequency
Hi Cut: Sets upper filter frequency
Freq: Sets parametric EQ frequency
Gain: Sets parametric EQ gain
Phones: Headphone jack

Back Panel:
The rear panel of the AAF7 has four jacks:

Input: Audio input jack, 3.5 mm (1/8”) stereo tip-ring-sleeve jack

Line Out: Line-level output for recording, RCA jack

5W Speaker: Audio output, 5 watts to speaker, 3.5 mm (1/8”) stereo tip-ring-sleeve jack

Power Input: 13.8 VDC +/- 15% @ 1A, 5.5 x 2.5 mm coaxial power jack, center pin positive

Installing the AAF7 Filter

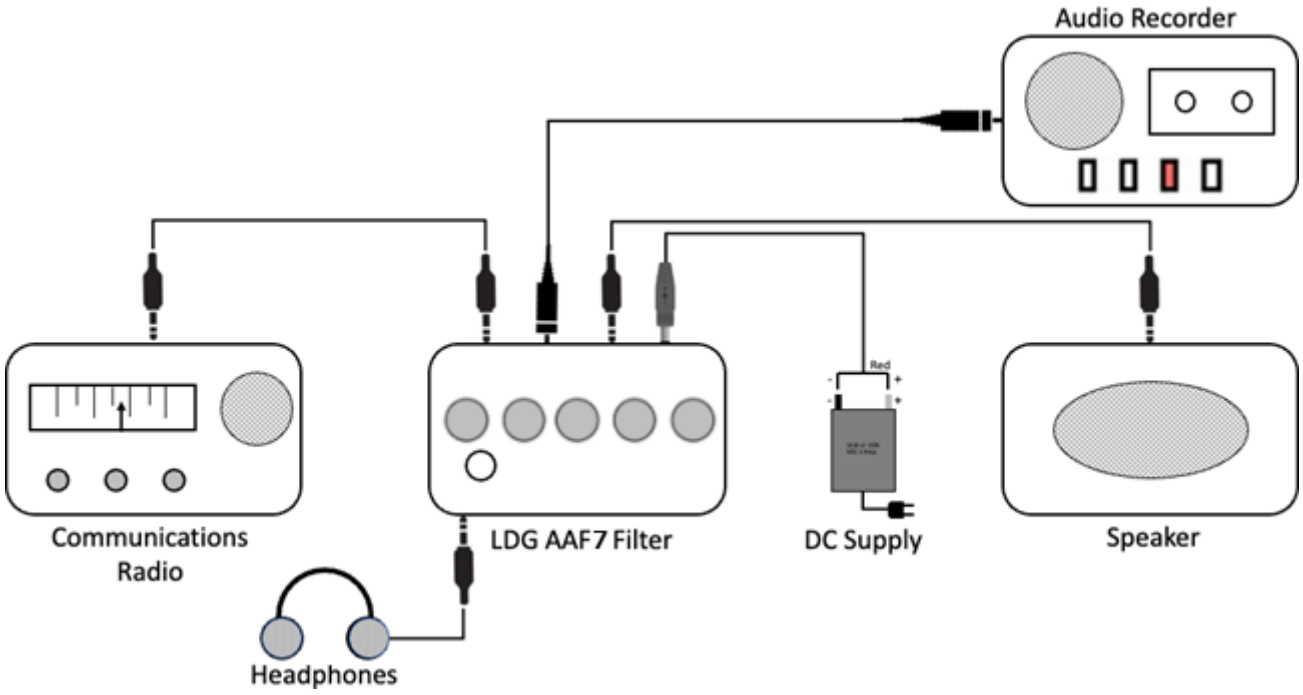
The AAF7 is intended for indoor use only; it is not water-resistant. If you use it outdoors, you must protect it from rain.

Place the AAF7 in a convenient location near the radio. Always turn your radio off before plugging or unplugging anything. The radio may be damaged if cables are connected or disconnected while the power is on.

Connect the Audio Input jack of the AAF7 to the audio output jack of your radio with the supplied cable. Both low and high impedance input is supported.

Connect your 4 - 8 ohm speaker to the Speaker Out jack on the back of the AAF7.

Connect the AAF7 to a suitable power supply using the supplied cable. This cable has a 2.5x5.5mm coaxial plug on the end. Plug the coaxial plug into the Power jack on the rear of the AAF7 and connect the other end to a DC power source of 13.8 +/- 15% VDC, capable of supplying at least 1 amp. A regulated power supply is recommended but not required.



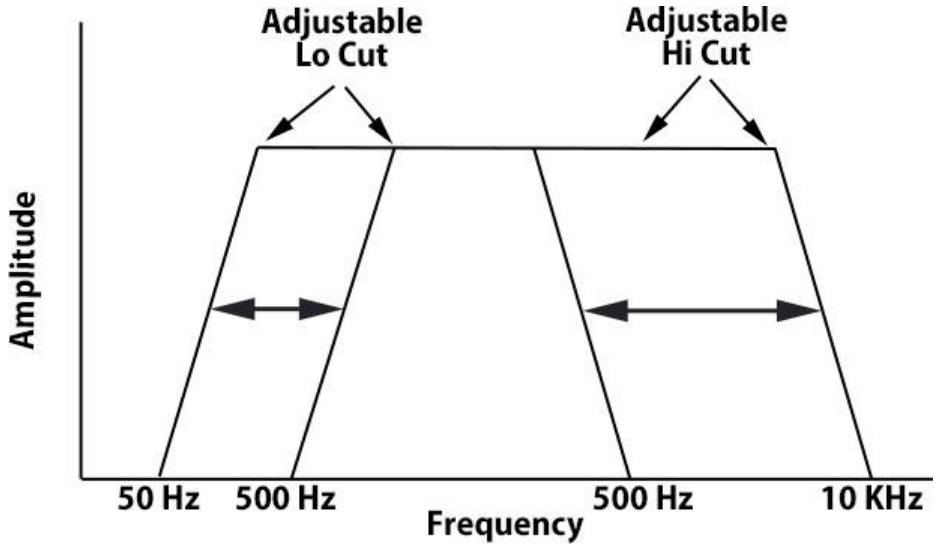
Operation

All operations of the AAF7 are controlled via the front panel. Set the Level control on the filter and volume control on the radio to zero. Press the Power button to turn the AAF7 on; the LED will light. If you use headphones, plug them into the front panel jack; this will disconnect the speaker. Adjust the Level control to your preference.

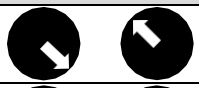
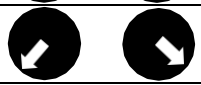
Filtering is controlled by the Lo Cut, Hi Cut, Gain, and Freq controls. Start Gain at 0 db (12 o'clock). Start with the Lo Cut control set to 50 Hz (counterclockwise), and the Hi Cut control set to 10 KHz (clockwise). This sets the filter to the maximum audio bandwidth.

Adjust the Lo Cut control clockwise to raise the lowest audio frequency passed, reducing low-frequency rumble. Adjust the Hi Cut control counterclockwise to reduce the highest audio frequency passed, reducing high-frequency hiss.

Adjusting the Lo and Hi Cut controls changes the width of the audio bandpass and also its position on the audio spectrum. The diagram below illustrates this process:



Suggested initial settings:

Mode	Lo Cut, Hz	Hi Cut, Hz	Dials
CW	500	700	
SSB	350	3K	
AM Amateur	50	5K	
AM Broadcast	50	10K	

Application Notes

You can move the audio bandpass up or down by adjusting both the Lo Cut and Hi Cut controls. This has the effect of moving the center of the audio bandpass to a higher or lower frequency. You can “tune” in a desired signal or reject an interfering signal by adjusting both the Hi Cut and Lo Cut controls together. For voice enhancement on SSB, adjust the Freq controls to 2.7 KHz and adjust the Gain control to +3 to +5. Sweep the Freq control between 2 and 3 KHz for maximum voice clarity.

Care and Maintenance

The AAF7 filter is essentially maintenance-free. The outer case may be cleaned as needed with a soft cloth slightly dampened with household cleaning solution. As with any modern electronic device, the AAF7 can be damaged by temperature extremes, water, impact, or static discharge.

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