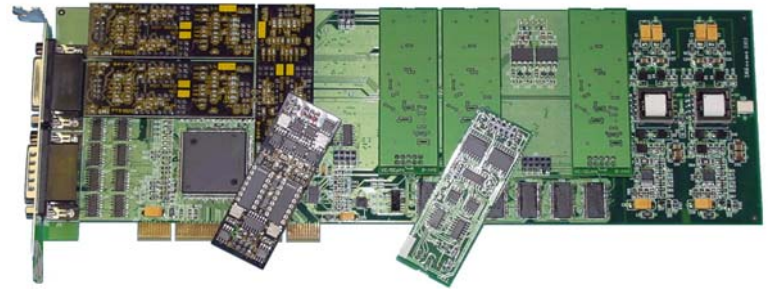




# AAF-3PCI Programmable, 2- to 8-Channel Low-Pass (Band- Pass Optional) Filter and Instrumentation Amplifier Board for the PC

Compatible with any 12- or 16-bit A/D converter boards  
Differential or single ended input on any or every channel  
 $\pm 10V$ max Signal Input and Output  
Rejection band attenuation up to -90dB  
8-pole Butterworth, Bessel, elliptic(Cauer), linear phase filter types  
Software select any corner frequencies from 0.1 Hz to as high as 200 kHz (refer to filter characteristic specification for details)  
Modular 2, 4, 6, or 8 low-pass filter channels  
Modular 2, 4, 6, or 8 instrumentation amplifier channels  
Optionally configurable as band pass  
factory calibrated for unity gain and very low DC offset filter output  
Individually channel selectable AC or DC coupling  
multiple AAF-3PCI boards can operate in the same PC  
Software-programmable gains of 0.5 to 1000  
Each channel can be used as a dynamic tracking filter  
Windows 95/98/Me/NT/2000/XP compatible menu setup software  
Write custom software and communicate directly to the DLL  
DLL and driver libraries compatible with, LabVIEW, HP-VEE, DasyLab  
Visual BASIC, Visual C++ and any other high level language



## Amplify and then filter to improve signal

High-quality instrumentation amplifiers on each channel provide software-selectable gain as well as differential inputs with high-common mode rejection. Channels are independently programmable for gain settings of 0.5, 1, 2, 5, 10, 20, 50, 100, 200, 500 or 1000.

## Software select any corner frequency

The corner frequency of each 2-channel pair of filters is software controlled to select any frequency from 0.1Hz to 50kHz for the AAF-3F linear phase filter or from 0.1Hz to 100kHz for the AAF-3F elliptic filter. The AAF-2F filters provide corner frequencies from 0.1Hz to between 66kHz and 200kHz depending on the filter characteristic installed. Please refer to the AAF-2F data sheet for more information. Each two-channel filter pair can be set to independent corner frequencies on each AAF-3PCI. Optionally, up to 4 external clocks can be used to control the corner frequencies of each filter pair in tracking filter applications.

## AC couple any channel any time

All channels can be individually bypassed, AC coupled or DC coupled all under software control.

## All Software is Included

The AAF-3PCI comes with a complete collection of menu-driven programs and externally programmable drivers.

- **SystemViewAAFpci** is a ready made Windows application that uses a few simple mouse clicks to program the board's filter type, corner frequency, and gain setting. Once selected, the desired parameters can be saved as an AAF-3PCI configuration file that can be easily recalled and reappied.

## Adaptable to most applications

The AAF-3PCI PC plug-in board provides 2 to 8 programmable channels of low-pass filtering and/or high-quality instrumentation amplifiers, optional AC coupling, with optional band-pass configuration for front-end signal conditioning with all popular A/D converter boards.

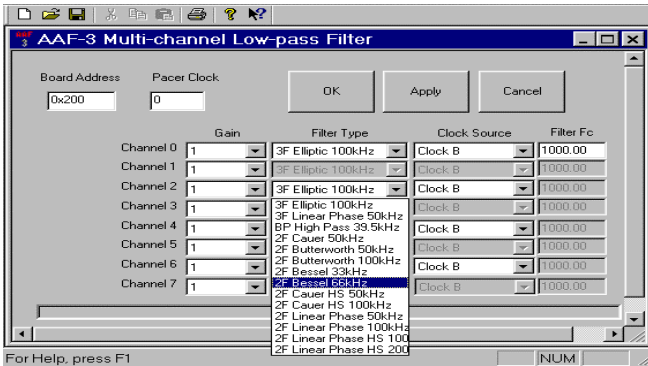
## Mix and match filter characteristics at will

Each channel is available with a wide choice of filter characteristics using the AAF-3F software selectable 8-pole elliptic and linear phase filters or the AAF-2F which is available as a Butterworth, Bessel, elliptic(Cauer), or linear phase filters. High stop-band attenuation of -90dB is available. When using the AAF-3G gain, a high common-mode rejection of 90 to 100 dB typical at high gains can be attained.

## Protection from high common mode voltages

Using an AAF-2F filter without the AAF-3G amplifier increases the common-mode protection of the AAF-3 to  $\pm 40V$ .

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- **DLL driver for Windows 95/98/Me/NT/2000/XP**, can be called from custom application programs written in any high level language. Examples programs are provided for Visual Basic and Visual C++. The DLL can also be called from LabView, HP-VEE, DASYlab or any other graphical programming environment.

### Filter Options (Please refer to filter data sheets for details)

#### Low pass

AAF-3F .....	8-pole elliptic 100kHz and 8-pole linear phase 50kHz
AAF-2F/B .....	8-pole Butterworth 100kHz bandwidth
AAF-2F/L .....	8-pole Bessel 66kHz bandwidth
AAF-2F/CE .....	8-pole Cauer Elliptic 50kHz bandwidth
AAF-2F/HC .....	8-pole Cauer Elliptic 100kHz bandwidth
AAF-2F/LP .....	8-pole Linear Phase 100kHz bandwidth
AAF-2F/HLP .....	8-pole Linear Phase 200kHz bandwidth

#### High Pass

AAF-HP .....	8-pole elliptic maximum 200:1 bandwidth Low pass to High pass frequency
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#### Instrumentation Amplifier Options (refer to amplifier data sheet)

AAF-3G .....	x0.5, 1, 2, 5, 10, 100, 200, 500, 1000 Software selectable
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#### AC Couple

Corner Frequency .....	0.03 Hz
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#### Software Control

Bypass .....	on/off individual channel
Coupling .....	DC/AC individual channel
Gain setting .....	discrete levels individual channel
Filter Frequency .....	continuous from 0.1Hz to filter bandwidth
Frequency control sources .....	4 internal routed to any 2-channel pair 4 external routed to any 2-channel pair
A/D sync (pacer clock) .....	on/off from any internal freq. cntrl. Src.
Pacer clock divider .....	1 to 260
Band-pass mode .....	on/off routes output of filter channels ..output channel 0 to input channel 2 ..output channel 1 to input channel 3 ..output channel 4 to input channel 6 ..output channel 5 to input channel 7

#### Physical

Number of channels .....	2 to 8
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### DC Offset continuously compensated

All filter modules for the AAF-3PCI feature automatic electronic DC offset compensation and are highly suited in applications requiring minimal offset. The DC offset specification is listed with the DC offset compensation enabled. The DC offset compensation circuitry may be optionally disabled.

The DC offset specification reflects the actual electronic operation and does not require extra software normalization techniques using stored constants.

### Differential or single ended input Connection

The AAF-3G gain daughter board or the AAF-2F filter board provides differential input. If only an AAF-3F filter daughter board is used then the input is single-ended only.

Power consumption .....	200mA at +5V 150mA at +12V per AAF-2F 125mA at +12V per AAF-3F 75mA at +12V per AAF-3G 125mA at +12V per AAF-HP
Operating temperature .....	0°C to 70°C

### System Accessories

The AAF-3PCI is compatible to all popular A/D and D/A boards and devices. To ease the complexity of including the AAF-3PCI to the data acquisition system, Alligator Technologies will construct input or output interface cables to the customer's specification. Please contact the factory for all of the options.

Alligator Technologies also manufactures BNC boxes, rack mount BNC panels, and screw terminal adapters for AAF-3PCI input and output making for easy integration into any system.

For the customer constructing their own cables a complete mating connector kit is also available.

<b>AT-BNC-3P/I</b>	8-channel BNC input box with cable
<b>AT-BNC-3/O</b>	8-channel BNC output box with cable
<b>STA-AAF-3</b>	Screw Terminal adapter for I/O
<b>CA31P</b>	input cable open ended
<b>CA32</b>	output cable open ended
<b>CA33</b>	output cable with mating connector to A/D
<b>CA35P</b>	input cable with mating connector to source
<b>CA39</b>	output cable with mating connector to A/D and second connector for auxiliary A/D pins
<b>CK-A3P</b>	AAF-3PCI mating connector kit

Refer to the Alligator Technologies Product Price List or your distributor for details on how to specify and order cable accessories.

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