



Model VM300PAFF

Programmable Amplifiers with Fixed Frequency Filters VME Board

32 Channel

Description

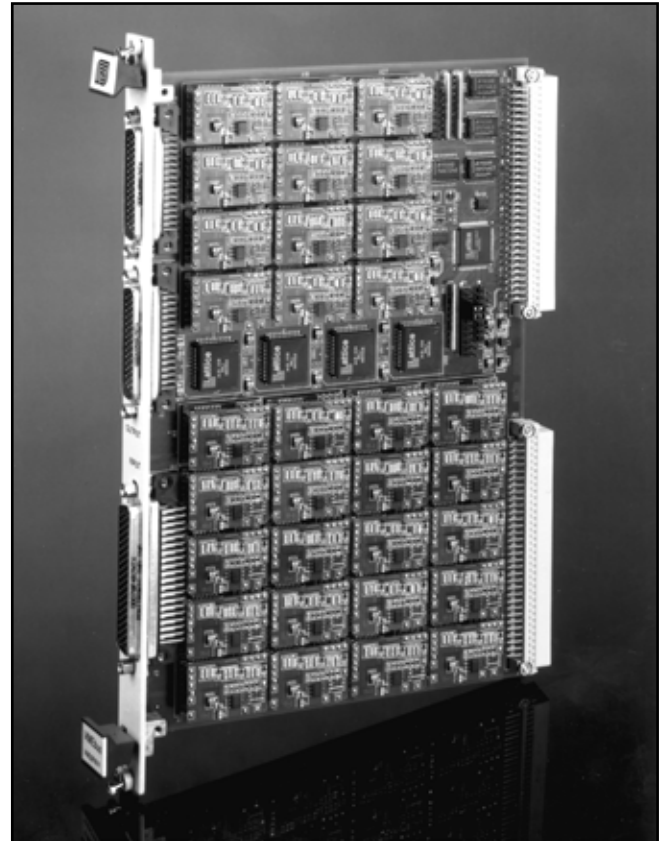
Frequency Devices' Model VM300PAFF comprises a family of VMEbus amplifier/filter boards offering software programmable differential amplifiers combined with precision 3-pole Butterworth or Bessel linear analog filters in a single width B-size (6U) VME form factor. VM300PAFF boards provide simultaneous access to 32, DC-coupled wideband signals while providing programmable gain from -12dB to +42dB, in 6dB steps and fixed frequency filters with corner frequencies from >100 kHz to 300 kHz. VM300PAFF boards may be configured with 8, 16, or 32 channels. The boards conform to VME revision C.1 as an A16/D16 Slave. Available options include AC coupled input and/or differential output.

Features/Benefits:

- Simultaneous access over 32 channels offers a low cost, versatile and convenient way to provide amplification and filtering.
- Three active read/write registers provide programming and set-up verification.
- Interchannel crosstalk <-100 dB provides precision performance solutions to design engineers, system integrators and OEM's.
- Three pole Butterworth or Bessel transfer functions with a broad range of corner frequencies to meet a wide range of applications.
- High channel count density without sacrificing performance maximizes chassis utilization.

Signal conditioning applications include:

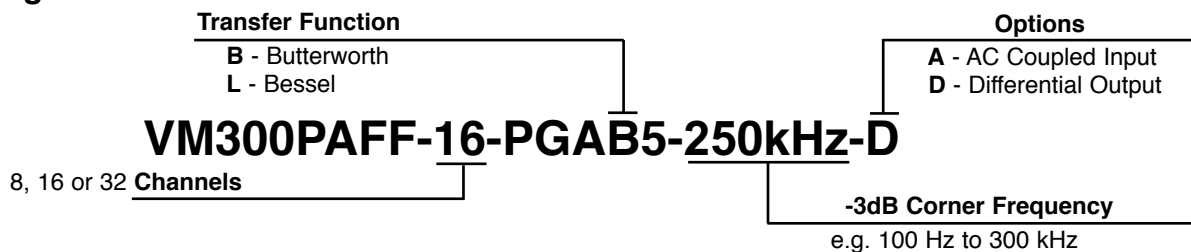
- Sonar, navigation and aerospace
- Engine test and simulation
- Acoustic, vibration analysis & control
- Satellite and telecommunications
- Automatic test equipment (ATE)



AMPLIFIER/FILTER OPTIONS

- PGAB5-300 -12 dB to +42 dB in 6 dB steps
Butterworth 3-pole 100 Hz to 300 kHz
- PGAL5-300 -12 dB to +42 dB in 6 dB steps
Bessel 3-pole 100 Hz to 300 kHz

Ordering Information





Specifications

(@ 25°C and rated Power Input)

32 CHANNEL VME SIGNAL CONDITIONING BOARD

Analog Input

- | | |
|-------------------------------------|--------------------|
| 1. Impedance | 1 M Ω /22pF |
| 2. Maximum Input | \pm 15V |
| 3. AC Couple (Optional Fixed Freq.) | 10 Hz to 1 kHz |

Analog Output

- | | |
|---------------------------------|---------------------------------------|
| 4. Impedance | 1.0 Ω typ., 10 Ω max. |
| 5. Linear Operating Range | \pm 5V, Output clamped to \pm 9 V |
| 6. Channel to Channel Crosstalk | <-100dB @ 1 kHz, <-90dB @ 20 kHz |
| 7. Maximum Current | 5.0mA |
| 8. Offset Voltage | 2mV RTI, NTE 25mV max. |
| 9. Offset Temp. Coeff., RTI | \pm (5 + 100/G) μ V/°C max. |

Filter Characteristics

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|--------------------------------------------------------------------------------------|--------------------------------------------------------|
| 10. Anti-alias filtering | 3-pole low-pass Butterworth or Bessel fixed frequency |
| 11. Cut-off Frequency f_c (-3dB) | Fixed frequency from 100 Hz to 300 kHz |
| 12. Amplitude Match* | \pm 0.1dB @ DC, linear to \pm 0.25dB at f_c |
| 13. Phase Match* | 0.5° typ., 2.0° max. @ f_c |
| 14. Noise Voltage, RTI | 20nV/ $\sqrt{\text{Hz}}$ @ 1 kHz, G=128 |
| 15. Distortion PGA5, G=1X
@ 1V _{RMS} Output, R _L =2k Ω | -83dB, 1 kHz single ended
-86dB, 1 kHz differential |

Gain

- | | |
|--------------------------|---------------------------------------------------------------------------------------------------------|
| 16. Gain Programming (G) | 0.25X to 128X in factors of 2:1 (before filtering)
32 channels programmed over VMEbus with read-back |
| 17. Gain Accuracy @ DC | \pm 0.1dB max. |

VMEbus

- | | |
|---------------|---------------------------------------------|
| 18. Interface | A16/D16, D08 (EO), Slave |
| 19. Registers | Three active R/W registers in 64 byte block |

Power Supply

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|------------------------|----------------------------------------------|
| 20. From VME Backplane | +5V - 1.0A max.
\pm 12 - 0.7A max. each |
|------------------------|----------------------------------------------|

Environmental

- | | |
|---------------|----------------------|
| 21. Operating | 0°C to +70°C |
| 22. Storage | -25°C to +85°C |
| 23. Humidity | 0-95% non-condensing |

Mechanical

- | | |
|------------------------------------|-----------------------------------------------------------------------------------|
| 24. Card Size | VMEbus 6U single slot 9.17 x 6.3 inches, (233 x 160 mm) |
| 25. No. of Input Channels | 32 Differential - DC coupled |
| 26. No. of Output Channels | 32 Single Ended - DC coupled, Two groups of 16 |
| 27. Differential Output (Optional) | |
| 28. Mating Connectors | Input: Male high density 78-pin D-sub
Output: Female high density 44-pin D-sub |
| 29. Weight | 1 LB., (454 grams) |

* Any two channels set to same gain and loading