





**FREQUENCY  
DEVICES™, INC.**

# Model VM2.0PAFF

Wideband Programmable  
Gain Amplifier with  
Fixed Frequency Filter

## Specifications

(@ 25°C and rated power Input)

### 32 CHANNEL VME SIGNAL CONDITIONING BOARD

#### Analog Input

- |                                     |  |
|-------------------------------------|--|
| 1. Impedance                        | 1 M $\Omega$ //22 pF                                     |
| 2. Maximum Input                    | 20V pk-pk each leg                                       |
| 3. Linear Input Range               | $\pm$ 8V pk  |
| 4. AC Couple (Optional Fixed Freq.) | 20 Hz to 1.0 kHz   |
| 5. CMRR                             | $\geq$ 50 dB, DC to 100 kHz<br>$\geq$ 40 dB, DC to 2 MHz |

#### Analog Output

- |                           |  |
|---------------------------|--|
| 6. Impedance              | 1.0 $\Omega$ typ., 10 $\Omega$ max.          |
| 7. Offset Voltage         | 25 mV typ., 50 mV max.                       |
| 8. Linear Operating Range | $\pm$ 4V into 500 $\Omega$                   |
| 9. Offset Temp. Coeff.    | $\pm$ (5 + 100/G) $\mu$ V/ $^{\circ}$ C max. |

#### Filter Characteristics

- |                                    |   |
|------------------------------------|---|
| 10. Anti-Alias Filtering           | Fixed frequency 4-pole low-pass Butterworth or Bessel         |
| 11. Cut-off Frequency $f_c$ (-3dB) | >100 kHz to 2.0 MHz   |
| 12. Amplitude Match*               | $\pm$ 0.2 dB @ DC   |
| 13. Phase Match*                   | 2.0 $^{\circ}$ max. @ $f_c$                                   |
| 14. Noise Voltage Density, RTI     | 25nV/ $\sqrt{\text{Hz}}$ @ 1 kHz                              |
| 15. Distortion (2 V pk-pk)         | $\leq$ -60 dB to 100 kHz<br>$\leq$ -50 dB, 100 kHz to 2.0 MHz |

#### Gain

- |                          |  |
|--------------------------|--|
| 16. Gain Programming (G) | 0.25X to 64X in factors of 2:1 (before filtering)<br>32 channels programmed over VMEbus with read-back |
| 17. Gain Accuracy @ DC   | $\pm$ 0.1 dB max.  |

#### VMEbus

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

#### Power Supply

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|------------------------|--|
| 20. From VME Backplane | +5V – 1.0A max.<br>$\pm$ 12 – 0.7A max. each |
|------------------------|--|

#### Environmental

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|---------------------|--------------------------------------|
| 21. Operating Temp. | 0 $^{\circ}$ C to +70 $^{\circ}$ C   |
| 22. Storage Temp.   | -25 $^{\circ}$ C to +85 $^{\circ}$ 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 – DC coupled   |
| 26. No. of Output Channels | 32 Single ended – DC coupled, Two groups of 16  |
| 27. Mating Connectors      | Input: Male high density 78-pin D sub, Quantity 1<br>Output: Female high density 44-pin D sub, Quantity 2 |
| 28. Weight                 | 1 LB., (454 grams)  |

\*Any two channels set to same gain and loading