



## Fixed Frequency Filter with Selectable Gain VME Board

### 16-Channel

#### Description

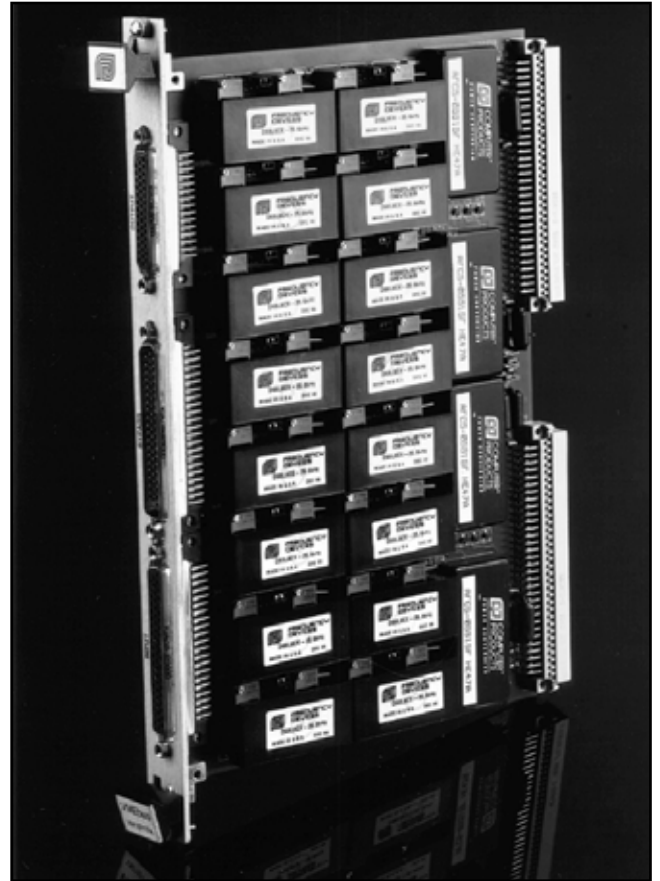
Frequency Devices' Model VM16FFFA comprises a family of VMEbus filter/amplifier boards offering sixteen channels of linear analog filtering with jumper-select gain of 1, 10, 100, 200 and 500 in a single width B-size (6U) VME form factor. Each instrument offers sixteen differential signal inputs through a shielded front panel connector that provides signal buffering, gain setting, and fixed frequency filtering for each channel. VM16FFFA boards may be configured with one of several filters with standard factory set cut-off frequencies from 0.02 Hz to 100 kHz, and with high- or low-pass transfer functions allowing user to externally cascade filters into band-pass configurations. The boards use the VMEbus for power only.

#### Features/Benefits:

- A convenient way to provide simultaneous access to 16 channels of precise filtering and gain in a VME system.
- Individual I/O offset adjustment for each channel allows for offset adjustment independent of gain.
- Broad range of transfer characteristics and corner frequencies are offered to meet a wide range of applications.
- Low harmonic distortion and wide signal-to-noise ratio to 16-bit resolution with interchannel crosstalk <-80 dB.

#### Signal conditioning applications include:

- Engine test and simulation
- Automotive test cells
- Aerospace, navigation & sonar
- Laboratory R & D
- Acoustic and vibration analysis
- Satellite & Telecommunications
- Automatic test equipment (ATE)
- Industrial process control



#### LOW-PASS FILTER OPTIONS

2-pole	D72, DP72
4-pole	D61, D64, DP64, D74, DP74
6-pole	D66, DP66, D76, DP76
8-pole	D68, DP68, D78, DP78

#### HIGH-PASS FILTER OPTIONS

2-pole	D72
4-pole	D61, D64, D74
6-pole	D66, D76
8-pole	D68, D78

#### BAND-PASS FILTER OPTIONS

2-pole pair	D64BP
4-pole pair	D68BP

#### BAND-REJECT(NOTCH) FILTER OPTIONS

4-pole pair	D68BR
-------------	-------



## Specifications

(@ 25°C and rated Power Input)

## VME Filter Board

### 16 CHANNELS OF FIXED FREQUENCY FILTERS AND SELECTABLE GAIN

#### Analog Input

- |                          |                                 |
|--------------------------|---------------------------------|
| 1. Impedance             | 1 M $\Omega$ //47pF             |
| 2. Input Range           | $\pm$ 10V pk. linear            |
| 3. Maximum Input         | $\pm$ 30V peak, either input    |
| 4. Common Mode Rejection | 70 dB typ., 60 dB min. @ 60 Hz. |

#### Analog Output

- |   |  |
|---|--|
| 5. Impedance                                | 1 $\Omega$ typ., 10 $\Omega$ max.        |
| 6. Linear Operating Range                   | $\pm$ 10V pk.                            |
| 7. Channel to Channel Crosstalk             | <-80 dB @ 20 kHz                         |
| 8. Maximum Current                          | $\pm$ 5mA                                |
| 9. Offset Voltage                           | $\pm$ 2mV max. trimmable to zero         |
| 10. Short Circuit Protection                | Short to Ground                          |
| 11. Peak Distortion @ 1 kHz,<br>Gain of x1  | -95 dBc max., D68 w/7.07 Vrms input      |
| 12. In-band Spectral Noise,<br>Gain of x500 | 80nV / $\sqrt$ Hz max., D68 idle channel |

#### Filter Characteristics

- |                               |   |
|-------------------------------|---|
| 13. See Series Specifications | D61, D64, D66, D68, D72, D74, D76, D78, D64BP, D68BP, D68BR |
|-------------------------------|---|

#### Gain

- |                             |                      |
|-----------------------------|----------------------|
| 14. Jumper Selectable Steps | 1, 10, 100, 200, 500 |
| 15. Accuracy                | $\pm$ 2%             |

#### Power Supply

- |                        |  |
|------------------------|--|
| 16. From VME Backplane | +5V $\pm$ 5%<br>4.0 A max., outputs unloaded                         |
| 17. Isolation          | Analog ground may be isolated from VME and chassis ground by jumper. |

#### Environmental

- |               |                      |
|---------------|----------------------|
| 18. Operating | 0°C to +70°C         |
| 19. Storage   | -25°C to +85°C       |
| 20. Humidity  | 0-95% non-condensing |

#### Mechanical

- |                            |  |
|----------------------------|--|
| 21. Card Size              | VMEbus 6U single slot 9.17 x 6.3 inches, (233 x 160 mm)                    |
| 22. No. of Input Channels  | 16 Differential - DC coupled   |
| 23. No. of Output Channels | 16 Single Ended - DC coupled   |
| 24. Mating Connectors      | 62-pin "D", Quantity 2, Input and Bypass<br>44-pin "D", Quantity 1, Output |
| 25. Weight                 | 1.5 lbs., (0.68 kg.)   |

#### Ordering Information

8 or 16 Channels

### VM16FFFA-8-Filter Type and fc

- e.g. D61L4B-0.10 Hz  
D68L8B-100 kHz  
D74H4B-96.0 kHz  
D78L8L-75 Hz

We hope the information given here will be helpful. The information is based on data and our best knowledge, and we consider the information to be true and accurate. Please read all statements, recommendations or suggestions herein in conjunction with our conditions of sale which apply to all goods supplied by us. We assume no responsibility for the use of these statements, recommendations or suggestions, nor do we intend them as a recommendation for any use which would infringe any patent or copyright. PR-VM16FFFA-02