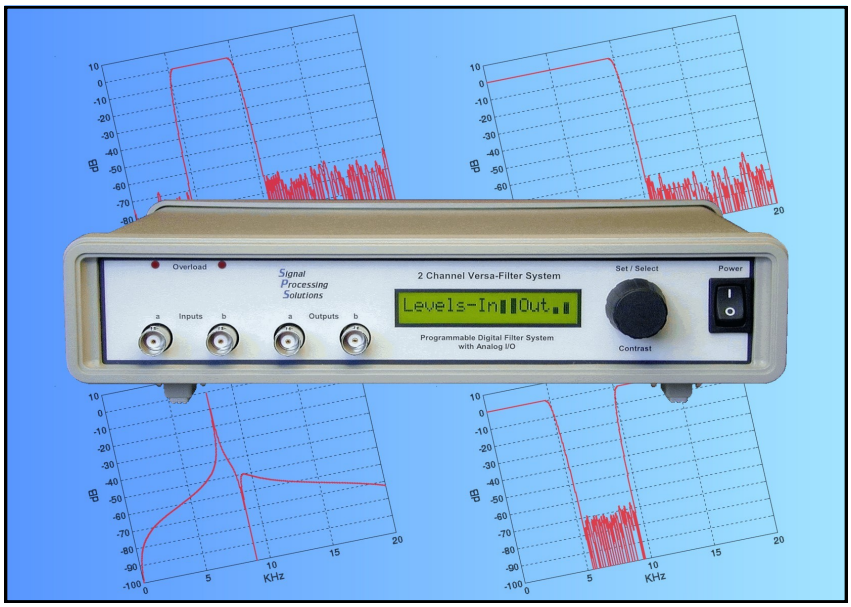
2-Channel Versa-Filter System

Programmable Digital Filter Instrument with Analog I/O

Overview: The Versa-Filter System is a versatile DSP-based electronic filter and signal conditioning system with 2-channels of analog I/O. The instrument features fully tunable low-pass, high-pass, band-pass, band-stop, notch and inverse-notch filters that operate from DC to 20KHz with a 1Hz tuning resolution. The Versa-Filters are user programmable with custom filter coefficients to meet special filtering needs.



2-Channel Versa-Filter Bench-Top System

Programmable gain amplifiers support overall gains from 0 to ±100.00x in steps of 0.01x. Full-scale input range is settable from 1Vpp to 20Vpp and the outputs are fully buffered with an output drive level to 22Vpp. The standard filters are linear phase, finite impulse response (FIR) digital filters from 3 to 128 taps in dual channel mode, or up to 256 taps in single channel mode giving a passband-to-stopband transition width as small as 0.4KHz for a 10KHz low-pass filter. Filter settings are easily stored and recalled from any of five memory locations.

A liquid crystal display shows the filter settings or bar-graph type VU-level meters display the signal dynamics both the inputs and the outputs. All parameters may be adjusted with the knob on the front panel or by sending simple ASCII commands through the built-in RS-232 serial port. A single PC can control an unlimited number of daisy-chained Versa-Filter systems by plugging additional filters into the included downstream RS-232 port.

Key Features:

- Linear Phase LP, HP, BP, and BS Filters
- Notch and Inverse-Notch
- User-Specified FIR Filter Coefficients
- DC to 20KHz Response
- 1 Hz Tuning Resolution
- Internal White Noise Generator
- Programmable Gain Amplifiers
- VU Level Meters on LCD show I/O Signal Dynamics
- RS-232 Serial Interfaces
- Store and Recall Filter Settings from Memory

Applications:

- Signal Conditioning
- Anti-Alias Filters
- Signal Reconstruction Filters
- Data Acquisition Systems
- Telecommunications
- Automated Test
- Speech and Audio Processing
- Test and Measurement
- Scientific Equipment
- Aerospace and Military

2-Channel Versa-Filter System Specifications*	
Inputs and Output	Two single-ended inputs and two single-ended outputs on BNC connectors
Input levels	1Vpp to 20Vpp full-scale (settable in 1Vpp increments)
Input Impedance	~80K Ohms
Output Level	0 to 22Vpp
Output impedance	100 Ohms
Signal coupling	AC or DC coupling (jumper selectable)
Filter Types*	**Linear Phase FIR:** Low-pass, High-pass, Band-pass, Band-stop (3 to 128 taps, or 3 to 256 taps in single channel mode) **2nd order IIR:** Notch, Inverse-Notch **Other:** User downloadable FIR filter coefficients (to 256 taps)
Filter Response*	Response: DC to 20KHz (fs=48KHz), DC to 3.3KHz (fs=8KHz) Stop-band Attenuation: -70 dB Pass-band Ripple: ±0.2 dB Transition Width (256 taps): 410Hz (fs=48KHz), 68Hz (fs=8KHz)
Gain	0x to ±100x in steps of 0.01x
Distortion (THD)	0.03% typical, 0.04% max.
Remote Control Ports	Two RS-232 serial ports for daisy-chaining multiple systems. DB-9F for computer connection, DB-9M for downstream
Display	1-line by 16-character liquid crystal display
Power Supply	Wall mount, 115VAC input (optional 95VAC-250VAC universal input supply), Outputs: +5V, +12V, -12V
Packaging	Bench-top aluminum chassis with rubber feet and front tip-up stand
Dimensions	10" wide x 2.75" high (2.25" excluding feet) x 8.1" deep
Weight	3 lbs. (filter system), 1.5 lbs. (wall power supply)
* See the "Versa-Filter System Users Guide and Specifications" for detailed specifications of the filter.	

Signal Processing Solutions, Inc.

Company Profile:

Signal Processing Solutions, Inc. has been operating for over a decade developing analog and digital signal processing solutions for such diverse industries as communications, biomedical, and active noise control. We supply electronic filter systems and signal conditioners.

Organizations such as NASA, General Electric, and TRW use our products and services. Our expert staff is committed to the highest product quality and superior design and development services.

We specialize in:

- Digital Filter Systems
- DSP Algorithm Development
- Active Noise and Vibration Control Systems
- Simulation and Modeling (MATLAB)
- Embedded Software (C, Assembly, DSP)
- Digital and DSP Hardware Design
- Analog Circuit Design
- Digital Power Amplifiers