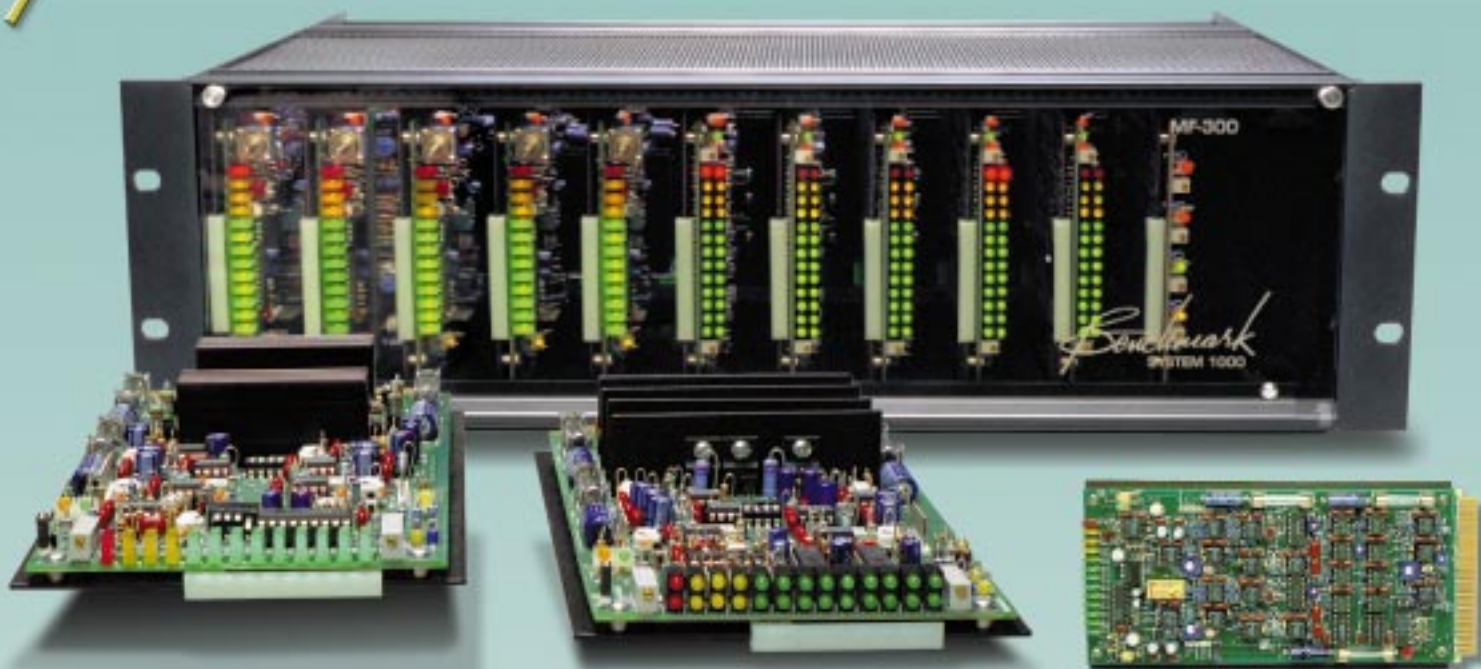


Benchmark

Analog and Digital Product Overview



System 1000 Modular Audio Solution

The System 1000™ is a modular audio distribution and control system. With over 15 modules, 8 daughterboards, 4 power supply options, as well as numerous controllers and installation accessories, the System 1000™ is the most flexible analog card frame system available.

Distribution Amplifiers

The System 1000's *Power DA*™ product line includes cost-effective Mono, Stereo, and two Mic-Preamplifier DAs. Each module has been optimized for the highest performance possible. All DA modules are *Power DAs*, that is, they have the power amplifier output stages necessary to drive today's low impedance interconnects. The DA-101 can even be used to drive monitor speakers with its 40 watt output capability. Typical THD+N is 0.0008% over the 20 kHz bandwidth. Mic-preamp DAs include a common mode filter for outstanding RF immunity. They have a 1 dB noise figure and a 250 kHz bandwidth for true state-of-art performance.

Daughterboards

The addition of daughterboards to System 1000™ DA and utility modules enhance their power by providing additional functions. These functions include: remote gain control, remote stereo mode control, tone generation, stereo to mono mix, reverse IFB (interruptible mic-pre), patch point insertion, and voice over with stereo program ducking. Many of these functions are remotely controllable, providing instant access to the modules' power by the program operator.



Remote Control

Most remotely controllable daughterboards have companion remote control stations. Alternately, they can be interfaced with automation systems to further enhance the system's ease-of-use.

Utility Modules

Utility modules include: an Audio Proc-Amp, a 4X4 Routing-Switcher, a Buffer Mix-Amplifier, an Eight-channel Remote Gain Control module, a Ten-channel Loss of Audio Alarm, and more.

Interconnect

Connection to the MF-300 frame is simplified using optional pre-connectorized pigtails and plug-in euro-style barrier strip modules. Use the MF-300MLX, with latching and polarized connectors, and the BP-100 punch-down panel for a plug-and-play installation of a DA system.

Power Supplies

The four power supply options range from the single frame PS-302 internal supply to the PS-103, capable of powering up to 12 frames. All supplies can be operated redundantly, and the external supplies have optional loss-of-power alarm and phantom microphone power. All supplies use 100 to 240 volt AC, 50-60 Hz.

There simply is nothing finer than the System 1000™ product line. With all the possibilities, it should be the hub for *your* audio network!

...the measure of excellence!™

Analog Audio Products

Microphone Preamplifiers and Meter Systems



Microphone Preamplifiers

Considered by many to be the world's finest, Benchmark mic-preamps have a gain range of -2 to +73 dB, and feature ultra-wide bandwidth to 500 kHz for outstanding performance at 30 kHz and beyond. Most Benchmark mic-preamps have a common mode filter that removes RF from the microphone input line, effectively dealing with hostile RF environments. Flawless square wave response - a powerful measure of RF stability - shows the careful circuit design employed. All this is accomplished without degrading the bandwidth, the distortion, or the 1 dB noise performance.



The MP-4 stand-alone card is the heart of the MPS-400 and MPS-420 preamplifier systems. Each comes with its own external power supply for total freedom from induced EMI. The same circuitry is found in the System 1000 Mic-Preamp Power DA™ modules and in the MP-1 MicroFrame™ series module. You owe it to yourself to listen to the MPS-420 - the startling clarity is almost beyond belief!



The MP-3 is the ideal choice when a high quality mic-preamp is needed and yet space is a problem. This jack mounted preamp features a 1 dB noise figure, a balanced input and a balanced output, a phantom power input, and gain from +26 to +73 dB.

The MicMan™ Jr. is a two channel portable mic preamp designed to achieve a very high level of performance with microphones or other low level signal sources. It uses the same circuit as the MP-3 and is a dual one-in, one-out mic-preamp with front panel variable gain from +26 to +73 dB. The MicMan™ Jr. runs on two 9 volt alkaline batteries, or a wall mount power supply, and has internal 12 volt microphone power.



Meter Systems

The SPM-320 and SPM-220 high quality meter systems use true VI (volume indicator) meter movements with an onset of peak overload LED. Both systems provide switch selectable VU or PPM monitoring of discrete (L & R) or matrix stereo (L+R, L-R). The systems are easily calibrated for house system references of 0, +4, and +8 dBu. Custom calibrations are available. The ability to monitor audio in both the discrete stereo and matrix stereo modes allows quick recognition of polarity problems. For the recording engineer, it provides

desirable flexibility when making Mid-Side recordings. Balanced audio outputs (optional) can feed a decoded matrix signal for aural monitoring. BNC scope outputs (standard) are used for Lissajous pattern monitoring on an oscilloscope, from which the operator can see stereo separation information.

The RPM-1 is a balanced input VI meter add-on card with switchable VU and PPM modes. The PPM-1 is a complete IEC style peak program meter kit.



Analog Audio Products

MicroFrame™ and Interface Devices



The MicroFrame™ Series

The MicroFrame™ is a 1 RU modular housing with positions for up to 16 amplifiers. Both a line amplifier and a mic-preamp are available along with ± 15 and +48 V power regulators. Its rugged construction and minimal "real estate" requirement, suits mobile facilities.

The LA-1 single channel line amplifier features variable gain from -20 to +20 dB. Its two outputs have 300 mA long line drive capability. The LA-1 is ideal for interfacing large intercom systems.

The state-of-the-art MP-1 mic-preamp has a 1 dB noise figure and 0.00088% THD (A=40 dB) at 20 kHz! It has a switchable 70 Hz low cut noise filter, +48 V power, a 20 dB pad, and gain from 0 to +73 dB (with pad).

Both amplifier modules have a bicolored LED level indicator - green for signal presence; flashing red/green for onset of overload.

The optional MX-1, 16 input mixer, mounts in the rear of the frame and will mix any or all of the 16 channels.



Interface Amplifiers

The IFA Series consists of 14 different interface and control amplifiers. Many of these products are simple in concept and implementation while their performance and function are second to none.

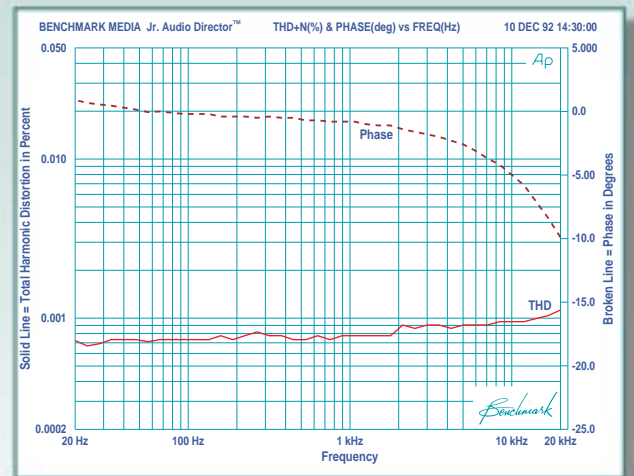
Control tape machines or satellite audio with the high performance Jr. Audio Director™ or The Jr. Audio Director Plus™. These rack mountable devices control stereo signals, i.e. channel polarity, input level, mono mixing etc, and with the Jr. Plus, even source selection!

The Audio World™ Interface is a multifunction stand alone IHF-Pro interface for audio and video tape recorders. With the push of a switch it becomes a balanced-in, balanced-out line amp. A second switch allows line-amp operation with reversed channels. With both switches engaged, the device becomes a mono mix amp, with two outputs, each having its own output level control.



Jack Mounted Devices

Jack mounted interface amplifiers are still available as well as the ever popular HPA-1 headphone amp and the CMF-1 common mode filter. Add a professional interface to your equipment with these high performers from Benchmark!



To Order, Call 315-437-6300, 800-262-4675 or FAX 315-437-8119



Digital Audio Products

Digital Products with an Analog Attitude



Benchmark Converters

All Benchmark converters use the award-winning technology developed for the AD2004. With careful attention to detail, including special analog preprocessing and a proprietary phase-lock-loop, ground-breaking performance has been achieved. Yet this was accomplished *without* the cost penalties normally associated with state-of-the-art performance.

Crystal-controlled 44.1 and 48 kHz sample rates come standard. A varispeed mode allows any sampling frequency between 28 and 50 kHz. The converters have 9-segment true digital meters. A coarse meter scale for signal presence observation, and a fine scale for precise monitoring near Full-Scale-Digital are normal. The fine scale can also hold the highest peak until manually reset. FSD detection is exact.



20-Bit Analog to Digital

The AD2004 and the AD2008 have outstanding THD+N of -107 dBFS (0.00044%) measured at 1 dB below FSD. CCIF intermodulation distortion is a phenomenal -128 dBFS (0.00004%) with 19 and 20 kHz tones input at -1 dBFS. Ultra low jitter <11 pS, and jitter attenuation greater than 50 dB at all frequencies above 50 Hz characterize the phase-lock performance.

Jitter-induced sidebands are below an almost unbelievable -137 dB even when locked to AES sync.

24-Bit, 96 kHz A-to-D

The new AD2408-96 has eight channels of no-compromise 24-bit A-to-D conversion at sample rates up to 96 kHz. It has spectacular THD+N performance of -110 dB at -1 dBFS, and a 120 dB dynamic

range. It has variable word lengths of 16, 18, 20, and 24-bits. When operating in the 16, 18, or 20-bit modes, selectable TPDF or noise-shaped redithering is provided. I/O options include AES, AES3id (BNC), and SPDIF.

20-Bit Digital to Analog

The DAC2008 D-to-A has a THD+N of -107 dBFS (0.0004%). Simultaneous playback of 48 kHz and 44.1 kHz sample-rates through the two converters is possible. Housed in a heavy-gauge RF-tight chassis, the DAC2008 has an international power supply and is equipped with gold-pin balanced XLR analog outputs. Several different motherboards provide a choice of digital interface connectors, i.e. XLR, BNC, Optical, etc.

20-Bit Analog to Digital/Digital to Analog

The ADA2008 combines 4 channel A-to-D and D-to-A modules in one chassis. It's ideal for four-channel video tape machines.

External Redundant Power

The PS-202D is an external supply in a 3 RU chassis. It can provide redundant or non-redundant power for up to ten eight-channel converters.

Use the Benchmark eight-channel system to interface your new router. For the same investment you get the router of your choice *and* state-of-the-art converter performance. Benchmark converters... not only the highest performance, but extremely cost effective as well!



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