



Smaart[®] Pro

**“JBL-Smaart Pro
is a required
product for any
serious sound
company entering
the 21st century.”**

*J. Walter Mosetter,
Philadelphia Sound Productions*



General Features

Native 32 Bit Operation Under Windows 95 or NT (4.0 or Higher).

JBL-Smaart Pro takes advantage of the speed and power of these 32 bit environments!

ASCII Output

Both time- and frequency-domain data from measurements can be exported in numeric ASCII format for use in other applications.

User-Configurable Color Schemes

Allows you to use graph colors that make the most sense to you and are easiest to read for both display and printing purposes.

Real-Time Features

Fixed Point Per Octave Resolution Transfer Function
Makes acoustic measurements more stable and easier to read with equal frequency resolution across the audio spectrum.

Automatic Delay Location

Allows you to find delay times more easily.

Phase Display

Enables you to explore time characteristics of a system for different frequencies in detail.

MIDI Control Interface

Provides control of external equalizers and other devices directly from the JBL-Smaart Pro Real-Time module.

More Reference Registers

Allow you to store results of up to 40 different measurements without swapping to files.

System Presets

Help to "automate" repetitive tasks by changing a number of measurement parameters with a single command.

Reference Trace Averaging

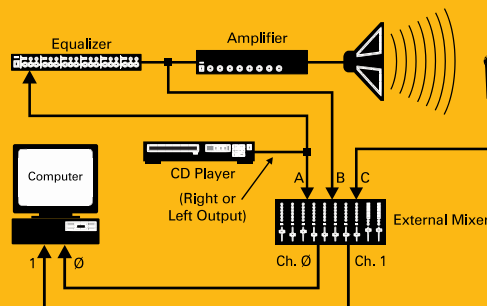
Multiple measurements can now be averaged together and displayed as a single trace.

NC and STC Ratings

Automatically calculates industry-standard ratings for noise levels and sound transmission.

System Configuration

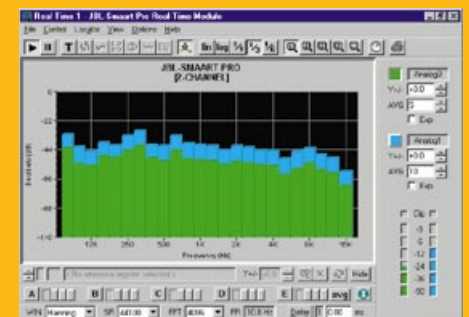
TYPICAL TRANSFER FUNCTION TEST SETUP



With a simple setup, JBL-Smaart Pro allows measurement of the system Transfer Function and impulse response. This procedure allows easy and accurate optimization of sound system parameters.

"JBL-Smaart Pro completes my measurement package. For optimizing large concert sound systems, it is my tool of choice!"

- Alexander Yuill-Thornton II, "Thorny", Solstice Company



JBL-Smaart Pro provides a dual-channel, real-time analyzer that can display data in a narrowband 1/1, 1/3 or 1/6 octave resolution.

"JBL-Smaart Pro; portable, powerful and progressive, I never leave home without it!"

- Don Pearson, Ultra Sound

Analysis Module Features

Compare Two Wave Files

Allows you to explore the similarities and differences between two recorded signals in great detail.

Recording Controls

Allow you to record data directly from the Analysis Module.

More Flexible Time and Frequency Scale and Range Controls

Makes it easier to see what interests you the most in any JBL-Smart Pro display.

User-configurable Rainbow Display

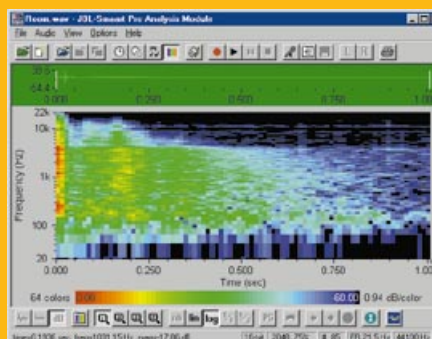
Allows you to simultaneously view decay for three user-selected octave bands.

Live Displays

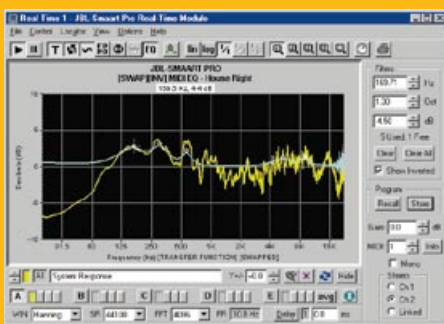
Provides live time and spectrograph displays for a system and signal analysis.

Wave File Saves

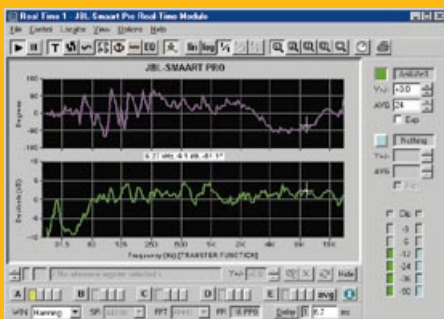
Provides the ability to store any section of a time domain file as a separate wave file, allowing separate analysis.



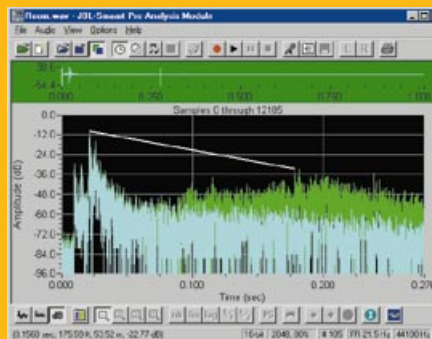
The spectrograph display is a frequency vs. time plot with amplitude displayed by color. The frequency range, dynamic range and number of colors used in the plot are user-selectable.



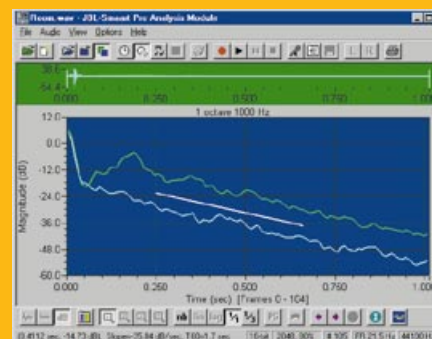
JBL-Smart Pro allows you to overlay traces to compare room and equalizer response measurements. Certain MIDI-controllable equalizers can be controlled directly from the Real-Time Module.



Real-Time Transfer Function and Phase plots clearly display both frequency response and timing characteristics of a system. The Fixed Point Per Octave option makes acoustic measurements easy to interpret.



The JBL-Smart Pro Analysis Module allows you to open two wave files simultaneously and compare both time- and frequency-domain characteristics of the recorded signals a number of different ways.



JBL-Smart Pro provides magnitude vs. time plots for specific frequency ranges. Decay rates (and many other quantitative acoustical values) can be calculated automatically or manually.



Smaart[®] Pro

The Real-Time Module

Like the original JBL-Smaart, the JBL-Smaart Pro Real-Time Module offers the features of a standard FFT-based real-time spectrum analyzer enhanced by real-time transfer function capability. The Transfer Function provides a frequency-domain comparison of two signals. This is an extremely powerful tool for assessing the performance of an entire sound system, a specific part of a system, or a single system component.

The JBL-Smaart Pro Real-Time Module extends this capability by providing a real-time phase display and Fixed Point Per Octave (FPP0) transfer function option. The FPP0 feature provides equal frequency resolution across the entire audio spectrum, making interpretation of acoustical measurements much easier!

The Real-Time Module's Delay Locator can automatically measure delay times for distributed systems, set up the program's internal delay for signal alignment in transfer function measurements, and measure the impulse response of a system for acoustical analysis!

The program's ability to store, display and compare multiple measurement results forms the basis for a powerful process of sound system optimization. Using the JBL-Smaart Real-Time Module, it is possible to compare an input signal with sound reproduced by loudspeakers at various measurement locations and see how the signals (electrical and acoustical) differ.

The Analysis Module

The JBL-Smaart Pro Analysis Module allows disk-based analysis of results measured in the Real-Time Module's Delay Locator or audio data stored in any standard Windows wave file. In addition to the standard FFT displays, the JBL-Smaart Pro Analysis Module features 3-D color spectrographs, time domain displays, a Time Slice™ display, and the ability to compare signals stored in two different wave files. The Time Slice display plots magnitude vs. time *for a given frequency range*, in octave, 1/3-octave, or narrowband resolution, allowing decays and reflection structures to be clearly identified.

JBL-Smaart Pro provides the necessary tools to make your job easier and more productive. It is at the same time accurate, easy and even fun to use! For more information and a demonstration, contact your JBL Professional representative. Be sure to visit the JBL Pro web site for application notes and announcements about JBL Smaart and JBL-Smaart Pro.

What's New in JBL-Smaart Pro?

If you're already familiar with JBL-Smaart version 1.x, you'll find a lot that's new! In addition to faster, 32-bit processing and support for Windows 95 long file names, this version offers user-selectable color schemes, greater flexibility in configuring the software for the way you work, and a host of new features. Here's the short list of what's new for the two JBL-Smaart Pro program modules.

New Features in the JBL-Smaart Pro Real-Time Module

- MIDI Control Interfaces (for MIDI-controlled equalizers and input switchers)
- Phase Display in Transfer Function mode
- Fixed Point Per Octave (FPP0) Option for Transfer Function
- 40 Reference Registers (20 each, for 2-Channel and Transfer Function mode)
- Averaging of Reference Traces
- ASCII Export for Frequency Data
- Frequency Range Zoom and Move Controls
- NC Curves and NC Ratings
- Trace Difference and STC Ratings
- System Presets
- Locked Cursor Feature with Auto Peak/Low Locations
- Support for Multiple Sound Cards and Virtual MIDI Devices
- More Smoothing and Averaging Options
- Automatic Peak Location in Delay Locator

New Features in the JBL-Smaart Pro Analysis Module

- Comparison of Two Wave Files
- Wave File Recorder
- Save Selected Time Range as New Wave File
- ASCII Export of Wave File Data
- Live Spectrograph and Time Display
- Support for Multiple Sound Cards
- Frequency Masking
- Improved Spectrograph Colors
- Full Scale Spectrograph Calibration Option
- More Flexible Vertical Range and Scale (Zoom) Controls
- Time-Zoom Feature Implemented in Time Slice Display
- Extended Rainbow Display Options



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Introduction

Over the past three decades, developments in engineering, electronics, manufacturing and materials technologies have steadily improved the quality of audio components used in both professional and consumer applications. This has led to unprecedented increases in audience awareness and expectations for sound quality. As a result, it has become more and more critical for sound systems to reach their highest potential.

For the audio professional, this means system setup is more critical than ever before. JBL-Smart® for Windows 3.1 was originally developed to provide sound system contractors, acoustical consultants and audio professionals with a practical, accurate, cost-effective and easy-to-use sound system optimization and acoustical analysis tool—without requiring expensive, dedicated hardware!

JBL-Smart Pro takes advantage of the 32-bit processing power in Windows 95 and NT 4.0 operating systems to provide even more speed, power and flexibility. JBL-Smart Pro also represents an extensive update to the JBL-Smart (1.x) feature set. The product of an intensive development effort and experience gained from more than a year and a half of widespread use in the field, JBL-Smart Pro moves acoustic measurement and sound system optimization tools to a new level—to help *you* achieve new levels of sound system performance and client satisfaction!



JBL Professional Announces Smart Remote Control of DSC Controllers

JBL was the first to introduce Smart software to the world in the spring of 1996. As a measurement and analysis tool, it was designed to take advantage of the rapid advances made in computer power. For the first time, simple and accurate acoustic measurements were made easily available. JBL Smart, and later JBL-Smart Pro quickly became established as the new industry standard for in-field measurements.

The Smart Pro story does not stop there. SIA-Smart Pro Version 3.0 was released earlier this year to wide acclaim and now, JBL Professional leads the way again with the release of Smart Pro V3.5, featuring remote control of JBL DSC system controllers within the Smart Environment. Available as a free update to licensed owners of SIA-Smart Pro Version 3, the update will be distributed via JBL Professional's Web site at www.jblpro.com.

Main Features Exclusive to V3.5

- Remote control of DSC system controllers is available via MIDI on the DSC280 or RS232 and MIDI in the case of the DSC260. RS232 connection requires a Null-Modem cable from the serial port of your PC; MIDI connections may require an outboard MIDI controller, but offer the advantage that multiple units may be controlled.
- Control of virtually all DSC functions is available from PC, including Delay times, Crossover, Polarity, Limiting, Gain, Mute and Equalization. You can also recall and store programs either on the DSC controller, or as backup files on the computer for portability and archiving purposes.

Main Applications

- As an aid to system setup, SIA-Smart Pro V3.5 is invaluable. No more running back and forth to the control rack while making adjustments to the system. It is now possible to adjust, measure and listen, all from several locations – greatly reducing setup time and improving accuracy.
- System Maintenance is made simpler. After commissioning, the EQ curve of the system, or even parts of the system can be stored on Smart Pro; this can be compared with subsequent test measurements to ensure optimum system performance. System checks can be carried out by a contractor bringing a laptop and measurement microphone to site – or alternatively, utilizing a computer already on site for system maintenance. Full capability is provided for documentation of settings.
- Tour Sound System Equalization – Adjust system remotely while listening in areas you need to assess, without limiting yourself to the location of the DSC rack.
- Installed System Commissioning – especially large or complicated systems. Setup time will be significantly reduced using DSC control software and SIA-Smart Pro V3.5.
- On site remote control of DSC controlled Sound Systems via existing PC. Lock out proprietary or sensitive controls for system security and leave "safe" parameters available for the venue managers remote control.
- System control settings backup to PC – Keep your favorite settings for your tour system – or create a library of backups for your installations and transport between units.



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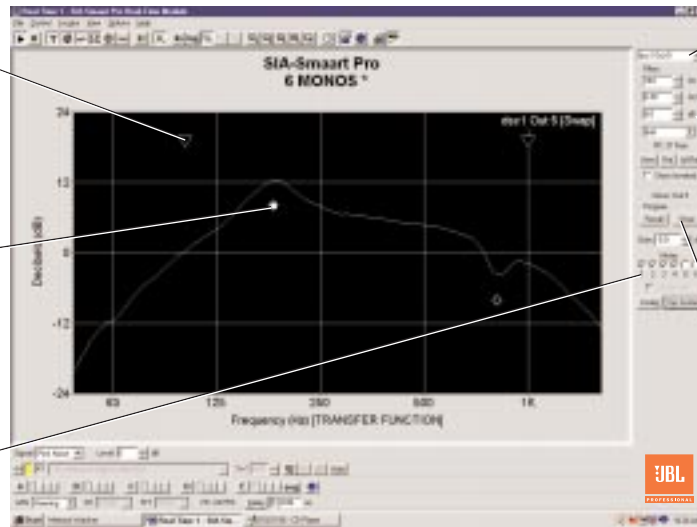
SIA-Smart Pro v3.5 Transfer Function Display

All the usual functions offered by Smart Pro v3.0 plus intergrated DSC system control.

Crossover
High and Low Pass filters are designated by arrows centered at the filter frequency.

Equalization
Parametric and shelf EQ points are displayed on screen and can be modified by dragging the mouse.

Mute Control
The "check boxes" provide immediate control of DSC Mute functions.



Control Selection
Select between multiple DSC controllers.

Precision Control
Pull-down boxes offer precision control over EQ and Crossover functions.

Store and Recall
DSC Programmed settings can be stored and recalled from the DSC unit or from backup files on the host computer.

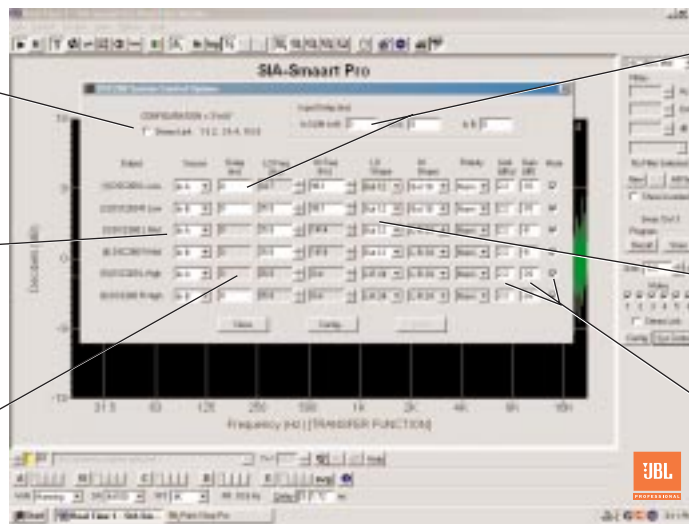
SIA-Smart Pro v3.5 System Control Screen for DSC260

Dedicated window containing primary DSC functions.

Stereo Link
Links output channels which are controlled by the same input channel if Left and Right require simultaneous adjustment.

Output Source
Select where the output receives its source. Input 'A', Input 'B' or a Sum of 'A+B'.

System Security
"Grayed out" boxes indicate locked parameters which can be viewed but not adjusted without a password entered on the DSC controller.



Delay Settings
Delay settings for Input and Output channels can be adjusted and then checked with Smart Pro's Delay Locator.

Crossover
Pull down boxes offer control over crossover points, slope and filter type.

Gain, Limiter, Mute
Individual channel controls are easily accessible from this window.