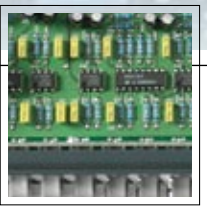
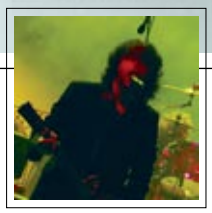
BSS AUDIO™





Professional Audio Signal Processing
And Distribution Equipment

.08

BSS AUDIO

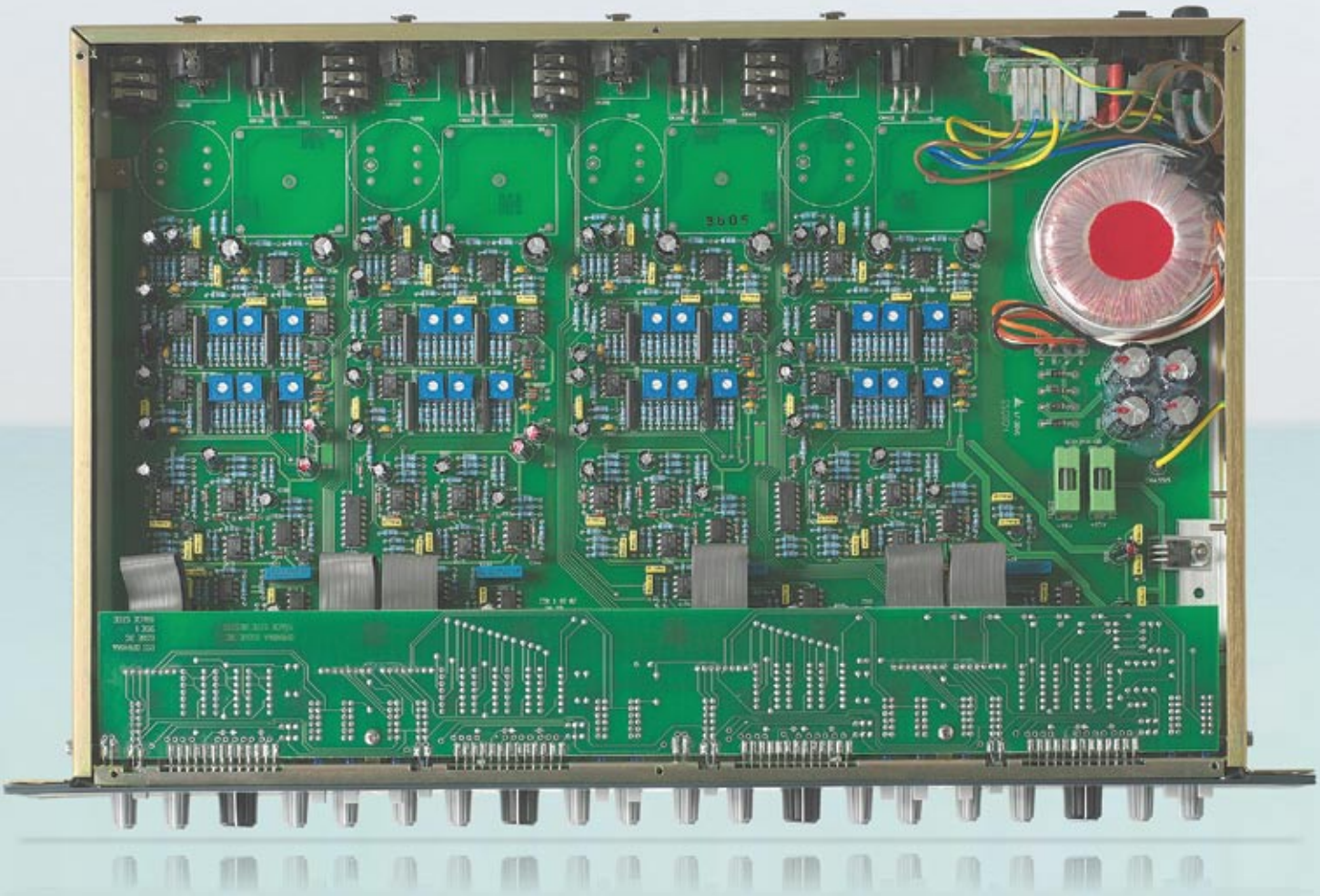
BSS Audio is world renowned for outstanding sound quality and reliable equipment that satisfies the real demands of professional musicians and high-profile installations. Products from BSS Audio are used on major tours, in recording and broadcast studios, churches, casinos, arenas, and nightclubs on every continent.

BSS AUDIO™

Audio Signal Processing

Why do so many sound industry veterans swear by BSS Audio? Because with every performance, installation, broadcast, and recording, these professionals put their reputations on the line. The pros demand superior sound quality and a proven track record. They can count on it with BSS Audio.

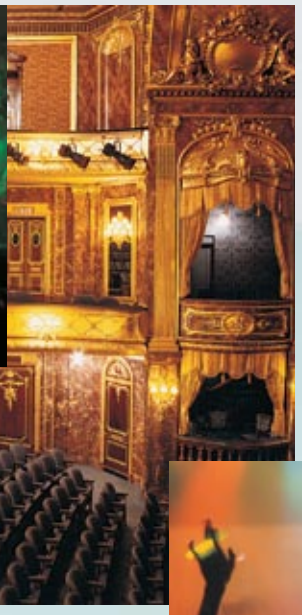
Contents:



Reliability:

The uncompromising reliability achieved through superb design and meticulous quality assurance is why more artists regularly choose BSS Audio systems. From the rock-solid AR-133 Direct Injection Box, to the state of the art Soundweb London networked signal processors, BSS Audio offers the very best in signal processing.

Including BSS Audio components as an integral part of any sound installation will ensure years of dependable performance and reliability.



Twenty years of live sound experience let you focus on the job at hand.

Live Sound:

For over 25 years, BSS Audio equipment has been manhandled on and off of trucks and planes, city after city, tour after tour. And every time the show started, the performers and the techs knew their BSS Audio gear would work. No wonder top performing artists like Metallica, Diana Krall, David Bowie, and Oasis regularly choose BSS Audio systems.

Soundweb™ London

Networked Signal Processors

The power, flexibility and reliability for any scale of installed sound system.

HiQnet™

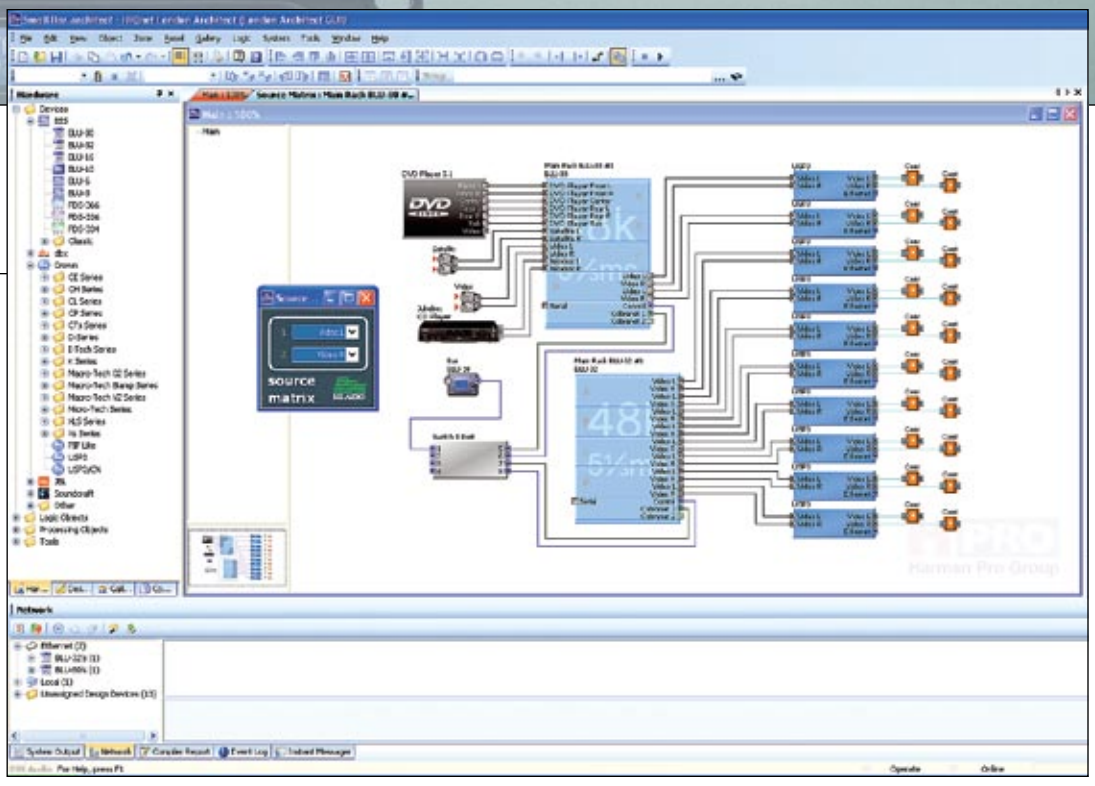
Long before networked digital audio, BSS Audio™ gained its reputation for elegant-sounding signal processing and crossovers. Innovative technologies like Progressive Knee Subtractive Compression, mid-filter crossover limiting, dynamic equalization and ADE™ restoration of leading-edge information in noise gates have elevated BSS Audio to almost cult status among live sound and recording engineers.

We've leveraged this analog audio expertise into what many believe are the best-sounding digital signal processing algorithms available. Beginning with Soundweb™ Original...and now with the Soundweb™ London family of networked digital signal processing systems, we've brought the same warmth and clarity to a vast palette of DSP modules. All are deployed within an intuitive, easy-to-use design and maintenance interface called HiQnet™ London Architect™.

So you're not just getting, for example a generic compressor module; you're getting digital processing closely based on the acclaimed sound of our DPR-402. From automixers to graphic and parametric EQs, from duckers to delays, you can hear the BSS Audio difference.

Bottom line: we're a highly-regarded crossover and analog signal processing company who started making digital signal processing devices, not a DSP company who ventured into the complex world of high-end professional audio.

Soundweb™ London



Soundweb™ London

Built on the foundations of an industry standard

Our Soundweb™ Original series sent ripples through the sound contracting world. The first large-scale system to offer a distributed, programmable DSP system with robust capabilities and simple controls on a single Cat 5 cable, it has inspired a host of imitators. Yet there are key areas where the original Soundweb philosophy still stands above the rest:

- **Easy creation of virtually any audio system design with a free-design programmable DSP system that places no restrictions on signal path, sub-mixing or object location**
- **The ability to change how your audio system behaves according to the type of event you are holding, just with the recall of a preset**
- **Easy and quick addition of more signal processing within the system without increasing your hardware budget**
- **Fast implementation of specification changes during or post-design**
- **The appropriate level of end-user control without providing overly-complex interfaces**

The same philosophy is at the heart of Soundweb™ London. Moreover, the experience with, and suggestions from thousands of clients have enabled BSS Audio to enhance Soundweb London's power and flexibility to unprecedented levels including:

- **Pristine audio quality, with advanced A/D and D/A conversion, together with 96kHz-capable audio processing and networking**
- **Simple, easy-to-learn drag-and-drop system design, now even more powerful with named CobraNet™ bundle assignment, signal path navigation and scalable DSP objects**
- **Ethernet based control over Cat 5 cable, with network audio via CobraNet™ with redundant capability**
- **An extensive range of control options to offer clients simple or sophisticated control interfaces**
- **Easy expansion or reconfiguration of system hardware in the field**

With years of experience to count on, Soundweb London represents your wisest choice when investing in programmable DSP technology.

The system approach fully realized

No one else can offer our level of integration. Because only Soundweb London is the backbone of a completely unified system solution with microphones, consoles, amplifiers and loudspeakers from sister Harman Pro companies AKG Acoustics® , Soundcraft®, Crown Audio® and JBL Professional® , as well as dbx Professional Products® and BSS Audio™ signal processing devices.

Harman Pro is in the unique position to be able to provide components for the entire signal path and through the use of HiQnet™, the Harman Pro Communications Protocol, integration of these components has never been easier. System integrators will be familiar with having to waste expensive engineering time translating different protocols, so that products using disparate languages will communicate.

Imagine how much easier it is when all of your system elements "speak" the same language.

Via HiQnet™ London Architect™ software, you can also add integrated monitoring of Crown Audio PIP-LITE, USP3 and USP3/CN Programmable Input Processor ('PIP') modules, as used in the CTs series of amplifiers. You can also configure BSS Audio FDS-334T and FDS-336T Minidrive processors and the industry standard FDS-366T OMNIDRIVE COMPACT plus system.

One control application can monitor amplifier performance, speaker conditions, log events and report errors back to the operator.

Easy to design

System design should be drag-and-drop easy. Our Soundweb™ Original software application, Soundweb™ Designer took system design and control to an unprecedented level. Now HiQnet™ London Architect™ brings even more power to your design creativity. You enjoy total flexibility of signal path flow and connectivity, a massive range of processing objects modeled on classic BSS Audio processors, and the freedom to design the system exactly how you want it.

HiQnet™ London Architect™ uses the familiar drag-and-drop design interface that Soundweb users will know well, but has been dramatically enhanced to provide a more powerful, flexible and user-oriented interface:

- **dockable tool menus**
- **creation of zones**
- **layout scrolling, zooming and mini-map windows**
- **new innovative processing objects such as scalable mixers that make design and object selection easier than ever**
- **new control panels with vast galleries of controls**
- **highly informative docking windows**
- **the ability to copy control values across objects**

— these are just a few of the ways in which we've made HiQnet London Architect the most powerful design software in its class.

Create custom control panels

One of the advantages inherited from Soundweb™ Designer has been made even easier. Simple mouse clicks create control panels and pages and add "unbound" elements such as meters and faders that can then be tied to distinct processing objects. Not forgotten is the "traditional" method of creating panels by dragging controls directly onto these custom panels. Pages can also be nested within panels, increasing their versatility, offering neater layout of controls and taking the concept to an unprecedented level.

Proven DSP processing objects

All the familiar Soundweb™ Original processing objects are included; many modeled on the classic and respected BSS Audio analog processors. The platform has also been designed to enable future software releases to include new leading edge DSP functions.

Easy to install

Each Soundweb London processor is totally self-contained, so devices can be installed locally to their amplifier racks rather than in one centralized location. Category 5 cable is used to interconnect system devices and Ethernet hardware, with network hops of 300 feet (100 meters) possible.

Digital audio bus

The digital audio bus featured on the BLU-800, BLU-320, BLU-160 and BLU-120, is a fault-tolerant bus of 256 channels. In addition to providing a backbone for the transportation of multiple channels, the bus also facilitates the creation of large, fault-tolerant, centralized matrices containing multiple bus-capable devices.

Soundweb™ London Family of Products

With a choice of seven different processors within the Soundweb London family and input / output card flexibility within each device, Soundweb London represents a truly flexible and scalable system. Whether you require the high bandwidth audio networking of a digital audio bus, CobraNet compatibility, DSP capability, input / output expansion or a specific mix of functionality, Soundweb London offers the building blocks of a tailor made system.

	Signal Processing	CobraNet	Digital Audio Bus
BLU-800	4x	✓	✓
BLU-80	1x	✓	
BLU-320		✓	✓
BLU-32		✓	
BLU-160	4x		✓
BLU-16	1x		
BLU-120			✓

BLU-8

BLU-10

BLU-3

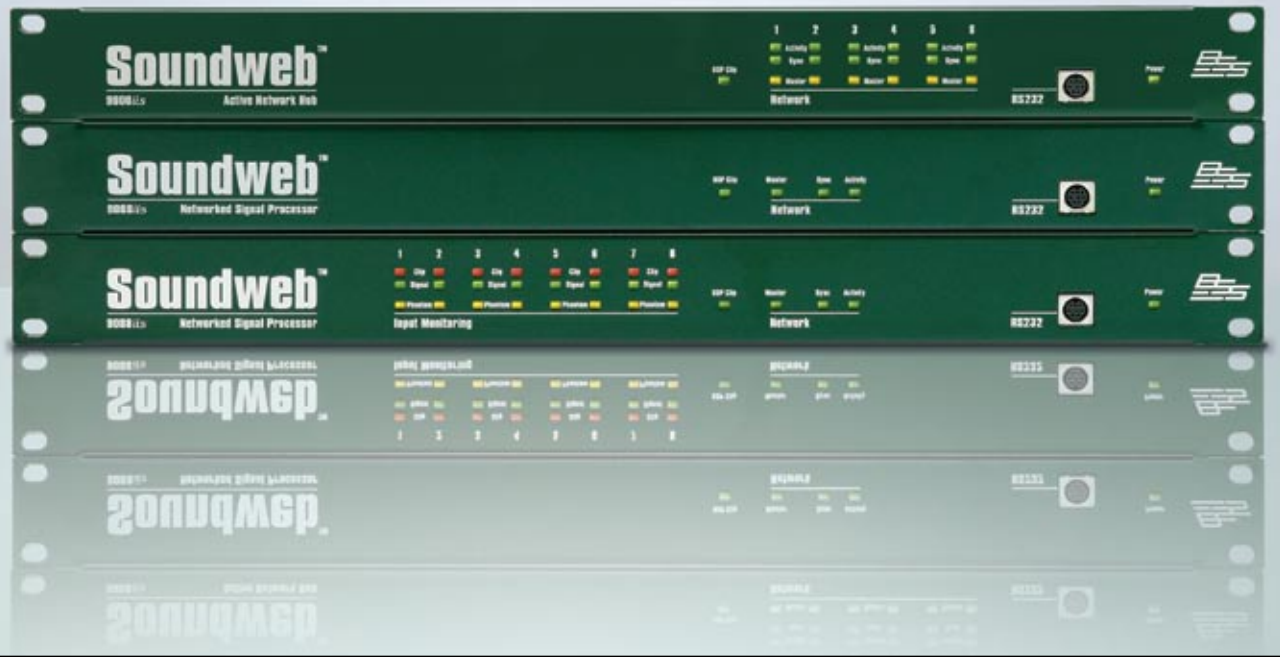
BLU-6

SW9015

SW9012

Soundweb™ Original

Networked Signal Processors



Industry standard series of freely configurable networked signal processors.

The Soundweb™ Original system fast became an industry standard for networked, programmable DSP systems. It continues to provide straight-forward design, installation and control of sophisticated sound systems. Forming the basis of countless audio installations in night clubs, live music venues, theme parks, sports stadiums, leisure venues and corporate board rooms, Soundweb Original uses simple Cat 5 cabling to pass 8 channels of digital audio and control signals bi-directionally up to 1000 feet / 300 meters between devices.

Soundweb™ Designer software.

System design and configuration is easy thanks to Soundweb™ Designer. A vast palette of processing objects are provided including Crossovers, Delays, Compressors, Expander, Ducker, Gate, Limiter, Graphic EQ, Parametric EQ, High Pass and Low Pass filters, Gain, Matrix Router, Matrix Mixers, Metering, Mixers, Source Selectors, Tone generator, Automixer, Leveller, Source Matrices, Ambient Noise Compensator and Stereo Parametric EQs.

Total Security.

Once configured, the computer can be removed, leaving a fully secure system with pre-described levels of operator control provided by a range of easy-to-operate hardware panels. Or Soundweb Original may be integrated with other popular control systems. Configurations can be switched instantly without cable repatching or manual adjustments, giving total flexibility between different events. Alternatively, the computer can remain online to provide more sophisticated, passsword-protected real-time control. Optimum audio quality is assured by 24-bit internal processing, headroom management, advanced A/D and D/A conversion and algorithms developed with the benefit of over 25 years of analog and digital design experience.

Expandable and upgradable.

Soundweb Original systems are easily expandable with further devices added at a later date. Start-up costs for small systems are therefore low, while large-scale installations are cost-effective and extremely powerful. Soundweb Original now incorporates video and audio non-processed switching capabilities via the SW9016 and SW9026 Matrices. SW9012 and SW9015 single-box in-wall panels are also available.

SW9010

Soundweb™ Original

- Freely configurable DSP
- Distributed processing, networking and DSP
- Proprietary networking requires no external hardware or set-ups
- Network carries control data and 8 channels of 24-bit/48kHz digital audio
- Easy system design and configuration using Soundweb™ Designer software
- High network tolerance and stability
- Variety of limited-access control options
- Systems can be easily expanded or updated
- Optional Audio/Video matrix and in-wall control panels available

SW9012 *(UK Version)*

SW9012 *(US Version)*

SW9015 *(UK Version)*

SW9015 *(US Version)*

Soundweb™ Lite

Standalone Signal Processor

The demand for simple standalone DSP processing led BSS Audio to introduce the **Soundweb Lite 3088** Signal Processor. This standalone non-networked 8x8 unit draws on the phenomenal success of the larger networked **Soundweb SW9088iis** and associated products, but provides a cost-effective solution for situations where the design requires a maximum of 8 inputs and 8 outputs.

FDS-366T OMNIDRIVE™ COMPACT plus
FDS-336T Minidrive™ / FDS-334T Minidrive™

Loudspeaker Management Systems

The OMNIDRIVE and Minidrive systems represent the ultimate in loudspeaker management, monitoring, and zone control.

Minidrive™ provides the same core functions as the OMNIDRIVE range: crossover *(Linkwitz-Riley, Bessel or Butterworth, WHISEWORKS - Neville Thiele Method Filters)*, mid-band limiters, equalization (assignable to inputs and outputs), and input and output delay. But the price is made lower than the OMNIDRIVE's by omitting a few of the OMNIDRIVE's more advanced features.

The **FDS-366T OMNIDRIVE** features **WHISEWORKS – Neville Thiele Method**™* filter technology, letting you take your loudspeakers closer to their operating bandwidths without fear of over-excursion. One **FDS-366T OMNIDRIVE COMPACT plus** can drive a true stereo 3-way system, or 3 bi-amp outputs for monitors. Add more units and MIDI slave linking to make stereo 4, 5 and even 6-way systems.

The **OMNIDRIVE COMPACT Plus** and Minidrive all have completely flexible routing allowing any input to be sent to any output making the FDS series of products suitable for a diverse range of applications.

You can configure, control, and monitor the **FDS-366T**, **FDS-336T** and **FDS-334T** via **HiQnet™ London Architect™**.

Whiseworks – Neville Thiele Method Filters

Included with Soundweb™ London, Soundweb™ Original, OMNIDRIVE COMPACT plus and Minidrive

"The cleanest and clearest filters I've heard to date."

Andy Dockerty,
Adlib Audio, UK

"The new filters allow me to put more power to the devices without fear of overload or over-excursion. Once adjusted, sounds better than standard filters. The system seemed louder and clearer. We were setting off alarms in the car park!"

Ferrit, Promix/Electrotec,
Las Vegas, Nevada, USA

WHISEWORKS - NTM™ and WHISEWORKS - Neville Thiele Method™ are trademarks of Precision Audio Pty. Ltd.

"The biggest step forward in digital crossover technology since Linkwitz-Riley."

Jerry Wing, Britannia Row Productions, UK

What are NTM™* Filters all about?

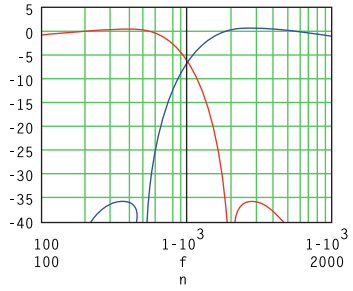
A **NTM™ Crossover Filter** is a new type of electrical/acoustical filter offering significant performance advantages over all previous crossover filter types in audio applications. The filter was developed by Neville Thiele *(pronounced "Teel")*.

How do they work?

The **NTM** crossover uses a unique notched response to achieve a very steep roll-off rate outside the pass-band. The 4th order **NTM** crossover amplitude response looks like this:

NTM Roll-off

Notches in the responses speed-up the rate of roll-off. Beyond the notch, the response rises again, but remains respectably attenuated.



Advantages

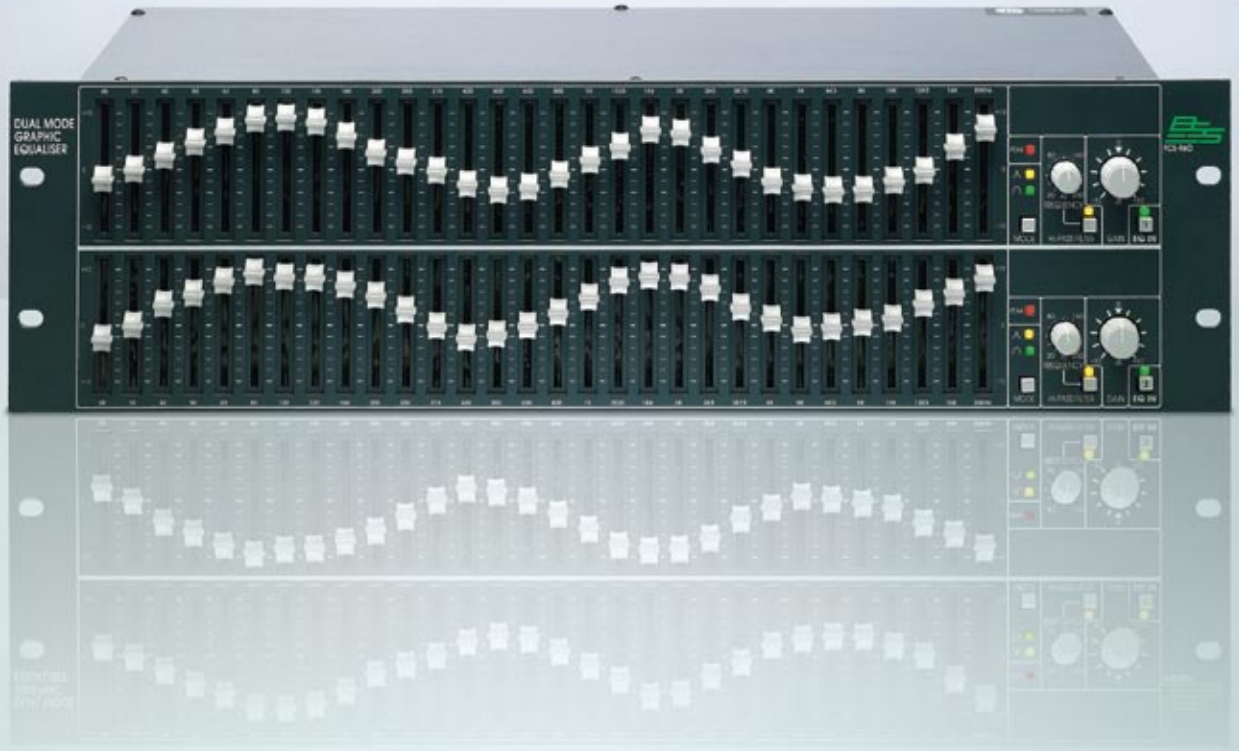
Like the Linkwitz-Riley crossover shape, **NTM** crossovers maintain a flat amplitude response against frequency, and hold the drivers in-phase throughout the crossover region, preventing beam tilting. Additionally however, the 8th order **NTM** filter gives the fastest roll-off rate of any of the common crossover shapes. The 4th order **NTM** filter also offers the best group delay flatness of any crossover shape with a roll-off of at least 24dB/Octave, whilst offering a higher cut-off rate than any other 4th order crossover.

For many years, Linkwitz-Riley crossovers have been the 'industry standard' as they offered the best compromise for most of the important parameters.

The new **NTM** crossover shapes now represent the optimal combination of characteristics for most applications, assuring it at least a place alongside Linkwitz Riley, if not becoming the new industry standard.

FCS-960 & FCS-966

Graphic Equalizers



Of all the features that distinguish the FCS series among professional-grade equalizers, Constant Q filters are probably the most prominent. Compared to the earlier *"gyrator"* style of filters, Constant Q filters provide a smoother and more predictable interaction between adjacent faders, and the resulting EQ curve more closely resembles the actual fader positions. And each fader on the FCS equalizers has +/– 15dB of adjustable gain, more than many competitive graphic equalizers. When you consider the FCS series' proven history of quality and reliability as well as their impressive feature set, you understand why so many industry veterans include these equalizers in their racks.

FCS-960 Dual Mode Graphic Equalizer

The **FCS-960** is the graphic EQ of choice among some of the biggest names in the touring business. Dual mode operation accommodates both Wide Q for Room Contouring *(to find the smoothest response)* and Narrow Q for monitoring *(to "notch out" particular frequencies)* on each channel.

The **FCS-960** provides two channels in 3U of rack space. Constant Q-filters with filter-bypass center taps are controlled by high grade, 45mm faders with molded polymer fader knobs. These prominent knobs eradicate visual parallax error even under low light conditions.

Also included are sweepable/switchable Hi-pass filter, Gain control and electronically balanced inputs and outputs.

FCS-966

Constant Q Graphic Equalizer

The **FCS-966** is commonly used for stage monitors and is engineered using knowledge and experience gained from the **FCS-960**. Modern components and manufacturing techniques allow premium quality and reliability to be retained at a lower price point.

Traditionally, much general equalization takes place on the faders alone, but this restricts the use of the faders at each end of the scale for further precision EQ work. So **BSS Audio** provides the **FCS-966** with separate LF and HF contour filters, which can change an overall sound balance without disturbing a detailed room or loudspeaker response. These filters are very musical gentle boost and cut shelving type, which can be used to add *(or remove)* room effects that change with temperature, audience numbers or humidity.

DPR Series

Signal Processors

The DPR SERIES provides signal processors with field proven quality and reliability.

DPR-504

Four Channel Noise Gate

Widely respected in the high-end tour sound community, the **DPR-504** quad noise gate has a reputation as a workhorse. Dependable and durable, you can count on this unit to perform brilliantly when it matters most.

The Range switch selects between 70dB and 20dB gating depth to provide alternative release profiles. The DPR-504 features electronically balanced inputs and outputs.

Each **DPR-504** channel features:

- **A parametric key filter with key filter listening.**
- **Simultaneous key level and threshold metering with average and peak metering.**
- **A gate status LED.**
- **A RELEASE/HOLD control (hold tracks proportionally with release times).**
- **Attack switchable auto/fast (auto tracks signal dynamics for optimum setting).**
- **Link (links two channels together).**
- **Key source allows external triggers.**

The **DPR-402** and **DPR-404** enjoy elite status among compressors. Thanks to their proven track records of reliability in world-class performance venues, these units have become an industry standard, and the first choice among many tour professionals.

DPR-402

Compressor Peak Limiter De-esser

The **DPR-402** is a 2-channel compressor/limiter, high frequency de-esser and wide band de-esser. Each channel includes:

- **Threshold control**
- **Peak limiting**
- **Adjustable speed**
- **Dynamics progam manipulation**
- **A gain reduction meter**
- **A clip LED**
- **Gain control**
- **High frequency de-esser**

Auto mode provides program dependent attack and release control.

DPR-404

Four Channel Compressor De-esser

The **DPR-404** is a 4-channel compressor with high frequency de-essing. Each channel includes:

- **Threshold control**
- **Below threshold metering**
- **Ratio control**
- **A gain reduction meter**
- **A clip LED**
- **Gain control**
- **Linking**
- **High frequency de-esser**

Attack and release time constants are automatically and continually regulated by dynamic and harmonic content of program material.

DPR-901 II

Dynamic Equaliser

The **DPR-901 II** is a four-band parametric Dynamic Equalizer which allows frequency-selective compression (-30dB) and expansion (+16dB). Each band has a frequency sweep, a bell width, an IN/OUT switch, compress/expand control, compress/expand metering, threshold metering and time constants which are automatically controlled by the dynamic and harmonic content of signal with selectable FAST RELEASE.

A filter switch on bands 1 & 4 which changes bell filter response to a shelving response and on bands 2 & 3 cancels the filter for wide band operation. The unit may be set up as a 1 input/4 band or 2 input/2 bands per channel device, and the filter side chain may be monitored to allow precise tuning of the audio spectrum to be effected. The inputs and outputs are electronically balanced.

Active DI, Line Balancing & Signal Distribution

AR-133

Active DI Box/Line Balancer

The **AR-133** is a single channel DI box with high input impedance, ¼" jack input and parallel link ouputs to feed backline amps. Though it's a favorite among high-profile touring professionals, the **AR-133** is priced to be affordable for all musicians, studios and PA companies.

The rugged aluminum extrusion case's unique arch design lets you run cables back underneath the unit for neat cable management.

The **AR-133** uses an enhanced version of the same audio path as the **AR-116**, regarded by many as an industry standard. The sound quality is legendary, particularly on acoustic and bass guitars.

The **AR-133** includes phantom power and battery supplies. Should the phantom power from the console fail or accidentally switch off, the **AR-133** automatically switches over to the internal 9V battery, providing uninterrupted use. Numerous applications can be satisfied by the **AR-133**. For example, as well as the traditional guitar use, the **AR-133** can be used with keyboards, DJ mixers, link outputs, and other electronic sources. The **AR-133** can also be used as an active balancing device.

MSR-604 II

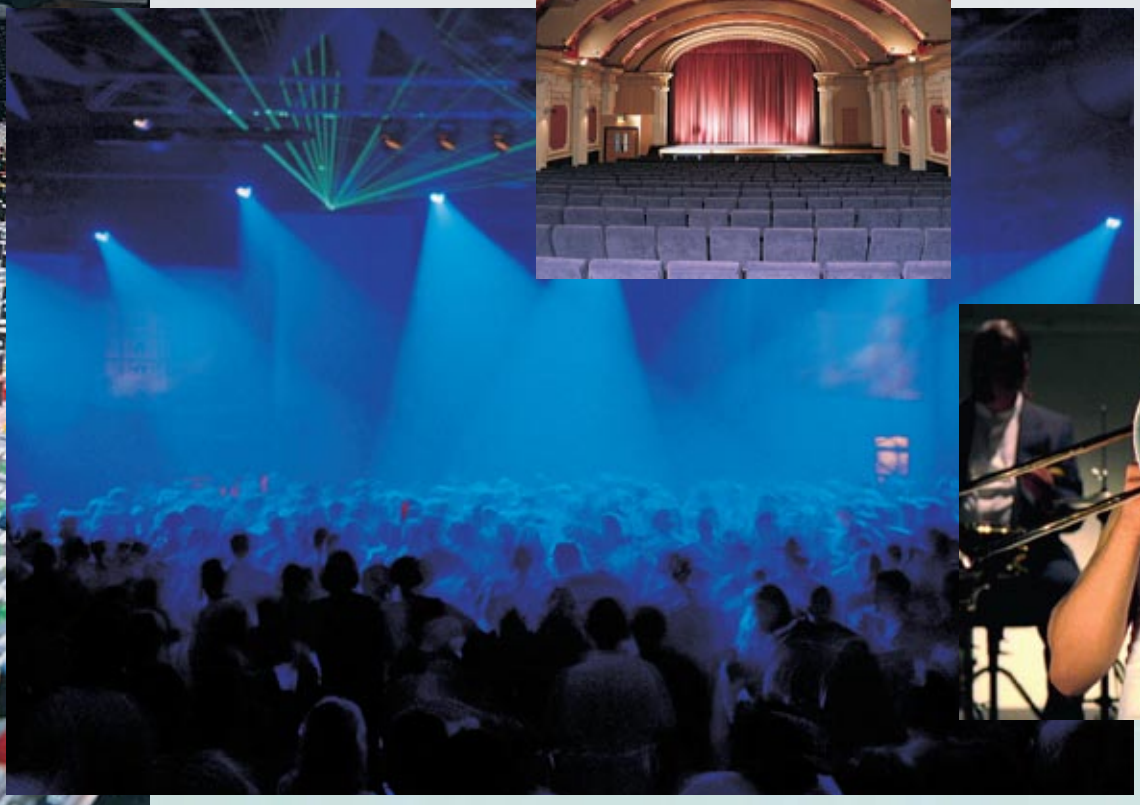
Active Signal Distribution System

The **MSR-604 II** is a 4-channel 1 x 4 way, active microphone/line level distribution system, capable of supplying 4, 8, 12, or 16 outputs from a single input. Each channel features an electronically balanced input with transformer option, MIC/LINE switching, GAIN switching, LISTEN facility for monitoring, phantom power, active outputs for main FOH and monitor consoles, and two transformer-coupled feeds giving 2500V isolation for any application requiring isolation from the main PA system.

PS-8810

Digital Processor/Mixer

Ideal for applications requiring a relatively simple, architecture processing path, the **PS-8810** combines easy to program DSP functions in an easily matrixable format. User progammable DSP configurable blocks *(including Filters, Delay, Gate, Auto-level, Compressor and Automix)* can be stored along with routing data in 32 presets, selectable either from the front panel, IQwic™ software, switch closure, or scheduled from an internal real-time clock/calendar.



Product Specifcations:

The BSS Audio website, located at ***bssaudio.com*** is updated regularly and provides a great source for all the latest news and product specifications. You will find useful information in the form of brochures, user manuals, technical data sheets, applications guides and software updates. The website also contains contact information for all sales, technical support and service enquiries.

Product information:

Product Specifications:

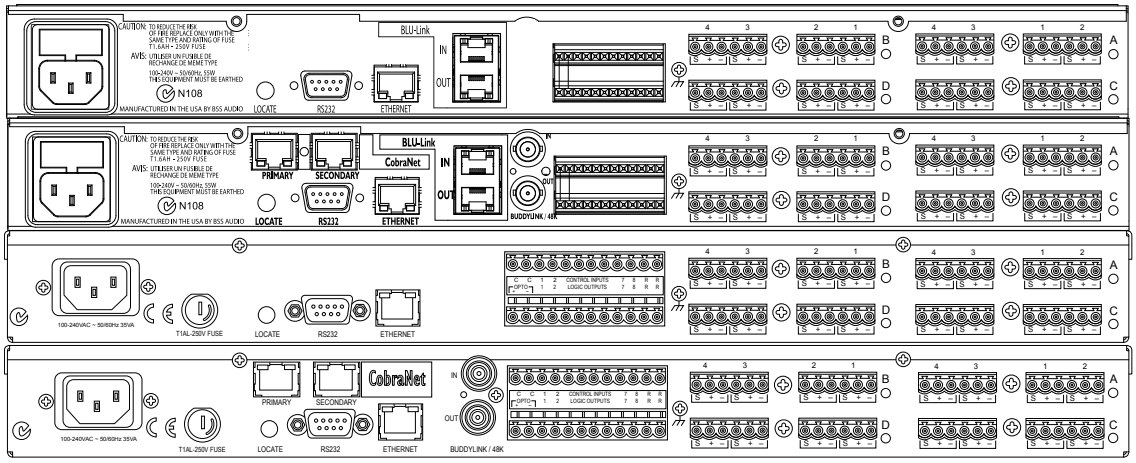
SOUNDWEB LONDON – Networked Signal Processors | BLU-16, BLU-32, BLU-80, BLU-120, BLU-160, BLU-320 and BLU-800

BLU-160/BLU-120
(rear diagrams)

BLU-800, BLU-320
(rear diagram)

BLU-16
(rear diagram)

BLU-32/BLU-80
(rear diagrams)



Front Panel Led Indicators:	
Per Input:	Signal Present, CLIP, SYNC/48V, I/O card type (IN, OUT, DIG)
Other:	LCD Display, Conductor active, Net Link active, Data Activity.
Analogue Inputs:	Up to 16 electronically balanced on Phoenix Combicon removable screw connectors
Mic/Line Inputs	Nominal gain 0dB, electronically switchable up to +48dB,in +6dB steps
Input Impedance	3.5kΩ
Maximum input level	+20dBu with 0dB input gain,+8dBu with 12dB gain
CMRR	>75dB at 1KHz
Input Noise (E.I.N.)	<-128dBu typical with 150Ω source
Phantom power	48V nominal, selectable per input
A/D Latency:	38.7/Fs
Digital Inputs:	Up to 16 AES/EBU or S/PDIF on Phoenix/Combicon removable screw connectors
Input impedance:	110 ohm (AES/EBU), 75 ohm (S/PDIF)
Sample Rate:	48kHz or 96kHz
Sample Rate conversion:	8kHz-96kHz
THD+N:	-140dB
Latency:	3/Fso + (56.581/Fsi) + (55.658/Fso).
Analogue Outputs:	Up to 16 electronically balanced on Phoenix/Combicon removable screw connectors
Maximum Output Level	+19dBu
Frequency Response	15Hz-20KHz (+0.5dB/-1dB)
THD	<0.01% 20Hz to 20KHz, +10dBu output
Dynamic Range	108dB typical, 22Hz-22KHz unweighted
Crosstalk	<-75dB
D/A Latency	28/Fs
Digital Outputs:	Up to 16 AES/EBU or S/PDIF on Phoenix/Combicon removable screw connectors.
Input impedance:	110 ohm (AES/EBU), 75 ohm (S/PDIF)

Sample Rate:	48kHz or 96kHz
Sample Rate conversion:	8kHz-96kHz
THD+N:	-140dB
Latency:	3/Fso + (56.581/Fsi) + (55.658/Fso).
Control Ports:	
12 inputs and 6 outputs	
Control Input Voltage	0 to 4.5v
Control Input Impedance	4.7kΩ to +5V (2-wire mode), >1MΩ (3-wire mode)
Logic Output Voltage	0 or +5V unloaded
Logic Output Impedance	440Ωs
Logic Output Current	10mA source, 60mA sink
Watchdog Output:	Phoenix/Combicon connector for failsafe control
Opto Output current	14mA maximum
Withstanding voltage	80V maximum (Off)
Series Impedance	220Ω (isolated)
Control Network (All Models):	
Connectors	RJ45 Ethernet connector
Maximum cable length	100m/300ft on Category 5 cable between device and Ethernet switch
CobraNet™ Audio Network:	(BLU-80, BLU-32 only)
Connectors:	2 x RJ45 connectors
Maximum cable length	100m/300ft on Category 5 cable between device and Ethernet switch
Power and Dimensions:	
Mains Voltage	85-270V AC, 50/60Hz
Power Consumption	<35VA
BTU Rating	<120 BTU/hr
Operating Temperature Range:	5(41) to 35(95) degrees C(degrees F)
Dimensions	(h (U) x w x d): 1.75" (1U) x 19" x 11.3" (45mm x 483mm x 287mm)
Weight	18.6 lbs / 8.4kgs (estimated)

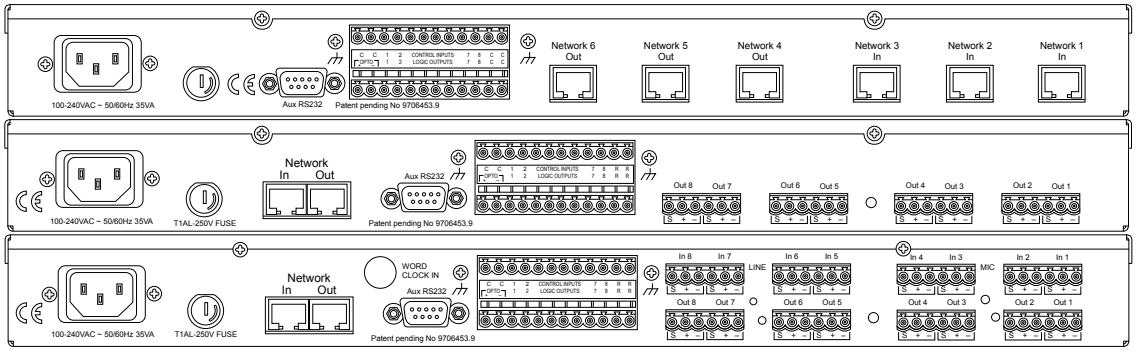
SOUNDWEB ORIGINAL – Networked Signal Processors | 9088iis, 9008iis, 3088 and 9000iis

SOUNDWEB ORIGINAL

SW9000IIS
(rear diagram)

SW9008IIS
(rear diagram)

SW9088IIS
(rear diagram)



Input Section: (9088iis, 3088)	8 Analog, electronically balanced, on Phoenix/Combicon removable screw connectors
Line Inputs	Nominal gain 0dB, electronically switchable to +12dB gain, input impedance 10kΩ
Mic/Line Inputs	Nominal gain 0dB, electronically switchable up to +72dB in +6dB steps
Input Impedance	3.5kΩ
Maximum input level	+20dBu with 0dB input gain, +8dBu with 12dB gain

CMRR	>75dB at 1KHz
Input Noise	(E.I.N.) <-128dBu typical with 150Ω source
Phantom power	48V nominal, selectable per inputDigital Input/Output option: (9088iis, 3088) 2 x 2-channel inputs and 2 x 2-channel outputs per card, on Phoenix/Combicon removable screw connectors. Corresponding Analog outputs remain live and in parallel with Digital Outputs.

BSS Audio incorporates high quality mechanical fans in some products. All mechanical fans have a limited life expectancy. We recommend annual inspection of fans for dust occlusion and excessive noise. Fan assemblies should be replaced after six to ten years of use. Environmental factors such as elevated temperature, dust, and smoke can adversely affect fan life. Systems exposed to these conditions should be inspected more frequently. Fan replacement can be performed either at the factory or by an experienced technician in the field. Please contact BSS Technical Support for more information on purchasing replacement parts or product service. BSS Audio has a policy of continued product improvement and accordingly reserves the right to change features and specifications without prior notice.

Product Specifications:

SOUNDWEB ORIGINAL – (Specifications Continued)

Interface standard	AES/EBU
Digital resolution	24-bitInput sampling rates 32-96kHz
Output sampling rates	44.1, 48. 88.2, 96kHz (independent for each output)
Output clock source	Internal, Inputs 1 & 2, External Word Clock or System Clock (48kHz)
Input clock source	Independent or System Clock
Output Section: (9088iis, 9008iis, 3088)	
Maximum output level	+20dBu
Frequency response	±0.5 dB) 15 Hz to 20 kHz
Harmonic Distortion (THD)	<0.01%, 20Hz-20kHz, +10dBu output
Dynamic range:	105 dB typical, 22 Hz-22 kHz unweighted, 108dB typical A-weighted
Inter-channel crosstalk	<-75 dB
Control Ports: (All devices)	
Cntrl. input voltage	0 to 4.5V
Cntrl input impedance (2 wire)	4.7kΩ to +5V
Cntrl input impedance (3 wire)	>1mΩ
Logic output voltage	0 or +5v unloaded
Logic output impedance	440Ω Opto. output current 14mA max
Opto. output voltage	80V max
Opto. output series impedance	220Ω (isolated)
Network: *(9000iiss, 9088iis, 9008iis)*	
Maximum network cable length	300m/1000ft between any two devices
Power & Dimensions: *(9000iis, 9088iis, 9008iis, 3088)*	
Main supply	85-270VAC, 50/60Hz
Power consumption	<35VA
Dimensions:	(h (U) x w x d): 1.75" (1U) x 19" x 11.3" (45mm x 483mm x 287mm)
Weight:	6.6 lbs / 3kgs
Soundweb 9010 Programmable Controller:	
Mic Input	18 Bit A/D Conversion
External Input Specifications	
Dynamic Range	81dB 22Hz-22kHz unweighted
Gain Control Range	34dB to 72.5dB
Max Input Level	-17dBu
Input Noise (E.I.N.)	-106dBu @ 150Ω
Audio Output	18 Bit D/A Conversion
Dynamic Range	>88dB 22Hz- 22kHz unweighted Frequency Response ±0.5dB 30Hz to 20kHz
THD	<0.05% 20Hz-20kHz 0dBu
Max Output Level	+4dBu
Channel Separation	80dB, 20Hz-20kHz
Power Requirements	+24V DC, <5VAS

SW9016/9026 Video/Audio Switcher and Audio Switcher:

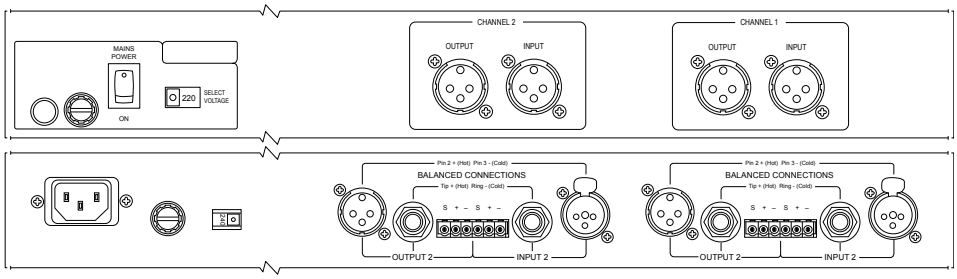
Video: (SW9016)	
8 Composite Video inputs	(CBVS or S-Video) on BNC connectors with BNC loopthrough connectors
Video Standard	PAL or NTSC (auto selected)
Video Bandwidth	150Mhz
Video Crosstalk	<70dBR up to 10MHz
Sync	Automatically either Channel 1 or 'Sync' input
Impedance	75 Ohm self-terminating
Routing	8x4 Video Matrix
Video outputs:	4 x 75Ohm Composite Video Outputs on BNC connectors
Audio: (SW9016/SW9026)	
16 Balanced Audio inputs	Phoenix/Combicon removable screw connectors
Routing	16x8 Audio Matrix, each channel independently addressable
Input Impedance	10kΩ
Maximum Input Level	+20dBu
THD	<0.02%
Frequency Response:	±.02dB 20Hz-20kHz
S/N Ratio	>110dBR at unity gain
Crosstalk	<-100dB
CMRR	>40dBR
Audio Outputs	8 Balanced Audio Outputs on Phoenix/Combicon removable screw connectors.
Output gain	adjustable, -∞ to +20dB
Control & Presets:	
Presets	8 presets per video output zone when used with standalone PC application
Serial Control Port	RS232 connects to Soundweb 9088iis,9008iis 3088, 9000iis or PC
Power and Dimensions:	
Dimensions (h (U) x w x d)	
SW9016	3.5" (2U) x 19" x 6.6" 89mm x 445mm x 168mm
SW9026	1.75" (1U) x 19" x 6.6" 44.5mm x 445mm x 168mm
SW9016	3kgs / 6.6 lbs
SW9026	2.3kgs / 5.3 lbs
Power	12-24V DC, <5VA via Phoenix screw terminal or 2.4mm inline barrel connector

FCS SERIES – Graphic Equalizers | FCS-960, FCS-966

FCS Series

FCS-960
(rear diagram)

FCS-966
(rear diagram)

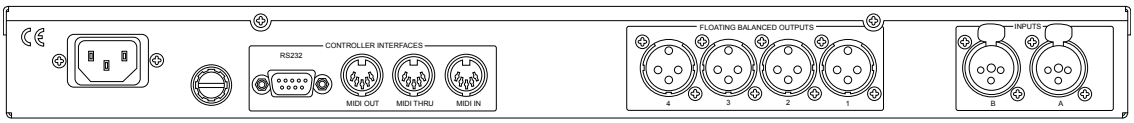


FCS-960	
Inputs:	
Impedance	10kΩ, electronically balanced
Max Input Level	+20dBu
Connector	XLR3-31
Output Section:	
Output	Electronically balanced and floating
Max Output Level	+20dBu into 600Ω
Connector	XLR3-32
System Performance:	
Frequency Response	±0.25dB 20Hz-20kHz
Distortion (THD)	<0.005% 20Hz-20kHz @ +4dBu
Output Noise (Flat)	<-93dBu 22Hz-22kHz unweighted
Channel Separation (FCS-960)	>80dB from 20Hz-20kHz
Gain Control Range	±10dB
Peak Indicator	+18dBu
Bypass	Passive fail-safe bypass relay
Filter	MFB Constant Q type
Power and Dimensions:	
Power Requirements	50/60Hz, 90V-264V
Power Consumption	< 00VA
Dimensions (HxWxD):	00" x 19" x 00" 000mm x 483mm x 000mm
Weight	6.6 lbs / 3 kg (estimated)

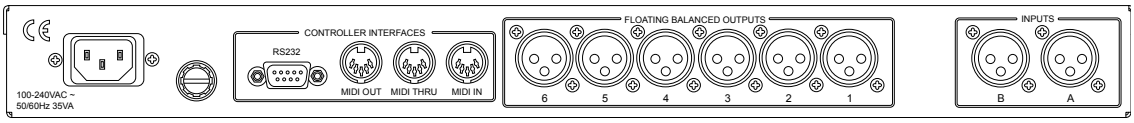
FCS-966	
Input Section:	
Input Impedance	10kΩ, electronically balanced
Maximum Input Level	>+20dBu
CMRR	>-40dB @1kHz
Output section:	
Output Impedance	<50Ω, electronically balanced
Maximum Output Level	>+20dBu into 600Ω
Filters:	
HP filter	OUT to 250Hz @ 12dB/octave
LF contour	±6dB shelving @ 50Hz 6dB/octave
HF contour	±6dB shelving @ 14kHz 6db/octave
Frequency bands	±15dB on ISO centers with a Q of 4
General Performance	
Frequency Response	5Hz to 45kHz ±1dB
Noise	<-94dBu 22Hz to 22kHz
Dynamic Range	> 115dB
Cross Talk	>-80dB @1kHz
Distortion	<0.005%THD (80kHz measurement BW) 20Hz-20kHz
Gain control	+10dB to ∞
Power and Dimensions:	
AC Power	115/230V AC, 50/60Hz, 30VA
Dimensions	19" x 5.25" x 7.1" / 483mm x 134mm x 180mm
Weight	6.6lbs / 3kgs

FDS-Series – Loudspeaker Management Systems | FDS-366T, FDS-336T and FDS-334T

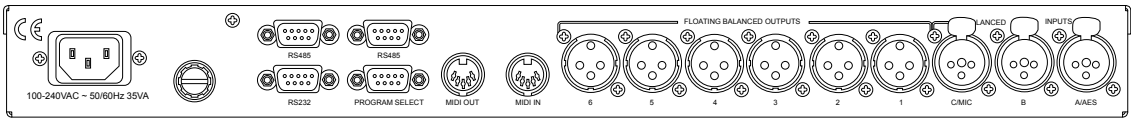
FDS-334T
(rear diagram)



FDS-336T
(rear diagram)



FDS-366T
(rear diagram)



FDS-366T	
Input Section:	
Input Impedance	10kΩ, electronically balanced
Maximum Input Level	+20dBu
CMRR	>50dB 30Hz-20kHz
Input gain	+/-15dB variable in 0.1dB steps
Input Connector	XLR-3F
AES/EBU Interface:	
Input Sample Rate	44.1kHz, 48kHz, 88.2kHz, 96kHz
Output Section:	
Output Impedance	<50Ω, electronically balanced and floating
Maximum Output Level	+20dBu into 600Ω or greater
Output Gain ±21dB, variable in 0.1dB steps	
Output Connector	XLR-3M. transformer Balancing optional
Crossover Filters:	
Slopes	6, 12, 18, 24, 36, 48 or 52dB per octave (Filter type dependant)
Type	WHISEWORKS–NTM™, Bessel, Butterworth, or Linkwitz-Riley
Delays:	
Available on Inputs	A, B, and C
Outputs	1, 2, 3, 4, 5, 6
Delay step	11 microseconds minimum
Max Delay time	2.6 seconds
EQ:	
Max number of EQ filters	> 50 depending on crossover slopes
EQ Type	Parametric, Bell or shelving on any filter
EQ Gain	±15dB, variable in 0.2dB steps
Bandwidth	0.05 to 3 octaves, variable in 0.05 steps
EQ frequency	15Hz to 20kHz
Dynamic slope	2:1 to 20:1 (dynamic EQs only)
General Performance (filters out)	
Frequency response	10Hz - 20kHz, ±0.25dB 10Hz - 40kHz, +/-2dB
Dynamic range	>112dB, unweighted 22Hz to 22kHz, >117dB when AES/EBU inputs used
Channel Separation	>80dB, 30Hz-20kHz
Distortion (THD)	<0.005%, 20Hz - 20kHz @+10dBu output
Power and Dimensions	
AC Power	90V-264V AC, 50/60Hz, 30VA
Dimensions	19" x 1.75" x 11.5" / 483mm x 45mm x 292mm
Weight	8.4lbs / 3.8kgs

MINIDRIVE	
Inputs	
Max Level	+20dBu
Input Impedance	10kΩ, electronically balanced
Outputs	
FDS-336T	6 channels
FDS-334T	4 channels
Max Output Level	+20dBu, into 600Ω, electronically balanced
Output Impedance	47Ω
General Performance:	
Dynamic Range	>108dB unweighted 22Hz-22kHz
Frequency Response	< ±0.25dB, 15Hz-20kHz with filters out
Distortion (THD)	< 0.01%, 20Hz-20kHz @ +10dBu input level
Audio Sample Rate	48kHz
Channel Separation	> 80dB, 20Hz-20kHz
A/D & D/A Conversion:	24-bit, input and output
Crossover Filters:	
FDS-334T	Mono 4-way, stereo 2-way
FDS-336T	Mono 6-way, stereo 3-way, stereo 2-way with A+B sum 2-way, any combination of 2 inputs to up to 6 outputs with individual passbands
Crossover Slopes	Bessel, 12 & 24dB/octave; Linkwitz-Riley, 12, 24 or 48dB/octave; Butterworth, 6, 12, 18, 24 or 48dB/octave; WHISEWORKS-NTM, 36 & 52dB/octave
Limiters:	
Mid-filter	2-stage limiters with threshold of -10 to +20dBu
EQ:	
Up to 38 bands of EQ	Dependent upon used crossovers slopes.
Type	High and Low shelving at 6dB or 12dB/octave or fully parametric with bandwidth of 0.05 to 3.0 octaves
Frequency range	15Hz to 16kHz, gain of ±15dB in 0.5 dB steps
Delay:	
Delay Time	635ms maximum delay on each input to output path
Delay Time Resolution	21µs steps
Delay Units	Milliseconds, meters, feet or frames per second
Power and Dimensions	
Power Requirements	50/60Hz, 90V-264V
Power Consumption	< 30VA
Dimensions (HxWxD):	1.75" x 19" x 8" 44.4mm x 483mm x 203mm
Weight (shipping)	6.2 lbs / 2.8 kg

AR-133 – Active DI Box/Line Balancer

AR-133	
Section:	
Input	1MΩ (pad at 0dB), 47kΩ (pad at -20dB), 47kΩ (pad at -40dB)
Max Input Level	+9dBu (pad at 0dB), +29dBu (pad at -20dB), +49dBu (pad at -40dB)
Connectors	Two Parallel ¼" jacks, parallel XLR connector (unbalanced)
Output Section:	
Output Transformer	Max Output Level +8dBu into 600Ω or greater
Connector	XLR3-32

General Performance:	
Distortion (THD)	< 0.005% at 1kHz, 0dBu output
Noise	<-105dB unweighted, 22Hz-22kHz*
Frequency	30Hz to 20kHz, +0dB/-1dB
Power and Dimensions	
Main/Standby Power	9 volt PP3 type, battery preferably alkaline
Current drain phantom:	<7.5mA; battery: <2mA
Phantom Power	+20 volts DC to +48 volts DC
Dimensions	2.3" x 4.9" x 5.6" / 59 mm x 124 mm x 143 mm
Weight	1.4 lbs / 650 gms, excluding batteries

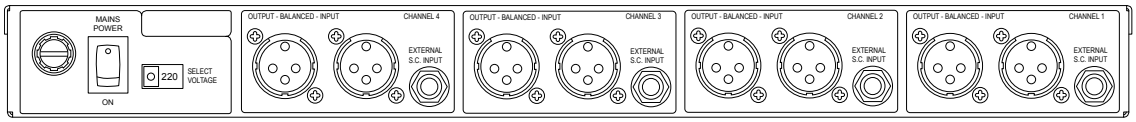
** Noise measured relative to maximum output.*

Product Specifications:

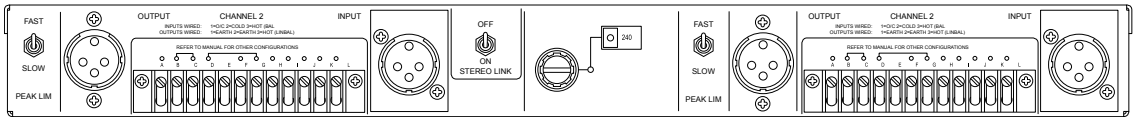
DPR-Series – Signal Processors | DPR-504, DPR-404 and DPR-402

DPR-Series

DPR-504/DPR-404
(rear diagram)



DPR-402
(rear diagram)



DPR-504	
Input Section:	
Impedance	Balanced 12kΩ differential
Max Input Level	+20dBu
CMRR	>50dB, 20Hz-20kHz
Connector	XLR3-31
Output Section:	
Impedance	600Ω, balanced and floating to drive
Max Output Level	+20dBu into 600Ω load
Connector	XLR3-32
Range	Switchable attenuation between 70dB and 20dB
System Performance:	
Frequency Response	+1dB, 20Hz to 20kHz
Ultrasonic low pass filter	3dB at 32kHz
Noise	(Measured to CCIR 4682 Zero attenuation) <-86dBu
Maximum attenuation	<-90dBu
Distortion (THD)	<0.005%, 20Hz to 20kHz
SMPTE IM	<.002%
Crosstalk	>90dB 20Hz to 20kHz
Operating Controls:	
Key Filter Frequency	Variable between 30Hz and 15kHz center
Key Filter Width	Variable between 0.5 and 10 octaves
Key Source	Internal or External, via rear panel ¼"TRS jack
Threshold	Variable between +20dBu and 50dBu
Attack	Audio attack switchable FAST (20µs) or AUTO (40µs 5ms Program-dependant)
Release	Combined Hold/Release function is variable 1ms to 3 sec Hold period tracks proportionally with Release
Link	Stereo linkable in pairs 1 & 2 and 3 & 4; Channels 1 and 3 become masters
Power and Dimensions:	
AC Power	Switched 120/240V +10% 20% 50/60Hz.
Dimensions	19" x 1.75" x 11" / 482mm x 44mm x 282mm
Weight (Shipping)	11 lbs / 5kg

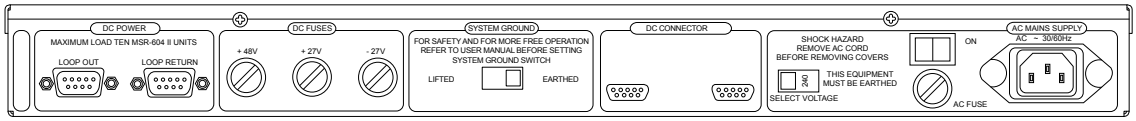
DPR-402	
Input Section:	
Impedance	10kΩ, electronically balanced
Max Input Level	+20dBu
CMRR	>-50dB 30Hz-20Hz
Connector	XLR3-31
Output Section:	
Impedance	< 1 Ohm, unbalanced, current limited
Max Output Level	+20dBu into 600Ω
Output Gain	+20dB continuously variable
Connector	XLR3-32
General Performance:	
Frequency	+1dB 25Hz-20kHz
Ultrasonic Response Filter	-3dB@ 30kHz
Noise	(E.I.N.) -86dBu 22Hz-22kHz, -82dBu CCIR weighted
Distortion	(THD) Unity gain, +10 dBu output, below threshold, 0.03% 20Hz-20kHz
IMD 0.01% SMPTE	10 dB compression. Threshold 0dBu
Crosstalk	<-85dB 20Hz-20kHz
Compressor:	
Threshold	-30 to +20dBu continuously variable
Ratio	1:1 continuously variable to ∞:1
Max VCA Range	30dBu
Attack Time	11 steps, 50s-80ms
Release Time	10 steps 5ms to 5s and AUTO
Auto Time Constant	Two part program-dependent time constant. Typical attack time is 200s on fast transients, release time 10ms for 63% recovery from a 10dB 4ms response, and 1 sec for a 10dB 40ms response
De-esser:	
Threshold	-30 to +20 dBu continuously variable
Ratio	Infinite, at and above twice the set frequency
Frequency Range	800Hz to 15kHz continuously variable
Peak Limiter:	
Threshold Range	+4dBv to +20dBu continuously variable
Ratio	20:1
Attack Time	Fast setting 150s, Slow setting 750s
Release Time	Fast setting 100ms, Slow setting 500ms
Power and Dimensions	
AC Power	120-220V +105-20% 50/60Hz 15VA.
Dimensions	19" x 1-7.5" x 9" / 482mm x 44mm x 228mm
Weight	10 lbs / 4.5kg

DPR-404	
Input Section	
Impedance	Balanced 12kΩ differential
Max Input Level	+20dBu
CMRR	>50dB, 20Hz-20Khz
Connector	XLR3-31
Output Section	
Impedance	Balanced and floating to ,drive 600Ω loads
Max Output Level	+20dBu / 600Ω load
Connector	XLR3-32
General Performance	
Frequency Response	+1dB, 20Khz
Ultrasonic Low Pass Filter	3db at 32kHz
Noise	<-86dBu measured to CCIR 4682
Distortion (THD)	<0.05%, 20Hz to 20kHz
SMPTE IM	<0.02%
Crosstalk	<90dB, 20Hz-20kHz
Operating Controls:	
De-Ess Frequency	Variable from 10kHz to10kHz, dynamic HF shelf turnover frequency
De-Ess Threshold	Variable from +20dBu to 30dBu, independent of compressor/limiter settings
Threshold	Variable between +20dBu and 30dBu
Ratio	Variable from 1:1 to ∞:1
Limit	progressive soft to hard knee characteristic
Attack	Program dependent, auto time constant. Nominal 200microsec (30ms FAST) for 10% response, and nominal 2ms (300ms FAST) for 63% response.
Release	Program dependant, 2 part auto time constant. Nominal 10ms (2ms FAST) to 63% recovery after 4ms overdrive 10db above threshold, and nominal 1s (300ms FAST) to 63% recovery after 40ms overdrive 10dB above threshold
Gain	Variable from 20dB to +20dB
Link	Stereo linkable in pairs 1 & 2 and 3 and 4. Channels 1 and 3 become masters
Power and Dimensions	
Dimension	19" x 1.75" x 11" / 482mm x 44mm x 282mm
Weight	11 lbs / 5kg
AC Power	Switched 120/240V +10% 20% 50/60Hz

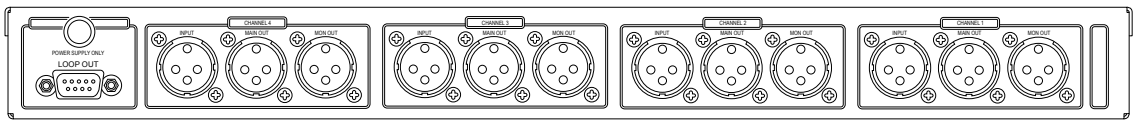
MSR-602 II/MSR-604 II – Active Signal Distribution System

MSR Series

MSR-602 II
(rear diagram)



MSR-604 II
(rear diagram)



MSR-602 II	
Power:	
AC Input	90130/180-260 VAC 50/60Hz @ 150VA
Connector	3 pin IEC with locking clip
Voltage Selector	Rear panel: 120/240V
DC Outputs	+27V unregulated @ 4A max: low ripple
	-27V unregulated @ 4A max: low ripple
	48V +/-5% regulated @ 500mA max
System Ground Lift	Rear panel: Slide switch
Level Metering and Monitoring:	
Indicators	3 LED's, post fuse, on +27, -27 and +48V outputs
Headroom Meter	Via LISTEN bus and MSR-604 II
LISTEN switch (momentary) six point LED meter: 0, -1, -3, -6, -12, -26dB	
	Reference clip input: via DC loop out connector
Headphone Meter	Via LISTEN bus and MSR-604II
LISTEN switch	Input: via DC loop out connector
	Connector: Stereo Mono ¼" Jack socket
	Load Impedance: 4Ω to 600Ω
	Maximum Output: 4Ω: 860mΩ RMS
Level Control	Continously variable -90 to 0dB
Headroom	>MSR-604 II Channel clip

MSR-604 II	
Input Section:	
Impedance	electronically balanced
Mic	2kΩ
Line	10kΩ
Max. Input Level	Mic +13dBu Line +33dBu
Input CMMR	>90dB @ 1kHz, >75dB 50Hz-10kHz
Connector	XLR3-31
Phantom Power	48VDC
Outputs:	
Impedance	+3 out - <23Ω, +31 out - 71Ω, +23 out - 100Ω
Connectors	XLR3-32
Maximum Output Levels	+3dBu / +13dBu / +23dBu internally preset
Max Load	+3 out - 200Ω, +13out & +23 out 600Ω
Outputs	Feeds, one and two, Transformer-balanced
	Main (F.O.H.) & monitor, electronically balanced
Impedance	<50Ω
Max Output Level	+3 dBm
Max Load	600Ω
Isolation	2.5K VAC RMS
Gain Functions:	
Gain	-40dB to +50dB
Gain Switch	-10, 0, 10, 20, 30 via panel
Mic/Line Pad	0 / -20dB via panel
Remote Pad	0 / -10dB via F.O.H. phantom
Output Scaling	+20 / +10 / 0dB via internal jumper blocks
System Performance:	
Frequency Response	<±0.5dB 20Hz -20kHz
Noise (E.I.N.)	-10dB Gain <-114dBu, 0dB Gain <-121dBu,
	10dB Gain <-124dBu, 20dB Gain <-125dBu,
	30dB Gain <-126dBu
Distortion (THD)	<0.01% 20Hz – 20kHz @ 10dB below clip
Level Metering and Monitoring:	
Channel	Clip LED @ 1dB below clip
Headroom Meter	On MSR-602 II PSU 6-point LED Meter -1, -3, -6, -12, -12,
	-26dB via LISTEN switch (momentary)
Headphone Monitor	On MSR-602 II PSU via LISTEN switch (momentary)
Stereo/Mono	¼" jack socket
Load Impedance	4Ω to 600Ω
Maximum Output	1 ohm RMS
Level Control	-90dB to 0dB
Power and Dimensions	
Power Requirements	±27V DC, +48VDC from MSR-602 II PSU only
Dimensions	1.75" x 19" x 11.6" / 44mm x 482mm x 293mm
Weight	8.4 lbs / 3.8kg

PS-8810 – Digital Processor/Mixer

PS-8810	
Audio Inputs and Outputs:	
Connectors	3-pin male removable barrier block connectors,
	Euro-style cable connector supplied
Phantom Power Voltage	+24VDC at 10mA
Input Gain Range	+20dB to –12dB
Maximum Input Level	+32dBu (line) or +7dBu (mic)
Input Impedance	20kΩ balanced, 10kΩ unbalanced
Output Impedance	100Ω balanced, 50Ω unbalanced
Max. Output Level	+20dBu
Digital Sampling	24-bit, 48kHz
General Performance:	
Dynamic Range	>100dB (A-weighted, 20Hz-20KHz)
Frequency Response	± 0.5dB, 20Hz-20kHz
CMMR	50dB at 60Hz (typical)
Crosstalk	<80dB at 10kHz
Distortion (THD)	<0.05% THD + N (1kHz, 0dBu)
RS232 Connector	DB9F computer interface for both component and
	interace models
Data Communication Rate	Selectable to 19.2K, 38.4K, 57.6K, or 115.2K Baud
IQ Bus:	
Connectors	RJ-45 for input/output, RJ-45 for daisy output
Data Format	Serial, binary, asynchronous; 1 start bit; 1 stop bit;
	8 data bits; no parity
Data Communication Rate	38.4K Baud
Data Format	Serial, binary, asynchronous; 1 start bit; 1 stop bit;
	8 data bits; no parity
Interface Type	Optically isolated 20mA current loop
Operation	Half-duplex transmission
Distance	Variable from 200 to 3000 feet /61 to 914 meters,
	depending upon wire capacitance. Typically 1000 feet
	(305 meters) using shielded twisted-pair wire, #26 AWG
	or larger. Extendable with an IQ Repeater
Control Port:	
Connector	DB37M for analog inputs, digital inputs, digital outputs,
	+5VDC, +10VDC and Ground
Power Supply	+5VDC and +10VDC Outputs provided.
	Total output current limited to 1A
Outputs:	
Logic Low	<0.1V
Logic High	10V (via internal pull-up) Output Current is limited to
	10mA max. per pin
Inputs:	
Input Impedance	>50kΩ
Logic Low	<0.5V
Logic High	>5V
Analog Range	0 to 10V (for inputs 9-16 only)
Maximum Input Voltage	25V
Power and Dimensions:	
AC Power	100VAC to 240VAC, 24VA nominal
Dimensions	19"/483mm standard rack mount width (EIA RS-310-B),
	16"/406mm) depth behind mounting surface, and 2U
	high (3.5"/8.9mm)
Weight	13.25 lbs / 6.1 kg

BSS AUDIO

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