Soundweb™ lite 3088 Signal Processor

Soundweb™

Overview

For applications requiring a maximum 8 inputs and 8 outputs, the Soundweb lite 3088 has all the facilities required for a sound system processor; 8 inputs and outputs, a DSP engine, analogue GPI control interfacing, and RS232 ports for external control by PC or AMX/Crestron type systems. The 3088 integrates with the 9012 and 9015 wall panels, and with the 9016 and 9026 Video/Audio Matrix Switchers, and is highly suited for use in small bars, restaurants, houses of worship, boardrooms and clubs, and many other applications.

Options include the choice of line input, mic/line input cards or AES/EBU Digital input/output cards which accept 2 stereo inputs at sample rates from 32kHz to 96kHz, and can output at 44.1, 48, 88.2, and 96kHz. When digital inputs are used, the analogue outputs remain in use as a mirror version of the digital output.

Each Soundweb 3088 can typically hold up to 12 completely different system designs in its own memory. Programming the unit is accomplished via the Soundweb Designer software, available free of charge from the BSS Audio website (www.bss.co.uk), and of course custom control panels may be constructed on the PC.

For safety-critical systems, the Soundweb 3088 has an opto-isolated output which functions as a watchdog. The opto-isolator conducts when power is applied to the unit and the software is functioning correctly, but stops conducting in the event of a power failure or other fault. This function can be used to trigger alarm systems.

- **8 Analogue Mic/Line Inputs and 8 Analogue Outputs**
- **Optional AES/EBU digital input/output (2 x stereo) cards with external word clock input**
- **Standalone unit with 200MIPS of DSP resource**
- **Integral multivoltage PSU (85V - 270V AC)**
- **Analogue Control ports for GPI hardware interfacing e.g. faders, switches, LEDs**
- **Front and rear access RS232 ports for PC control**
- **Integral memory holds up to 12 DSP system designs.**
- **Optional lacing bar to secure cabling**

Architects and Engineers Specifications

The Digital Signal Processor shall be a stand-alone unit of one rack space, capable of providing a fully-functional system with 8 analogue inputs and 8 analogue outputs, without the need for a permanent and dedicated, on-line computer system. The Analogue inputs shall have a remotely-adjustable gain stage prior to A/D conversion.

The system designer shall be provided complete flexibility in system configuration.

Line inputs or combination Microphone/Line inputs shall be provided, together with channel-selectable 48 volt phantom power for the microphone inputs. The unit shall provide a tamper-proof front-panel with no user-adjustable controls. Front panel LED indicators will provide monitoring of signal presence, clip and network status. Analogue/Digital/Analogue conversion shall be by 24-bit A-D converters and 24-bit D-A converters to provide maximum operating headroom and performance. The Dynamic Range shall be 105dB minimum (unweighted, 108dB A-weighted), with a THD figure of less than 0.01%.

Optional AES/EBU Digital input/output cards shall be available, each card having 2 stereo inputs and 2 stereo outputs. Input sample rates shall be accepted from digital sources with rates from 32kHz to 96kHz, and the user shall be able to select output sample rates of 44.1kHz, 48kHz, 88.2kHz, 96kHz or any sample rate between 32KHz and 96kHz using external clock synchronisation. Clock synchronisation shall be possible with the first digital input, the internal clock or an external word clock on a BNC connector.

Input and Output connections are provided via modular, Phoenix/Combicon style hardware. Mating connectors (Phoenix/Combicon MSTB 2.5/6-ST-5.08 or equivalent) shall be supplied with each unit on delivery or in advance.

System Configuration shall be by a Personal Computer, which may be disconnected after configuration without affecting installed operation of the unit. Up to 12 System Configurations shall be stored in each processing device, and these configurations shall not be limited by factory-only presets or predetermined processing. It shall be possible to configure a number of system presets, which may be recalled at any time via the PC or external control devices.

The unit's software shall provide a palette of audio processing objects for use in system designs to include, but not be restricted to: Automatic Microphone Mixers, Ambient Noise Compensators, Crossovers, Compressors, Gates, Duckers, Expanders, Limiters, Gain blocks, Graphic Equalisers, Parametric Equalisers, Stereo Parametric Equalisers, Filters, Metering points, Delays, Mixers, Matrix Routers, Matrix Mixers, Source Matrices, Tone Generators, and Source Selectors. The software shall provide the facility to construct user-defined control panels incorporating elements of the processing object parameter controls. Multi-level password-based security shall protect the integrity of the system.

The device configuration window shall provide a DSP gauge to inform the designer as to the percentage of DSP usage. The system design software shall be compatible with Windows 95, 98, Windows NT4, Windows 2000 and Windows XP 32 bit operating systems.

The software shall provide a facility to create personalised, custom processing objects for use in system designs, with provision for intellectual property cloaking via Macros.

It shall be possible to connect standard potentiometers and switches or control voltages to 8 control input ports to allow non-technical operators to change system presets or variable parameters. An additional 8 control output ports shall provide logic outputs for purposes of signal indication, external switching systems, or other similar system control applications. An opto-isolated fail-safe indicator shall be provided on an open-collector output.

Two RS-232 ports shall be provided to allow control of the unit from Multimedia Systems such as AMX, Crestron, Dataton, Avenger or other PC devices communicating in a serial mode, as well as independent, simultaneous control and programming from a PC operating Soundweb Designer software. It shall also be possible to remotely control the system network using a PC & modem to connect over telephone lines to another modem connected to the system network.

To aid in system management, the software shall provide a method of event logging so that system diagnostics are available. This event log shall include failures, warnings and information notices, and shall display the time of the event occurrence and the device to which the event applies and the design file originally loaded.

A small wall-mounting panel shall be available that allows control of sources and level (or similar functions) by connecting onto the control ports on the digital signal processor or network hub housed in a standard UK light switch wall panel.

The Digital Signal processor shall be the BSS Audio Soundweb Lite 3088
The wall-mounting panel shall be the **BSS Audio Soundweb 9012 or 9015 Wall Panel.**

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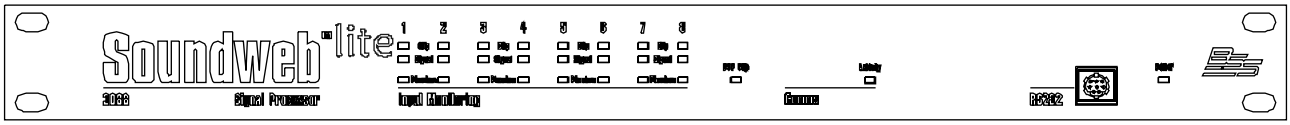
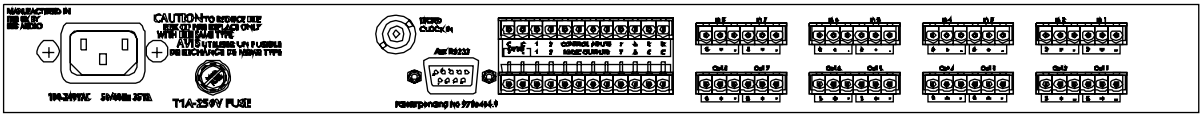


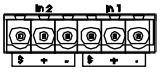


3088 Technical Specifications

INPUTS	8 Analogue; electronically balanced
Connectors:	Phoenix/Combicon removable screw connectors.
Line Inputs:	Nominal gain 0dB, electronically switchable to +12dB gain, input impedance 10kOhm
Mic/Line Inputs:	Nominal gain 0dB, electronically switchable up to +72dB, in +6dB steps, input impedance 3.5kOhm
Maximum input level:	+20dBu with 0dB input gain (+8dBu with 12dB gain)
CMRR	>75dB at 1KHz
Equiv. Input Noise (EIN):	<-128dBu typ with 150 Ohms source
Phantom power:	48V nominal, selectable per input
AES/EBU Digital Inputs:	2 x 2 channel inputs per card
Sample Rates:	32 to 96kHz, auto selected
Connectors:	Phoenix/Combicon removable screw connectors
OUTPUTS	8 Analogue; electronically balanced
Connectors:	Phoenix/Combicon removable screw connectors.
Maximum Output Level:	+20dBu
AES/EBU Digital Outputs:	2 x 2 channel outputs per card
Sample Rates:	44.1, 48, 88.2, 96kHz, user selectable
Connectors:	Phoenix/Combicon removable screw connectors
Digital Resolution:	24 bit
Frequency Response:	15Hz to 20KHz (+-0.5dB)
THD:	<0.01% (20Hz to 20KHz, +10dBu output)
Dynamic Range:	105dB typ. (22Hz to 22KHz unweighted) 108dB typ. (A-weighted)
Crosstalk:	<-75dB
CONTROL PORTS	8 inputs and 8 outputs
Control Input Voltage:	0 to 4.5v
Control Input Impedance:	4.7kOhms to +5V (2-wire mode) >1MOhm (3-wire mode)
Logic Output Voltage:	0 or +5V unloaded
Logic Output Impedance:	440 Ohm
WATCHDOG OUTPUT	Phoenix/Combicon connector for failsafe control
Opto Output current:	14mA maximum
Withstanding voltage:	80V maximum (Off)
Series Impedance:	220 Ohms (isolated)
Panel Led Indicators:	Signal Present (per input), CLIP (per input)
Mains Voltage:	85-270V AC, 50/60Hz,
Power Consumption:	<35VA

BSS Audio have a policy of continued product improvement and accordingly reserve the right to change features and specifications without prior notice.

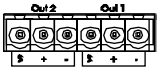
Input Connector Pin-outs



Each connector accommodates two inputs, pin 1 is on right when viewed from rear:

Pin 1: Input 1 (3,5,7) Screen (ground)
Pin 2 : Input 1(3,5,7) +ve (hot)
Pin 3 : Input 1 (3,5,7) -ve (cold)
Pin 4 : Input 2 (4,6,8) Screen (ground)
Pin 5 : Input 2 (4,6,8) +ve (hot)
Pin 6: Input 2 (4,6,8) -ve (cold)

Output Connector Pin-outs

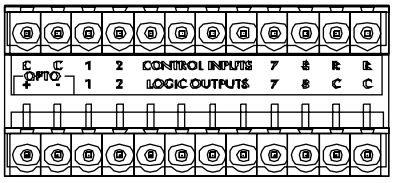


Each connector accommodates two inputs, pin 1 is on right when viewed from rear:

Pin 1: Output 1 (3,5,7) Screen (ground)
Pin 2 : Output 1(3,5,7) +ve (hot)
Pin 3 : Output 1 (3,5,7) -ve (cold)
Pin 4 : Output 2 (4,6,8) Screen (ground)
Pin 5 : Output 2 (4,6,8) +ve (hot)
Pin 6: Output 2 (4,6,8) -ve (cold)

Digital cards have 2 inputs and 2 outputs per card, wired as above, with inputs to the right as viewed from the rear.

Control port pin-outs



Upper Row: Logic Inputs

Pin 1, 2, : Common. Pin 11, 12 : Reference
Pin 3,4,5,6,7,8,9,10: Logic Input

Lower Row: Logic Outputs

Pin 1, 2, 11, 12 : Common
Pin 3,4,5,6,7,8,9,10: Logic Output

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