

Soundweb™ London

BLU-BOB1 and BLU-BOB2

Installation Guide

18-0670-E



IMPORTANT SAFETY INSTRUCTIONS

DECLARATION OF CONFORMITY

Manufacturer's Name:
BSS Audio

Manufacturer's Address:
8760 S. Sandy Parkway
Sandy, Utah 84070, USA

declares that the product:

Product name: BLU-BOB1, BLU-BOB2
Note: Product name may be suffixed by the EU.

Product option: all (requires Class II power adapter that conforms to the requirements of EN60065, EN60742, or equivalent.)

conforms to the following Product Specifications:

Safety: IEC 60065 -01+Amd 2

EMC: EN 55022:2006
EN 55024:1998
FCC Part 15

Supplementary Information:

The product herewith complies with the requirements of the:
Low Voltage Directive 2006/95/EC
EMC Directive 2004/108/EC
RoHS Directive 2011/65/EC
WEEE Directive 2002/96/EC

With regard to Directive 2005/32/EC and EC Regulation 1275/2008 of 17 December 2008, this product is designed, produced, and classified as Professional Audio Equipment and thus is exempt from this Directive.

Rex C. Reed
Director, Engineering
Signal Processing
8760 S. Sandy Parkway
Sandy, Utah 84070, USA
Date: October 30, 2013

European Contact: Your local BSS Audio Sales and Service Office or

Harman Music Group
8760 South Sandy Parkway
Sandy, Utah
84070 USA
Ph: (801) 566-8800
Fax: (801) 568-7583

U.K. MAINS PLUG WARNING

A molded mains plug that has been cut off from the cord is unsafe. Discard the mains plug at a suitable disposal facility.

NEVER UNDER ANY CIRCUMSTANCES SHOULD YOU INSERT A DAMAGED OR CUT MAINS PLUG INTO A 13 AMP POWER SOCKET.

Do not use the mains plug without the fuse cover in place. Replacement fuse covers can be obtained from your local retailer. Replacement fuses are 13 amps and **MUST** be ASTA approved to BS1362.



ATTENTION: RISQUE DE CHOC ELECTRIQUE - NE PAS OUVRIR

WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR MOISTURE

The symbols shown above are internationally accepted symbols that warn of potential hazards with electrical products. The lightning flash with arrowpoint in an equilateral triangle means that there are dangerous voltages present within the unit. The exclamation point in an equilateral triangle indicates that it is necessary for the user to refer to the owner's manual.

These symbols warn that there are no user serviceable parts inside the unit. Do not open the unit. Do not attempt to service the unit yourself. Refer all servicing to qualified personnel. Opening the chassis for any reason will void the manufacturer's warranty. Do not get the unit wet. If liquid is spilled on the unit, shut it off immediately and take it to a dealer for service. Disconnect the unit during storms to prevent damage.

The following is indicative of low altitude use; do not use this product above 2000m.



ELECTROMAGNETIC COMPATIBILITY

This device complies with part 15 of the FCC Rules and the Product Specifications noted on the **Declaration of Conformity**. Operation is subject to the following two conditions:

- this device may not cause harmful interference, and
- this device must accept any interference received, including interference that may cause undesired operation.

Operation of this unit within significant electromagnetic fields should be avoided.

- use only shielded interconnecting cables.

SAFETY INSTRUCTIONS

NOTICE FOR CUSTOMERS IF YOUR UNIT IS EQUIPPED WITH A POWER CORD.

WARNING: THIS APPLIANCE SHALL BE CONNECTED TO A MAINS SOCKET OUTLET WITH A PROTECTIVE EARTHING CONNECTION.

The cores in the mains lead are coloured in accordance with the following code:

GREEN and YELLOW - Earth BLUE - Neutral BROWN - Live

As colours of the cores in the mains lead of this appliance may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:

- The core which is coloured green and yellow must be connected to the terminal in the plug marked with the letter E, or with the earth symbol, or coloured green, or green and yellow.
- The core which is coloured blue must be connected to the terminal marked N or coloured black.
- The core which is coloured brown must be connected to the terminal marked L or coloured red.

This equipment may require the use of a different line cord, attachment plug, or both, depending on the available power source at installation. If the attachment plug needs to be changed, refer servicing to qualified service personnel who should refer to the table below. The green/yellow wire shall be connected directly to the units chassis.

CONDUCTOR		WIRE COLOR	
		Normal	Alt
L	LIVE	BROWN	BLACK
N	NEUTRAL	BLUE	WHITE
E	EARTH GND	GREEN/YEL	GREEN

WARNING: If the ground is defeated, certain fault conditions in the unit or in the system to which it is connected can result in full line voltage between chassis and earth ground. Severe injury or death can then result if the chassis and earth ground are touched simultaneously.

WARNING:

- Apparatet må tilkoples jordet stikkontakt.
- Apparatet skall anslutas till jordat uttag.
- Laite on liitettävä suojakotkettimilla varustettuun pistorasiaan.

WARNING FOR YOUR PROTECTION READ THE FOLLOWING:

KEEP THESE INSTRUCTIONS

HEED ALL WARNINGS

FOLLOW ALL INSTRUCTIONS

THE APPARATUS SHALL NOT BE EXPOSED TO DRIPPING OR SPLASHING LIQUID AND NO OBJECT FILLED WITH LIQUID, SUCH AS VASES, SHALL BE PLACED ON THE APPARATUS

CLEAN ONLY WITH A DRY CLOTH.

FOR INDOOR USE ONLY.

DO NOT BLOCK ANY OF THE VENTILATION OPENINGS. INSTALL IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.

DO NOT INSTALL NEAR ANY HEAT SOURCES SUCH AS RADIATORS, HEAT REGISTERS, STOVES, OR OTHER APPARATUS (INCLUDING AMPLIFIERS) THAT PRODUCE HEAT.

ONLY USE ATTACHMENTS/ACCESSORIES SPECIFIED BY THE MANUFACTURER.

UNPLUG THIS APPARATUS DURING LIGHTNING STORMS OR WHEN UNUSED FOR LONG PERIODS OF TIME.

Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or third prong are provided for your safety. If the provided plug does not fit your outlet, consult an electrician for replacement of the obsolete outlet.

Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.

Use only with the cart stand, tripod bracket, or table specified by the manufacture, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.



Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped. **POWER ON/OFF SWITCH:** For products provided with a power switch, the power switch DOES NOT break the connection from the mains.

MAINS DISCONNECT: The plug shall remain readily operable. For rack-mount or installation where plug is not accessible, an all-pole mains switch with a contact separation of at least 3 mm in each pole shall be incorporated into the electrical installation of the rack or building.

FOR UNITS EQUIPPED WITH EXTERNALLY ACCESSIBLE FUSE RECEPTACLE: Replace fuse with same type and rating only.

MULTIPLE-INPUT VOLTAGE: This equipment may require the use of a different line cord, attachment plug, or both, depending on the available power source at installation. Connect this equipment only to the power source indicated on the equipment rear panel. To reduce the risk of fire or electric shock, refer servicing to qualified service personnel or equivalent.

If connected to a 240V supply, a suitable CSA/UL certified power cord shall be used for this supply.

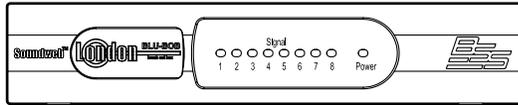
POWER ADAPTER: Ensure a minimum of 8 inches of clearance and ventilation around the adapter.

If you want to dispose this product, do not mix it with general household waste. There is a separate collection system for used electronic products in accordance with legislation that requires proper treatment, recovery and recycling.

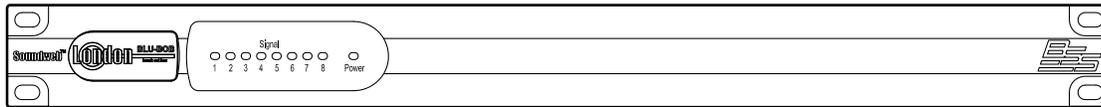
Private household in the 25 member states of the EU, in Switzerland and Norway may return their used electronic products free of charge to designated collection facilities or to a retailer (if you purchase a similar new one).

For Countries not mentioned above, please contact your local authorities for a correct method of disposal. By doing so you will ensure that your disposed product undergoes the necessary treatment, recovery and recycling and thus prevent potential negative effects on the environment and human health.

Front panel



BLU-BOB1



BLU-BOB2

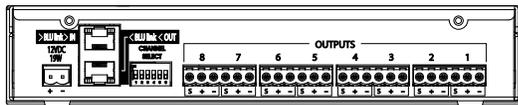
Signal

The Signal LED illuminates for each channel where a signal is present.

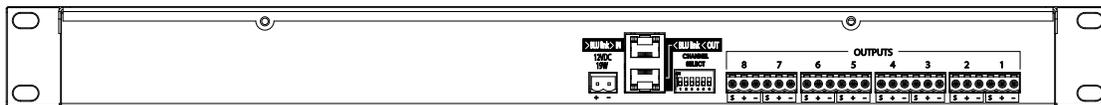
Power

The Power LED illuminates when the BLU-BOB device is powered on.

Rear panel



BLU-BOB1



BLU-BOB2

12VDC Power Adapter

The BLU-BOB Break-Out Box output expanders are powered by a 12V DC adapter that is included with the device (part number: PS1225DC-S/T). Use only the adapter provided.

BLU link In/Out

The Soundweb London Digital Audio Bus is a high bandwidth, fault-tolerant bus of 256 channels at 48kHz and 128 channels at 96kHz. Devices are connected, using Cat 5e or Cat 6 cable, in a ring from the OUT connector of one device to the IN connector of the adjacent device. The distance between devices in the ring can be up to 100m on Cat 5e or Cat 6 or up to 10km on single mode fiber using the MC-1 fiber media converter. The ring topology allows any single cable fault without loss of channels. All devices within a given Digital Audio Bus ring must be configured for the same sample rate. The sample rate of the BLU-BOB1 and BLU-BOB2 devices is automatically configured based on remotely configured devices within the Digital Audio Bus ring.

PLEASE NOTE: BLU-BOBs with version numbers below v1.05 are not compatible with “pull-down” sample rates (i.e., running 47.952kHz for system clock instead of 48kHz; or running 95.904kHz for system clock instead of 96kHz). Pull-down sample rates are occasionally required in video post-production environments in the United States. If the design requires pull-down and you have a pre v1.05 BLU-BOB, please contact Customer Services at bss.support@harman.com for guidance. BLU-BOBs with a sticker on the rear panel showing V1.05 or above are compatible with pull-down rates.



Channel Select

The BLU-BOB output channels are easily configured by six DIP switches located on the rear of the device, which select a range of 8 consecutive channels from the Digital Audio Bus. Output channel assignments are configured by DIP switch selection only. The BLU-BOB is not configured by HiQnet™ London Architect.

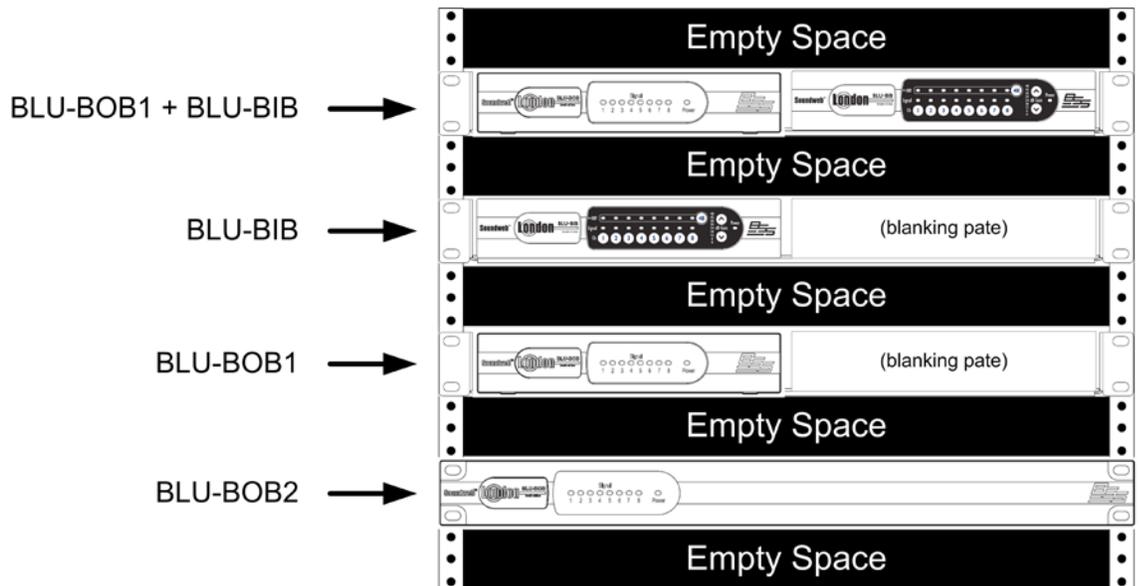
Analog Output 1-8

The 8 analog line level outputs utilize the same terminal block connectors (part number: 32-1226) as all other members of the Soundweb London family (except for BLU-100, BLU-101, and BLU-102, which require smaller connectors).

Installing BLU-BOB into a Rack

The BLU-BOB2 and the BLU-BOB1 each offer 8 channels of line-level analog output expansion from the Soundweb London digital audio bus (informally known as “BLU link”). The BLU-BOB2 can be mounted directly into a single 1U rack space. The BLU-BOB1 is a half-width version, and it requires the Rack-Mount Kit to mount it into a single 1U rack space (see “Using the Rack-Mount Kit” section for more info).

When installing a BLU-BOB2 or any combination of BLU-BOB1s and/or BLU-BIBs into a single rack space, it is recommended that one empty rack space is left above and below the devices. This allows heat to safely dissipate. See the below diagram for further clarification.



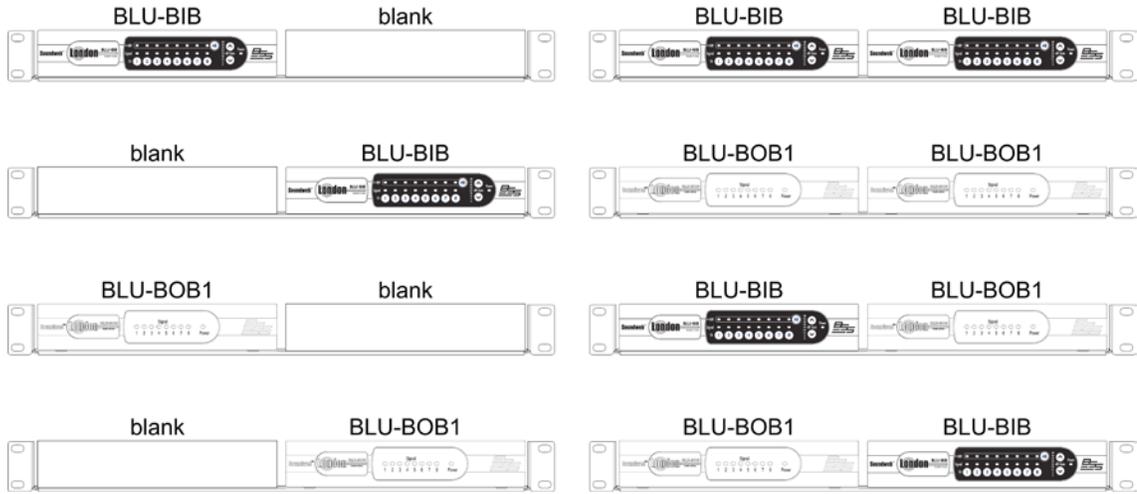
Using the Rack-Mount Kit (shipped separately)

The BSS Audio 1U Rack-Mount Kit (SKU: RACK MOUNT KIT) allows up to two half-rack Soundweb London devices—BLU-BIB and BLU-BOB1—to be mounted on a shelf occupying a single rack space. The 1U Rack-Mount Kit can accommodate one BLU-BIB device, one BLU-BOB1 device, two BLU-BIB devices, two BLU-BOB1 devices, or one of each device. With each device offering eight channels of analog I/O expansion, the 1U Rack-Mount Kit allows for higher I/O density (16 channels) in a single rack space.

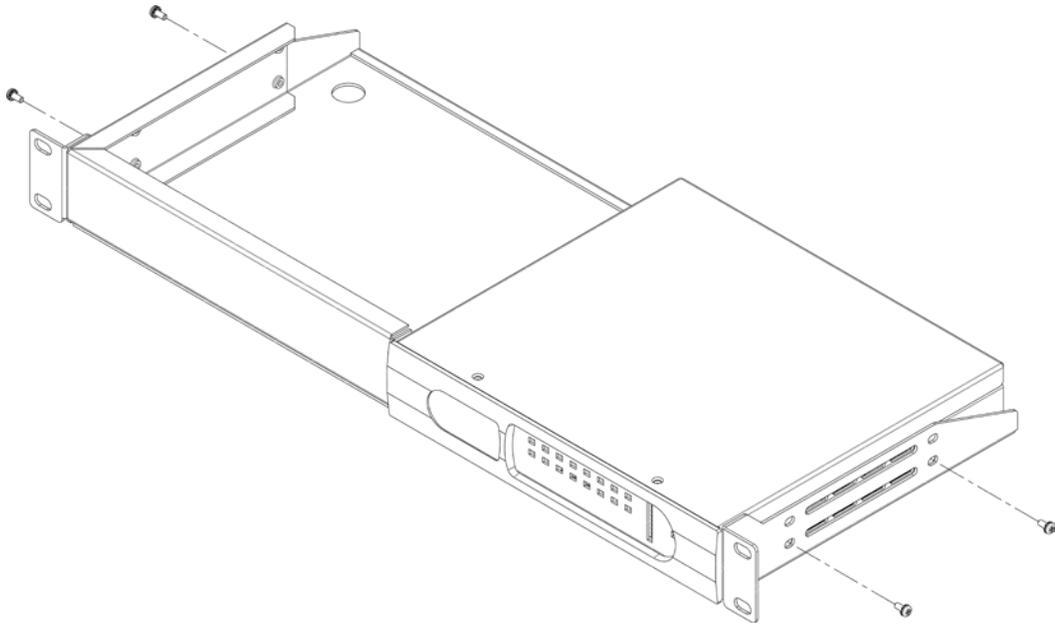
For instances in which only one I/O expander is mounted, the half-rack blanking plate (included with the RACK MOUNT KIT) can be used to fill the blank space in the front of the rack.



Possible BLU-BIB / BLU-BOB1 Rack-Mount Positions



Securing a Device and Blanking Plate to the Shelf





TECHNICAL SPECIFICATIONS:

Front Panel LED Indicators:	Signal present per output, and Power
Analog Outputs:	8 electronically balanced on Phoenix/Combicon removable screw connectors
Maximum Output Level:	+19dBu
Frequency Response:	20Hz-20KHz (+0.5dB/-1dB)
THD:	<0.01% 20Hz to 20KHz, +10dBu output
Dynamic Range:	110dB typical, 20Hz-20KHz unweighted
Crosstalk:	<-105dB 20Hz-20KHz
D/A Latency:	28/Fs (0.58ms@48k, 0.29ms@96k)
Output Impedence:	40 Ω balanced / 20 Ω unbalanced
Digital Audio Bus:	
Connectors:	2 x RJ45 Ethernet connectors
Maximum Cable Length:	100m/300ft on Category 5e cable between devices
Maximum Number of Nodes:	60
Latency Per Node:	4/Fs (0.08ms@48k, 0.04ms@96k)
Power and Dimensions:	
Power Supply:	12VDC external adapter (included)
AC Power Input to Adapter:	19W
BTU Rating:	65 BTU/hr
Operating Temperature Range:	5 (41) to 35 (95) degrees C (degrees F)
Dimensions BLU-BOB1 (H(U) x W x D):	1.65" (1U) x 8.63" x 7.75" (42mm x 219mm x 197mm)
Dimensions BLU-BOB2 (H(U) x W x D):	1.75" (1U) x 19" x 7.75" (45mm x 483mm x 197mm)
Weight BLU-BOB1:	2.96 lbs / 1.34 kg
Weight BLU-BOB2:	5.13 lbs / 2.33 kg



Channel Assignment							
CHANNELS	DIP SWITCH SETTINGS	CHANNELS	DIP SWITCH SETTINGS	CHANNELS	DIP SWITCH SETTINGS	CHANNELS	DIP SWITCH SETTINGS
1 to 8	ON 1 2 3 4 5 6	65 to 72	ON 1 2 3 4 5 6	129 to 136	ON 1 2 3 4 5 6	193 to 200	ON 1 2 3 4 5 6
9 to 16	ON 1 2 3 4 5 6	73 to 80	ON 1 2 3 4 5 6	137 to 144	ON 1 2 3 4 5 6	201 to 208	ON 1 2 3 4 5 6
17 to 24	ON 1 2 3 4 5 6	81 to 88	ON 1 2 3 4 5 6	145 to 152	ON 1 2 3 4 5 6	209 to 216	ON 1 2 3 4 5 6
25 to 32	ON 1 2 3 4 5 6	89 to 96	ON 1 2 3 4 5 6	153 to 160	ON 1 2 3 4 5 6	217 to 224	ON 1 2 3 4 5 6
33 to 40	ON 1 2 3 4 5 6	97 to 104	ON 1 2 3 4 5 6	161 to 168	ON 1 2 3 4 5 6	225 to 232	ON 1 2 3 4 5 6
41 to 48	ON 1 2 3 4 5 6	105 to 112	ON 1 2 3 4 5 6	169 to 176	ON 1 2 3 4 5 6	233 to 240	ON 1 2 3 4 5 6
49 to 56	ON 1 2 3 4 5 6	113 to 120	ON 1 2 3 4 5 6	177 to 184	ON 1 2 3 4 5 6	241 to 248	ON 1 2 3 4 5 6
57 to 64	ON 1 2 3 4 5 6	121 to 128	ON 1 2 3 4 5 6	185 to 192	ON 1 2 3 4 5 6	249 to 256	ON 1 2 3 4 5 6

Note: Lowest channel of 8 channel range is always output 1 of BLU-BOB



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