

# **Soundweb™ London**

## **BLU-103**

### **Installation Guide**

**5054331-A**



# IMPORTANT SAFETY INSTRUCTIONS

	<b>CAUTION</b> RISK OF ELECTRIC SHOCK DO NOT OPEN	
<b>ATTENTION:</b> RISQUE DE CHOC ELECTRIQUE - NE PAS OUVRIR		
<b>WARNING:</b> TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR MOISTURE		
<b>ATTENTION:</b> POUR RÉDUIRE LE RISQUE D'INCENDIE OU D'ÉLECTROCUTION N'EXPOSEZ PAS CET APPAREIL À LA PLUIE OU L'HUMIDITÉ		

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.



## 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.



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 households 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.

## WARNING FOR YOUR PROTECTION READ THE FOLLOWING:

READ THESE INSTRUCTIONS.

KEEP THESE INSTRUCTIONS.

HEED ALL WARNINGS.

FOLLOW ALL INSTRUCTIONS.

DO NOT USE THIS APPARATUS NEAR WATER.

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:** The Power switch used in this piece of equipment 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.

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

This Equipment is intended for rack mount use only.

# IMPORTANT SAFETY INSTRUCTIONS

## 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.
- APPARATEN SKALL ANSLUTAS TILL JORDAT UTTAG.
- LAITE ON LIITETTÄVÄ SUOJAKOSKETTIMILLA VARUSTETTUUN PISTORASIAAN.

## DECLARATION OF CONFORMITY

Manufacturer's Name: BSS Audio  
Manufacturer's Address: 10653 South River Front Parkway  
Suite 300  
South Jordan, Utah 84095, USA

declares that the product:

Product name: BLU 103  
Note: Product name may be suffixed by the EU.

Product option: None

conforms to the following Product Specifications:

Safety: IEC 60065 -01+Amd 2

EMC: EN 55022:2010  
EN 55024:2010  
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.

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

# CONSIGNES DE SÉCURITÉ IMPORTANTES



**CAUTION**

RISK OF ELECTRIC SHOCK  
DO NOT OPEN



**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**

**ATTENTION: POUR RÉDUIRE LE RISQUE D'INCENDIE OU D'ÉLECTROCUTION N'EXPOSEZ PAS CET APPAREIL À LA PLUIE OU L'HUMIDITÉ**

Les symboles illustrés ci-dessus sont des symboles acceptés internationalement qui avertissent des dangers potentiels relatifs à l'utilisation de produits électriques. Le voyant clignotant avec une flèche dans un triangle équilatéral signifie la présence de tensions dangereuses dans l'appareil. Le point d'exclamation dans un triangle équilatéral indique que l'utilisateur doit se référer au manuel d'utilisation.

Ces symboles indiquent qu'il n'y a aucune pièce utilisable par l'utilisateur à l'intérieur de l'appareil. Ne pas ouvrir l'appareil. Ne pas essayer de réparer soi-même l'appareil. Confier toute réparation à du personnel qualifié. Ouvrir la structure de l'appareil pour quelque raison que ce soit annulera la garantie du fabricant. Ne pas mouiller l'appareil. Si du liquide est renversé sur l'appareil, fermer immédiatement l'appareil et l'apporter chez un réparateur. Débrancher l'appareil pendant les tempêtes afin d'éviter des dommages.

Ce qui suit est représentatif d'une utilisation à basse altitude ; ne pas utiliser ce produit au-dessus de 2000 m.



## AVERTISSEMENT CONCERNANT LA FICHE SECTEUR

Une fiche secteur moulée qui a été coupée du cordon est dangereuse. Jeter la fiche secteur dans un centre de déchets adapté.

**VOUS NE DEVEZ EN AUCUNE CIRCONSTANCE INSÉRER UNE FICHE ENDOMMAGÉE OU COUPÉE DANS UNE PRISE SECTEUR 13 AMP.**

Ne pas utiliser la fiche secteur si le couvercle du coffret à fusibles n'est pas bien en place. Vous pouvez vous procurer des capots de fusible de rechange auprès de votre détaillant local. Les fusibles de remplacement sont de 13 A et DOIVENT être approuvés ASTA, BS1362.



Ne pas jeter ce produit avec les ordures ménagères. Il existe un système de collecte sélective pour les produits électroniques usagés en conformité avec les lois en vigueur en matière de traitement, de récupération et de recyclage.

Dans les 25 États membres de l'UE, en Norvège et en Suisse, les ménages peuvent envoyer leurs produits électroniques usagés sans frais vers des centres de collecte sélective ou chez un distributeur (contre l'achat d'un nouveau produit).

Contactez les autorités locales pour connaître les procédures de traitement des déchets adaptées dans les pays non mentionnés ci-dessus.

Non seulement cette précaution vous permettra d'être sûr que votre produit est correctement traité, récupéré et recyclé, mais elle vous évitera également de nuire involontairement à l'environnement et à la santé humaine.

## AVERTISSEMENT POUR VOTRE SÉCURITÉ LIRE ATTENTIVEMENT :

LIRE CES CONSIGNES.

CONSERVER CES CONSIGNES.

RESPECTER TOUS LES AVERTISSEMENTS.

SUIVRE TOUTES LES CONSIGNES.

NE PAS UTILISER CET APPAREIL PRÈS DE L'EAU.

NETTOYER UNIQUEMENT AVEC UN CHIFFON SEC.

POUR USAGE INTÉRIEUR UNIQUEMENT.

NE PAS OBSTRUER LES OUIËS D'AÉRATION. EFFECTUER L'INSTALLATION CONFORMÉMENT AUX INSTRUCTIONS DU FABRICANT.

NE PAS INSTALLER À PROXIMITÉ DE SOURCES DE CHALEUR TELLES QUE DES RADIATEURS, BOUCHES D'AÉRATION, PLAQUES CHAUFFANTES OU TOUT AUTRE APPAREIL (Y COMPRIS DES AMPLIFICATEURS) DÉGAGEANT DE LA CHALEUR.

UTILISER UNIQUEMENT LES PIÈCES/ACCESSOIRES MENTIONNÉS PAR LE FABRICANT.

DÉBRANCHER L'APPAREIL AU COURS DES ORAGES OU EN CAS DE NON-UTILISATION PENDANT UNE DURÉE PROLONGÉE.

Ne pas détériorer la sécurité de la fiche polarisée ou de la fiche de terre. Les fiches polarisées sont équipées de deux bornes de largeurs différentes. Les fiches de terre comportent deux lames et une troisième broche de mise à la terre. La broche la plus large ou troisième broche de mise à la terre est prévue pour votre sécurité. Si la fiche fournie ne correspond pas à votre installation électrique, faire appel à un électricien pour remplacer la prise hors normes.

Protéger le cordon d'alimentation contre les risques de piétinement ou de pincement, notamment au niveau des fiches, des prises de courant et du point d'attache avec le matériel.

Utiliser uniquement le chariot, le support, le trépied ou la table spécifié(e) par le fabricant ou vendu(e) avec le matériel. Si vous utilisez un chariot pour déplacer l'appareil, soyez suffisamment prudent pour éviter une éventuelle blessure consécutive au basculement du chariot et de sa charge.



Les réparations doivent être confiées à un technicien S.A.V. qualifié. Une réparation est nécessaire en cas de dommage quelconque et en particulier en cas d'endommagement du cordon d'alimentation ou de la fiche électrique, d'infiltration liquide, d'introduction involontaire d'un objet dans l'appareil, d'exposition de l'appareil à la pluie ou à un milieu humide, de fonctionnement anormal ou de chute de l'appareil.

INTERRUPTEUR MARCHÉ/ARRÊT : l'interrupteur d'alimentation de cet équipement NE coupe PAS la connexion secteur.

DÉBRANCHEMENT DE L'APPAREIL : la prise de courant doit rester facilement accessible. Pour un montage en rack ou une installation avec une prise inaccessible, un interrupteur omnipolaire à distance d'ouverture de contact d'au moins 3 mm doit être intégré à l'installation électrique du rack ou du local.

Si le matériel est relié à une alimentation de 240 V, utiliser impérativement un cordon d'alimentation adapté certifié CSA/UL pour ce branchement.

Cet équipement est exclusivement destiné à un montage en rack.

# CONSIGNES DE SÉCURITÉ IMPORTANTES

## COMPATIBILITÉ ÉLECTROMAGNÉTIQUE

Cet appareil est conforme au volet 15 des règles du FCC et aux spécifications techniques évoquées dans la **Déclaration de conformité**. Son fonctionnement est soumis aux deux conditions suivantes :

- cet appareil ne doit pas causer d'interférences nuisibles et
- cet appareil doit accepter les interférences captées, y compris les interférences susceptibles de nuire à son fonctionnement.

L'utilisation de cet appareil à proximité de champs électromagnétiques puissants n'est pas recommandée.

- utiliser exclusivement des câbles d'interconnexion blindés.

## CONSIGNES DE SÉCURITÉ

NOTICE ADRESSÉE AUX CONSOMMATEURS ÉQUIPÉS D'UN MATÉRIEL AVEC CORDON D'ALIMENTATION FOURNI.

AVERTISSEMENT : CET APPAREIL DOIT ÊTRE BRANCHÉ SUR UNE PRISE SECTEUR DOTÉE D'UNE PROTECTION PAR MISE À LA TERRE.

LES COULEURS DES NOYAUX DANS LES FILS SECTEURS DOIVENT RESPECTER LES CODES SUIVANTS :

**VERT ET JAUNE - TERRE    BLEU - NEUTRE    MARRON - PHASE**

LES COULEURS DES NOYAUX DANS LES FILS SECTEURS DE CET APPAREIL PEUVENT NE PAS CORRESPONDE AUX INSCRIPTIONS COLORÉES IDENTIFIANT LES TERMINAUX DANS VOTRE FICHE ; IL FAUT DONC PROCÉDER DE LA FAÇON SUIVANTE :

- LE NOYAU VERT ET JAUNE DOIT ÊTRE BRANCHÉ AU TERMINAL DE LA FICHE OÙ APPARAÎT LA LETTRE E OU LE SYMBOLE DE MISE À LA TERRE, OU AU TERMINAL VERT OU VERT ET JAUNE.
- LE NOYAU BLEU DOIT ÊTRE BRANCHÉ AU TERMINAL MARQUÉ D'UN N OU DE COULEUR NOIRE.
- LE NOYAU MARRON DOIT ÊTRE BRANCHÉ AU TERMINAL MARQUÉ D'UN L OU DE COULEUR ROUGE.

CE MATÉRIEL PEUT NéCESSITER L'UTILISATION D'UN CORDON D'ALIMENTATION DIFFÉRENT ET/OU D'UNE FICHE DE BRANCHEMENT DIFFÉRENTE SELON LA SOURCE D'ALIMENTATION DISPONIBLE À L'INSTALLATION. SI LA FICHE DE BRANCHEMENT DOIT ÊTRE CHANGÉE, FAIRE APPEL À UN TECHNICIEN QUALIFIÉ QUI DEVRA SE RÉFÉRER AU TABLEAU CI-DESSOUS. LE FIL VERT/JAUNE DOIT ÊTRE BRANCHÉ DIRECTEMENT AU CHÂSSIS DE L'APPAREIL.

CONNECTEURS		COULEUR DU FIL	
		normal	Alt
L	PHASE	MARRON	NOIR
N	NEUTRE	BLEU	BLANC
E	TERRE	VERT/JAU	VERT

**ATTENTION :** UN DÉFAUT DE MISE À LA TERRE PEUT PROVOQUER CERTAINS DYSFONCTIONNEMENTS DE L'APPAREIL OU DU SYSTÈME AUQUEL IL EST RELIÉ, POUVANT SE TRADUIRE PAR UNE TENSION COMPOSÉE ENTRE LA MASSE ET LA PRISE DE TERRE. CELA PEUT PROVOQUER DES BLESSURES SÉRIEUSES OU FATALES SI LA MASSE ET LA PRISE DE TERRE SONT TOUCHÉES EN MÊME TEMPS.

### ATTENTION :

- APPARATET MÅ TILKOPLES JORDET STIKKONTAKT.
- APPARATEN SKALL ANSLUTAS TILL JORDAT UTTAG.
- LAITE ON LIITETTÄVÄ SUOJAKOSKETTIMILLA VARUSTETTUUN PISTORASIAAN.

## DÉCLARATION DE CONFORMITÉ

Nom du fabricant : BSS Audio  
Adresse du fabricant : 10653 South River Front Parkway  
Suite 300  
South Jordan, Utah 84095, ÉTATS-UNIS

déclare que le produit :

Nom du produit : BLU 103  
Remarque : Le nom du produit peut être suivi des lettres UE.

Option du produit : Aucune

est conforme aux spécifications suivantes :

Sécurité : CEI/IEC 60065:2001 + Amd 2

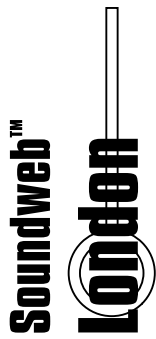
CEM : EN 55022:2010  
EN 55024:2010  
Partie 15 des FCC

Informations complémentaires :

Ce produit est conforme aux exigences suivantes :  
Directive sur la basse tension 2006/95/CE  
Directive 2004/108/CE  
Directive RoHS 2011/65/UE  
Directive DEEE 2002/96/CE

Ce produit appartenant à la catégorie Matériel audio professionnel, il n'est pas concerné par la directive 2005/32/CE ou par le règlement européen 1275/2008 du 17 décembre 2008.

Contact en Europe : votre revendeur BSS Audio local et le bureau d'assistance de :



---

## Table of Contents

<b>Regulatory Information</b> .....	<b>1</b>
<b>Important User Information</b> .....	<b>1</b>
<b>Mechanical Installation</b> .....	<b>1</b>
<b>Front Panel</b> .....	<b>2</b>
Analog Input/Output Channel Monitoring .....	2
Telephone Input/Output Channel Monitoring .....	2
Clip.....	2
Signal.....	2
48V (Input Channels Only) .....	2
OH (Telephone Channels Only) .....	2
Other Indicators .....	2
COM (Communications).....	2
STAT (Status) .....	2
ERR (Error) .....	2
PWR (Power).....	2
<b>Rear Panel</b> .....	<b>3</b>
AC Mains.....	3
Locate.....	3
RS232 .....	3
Ethernet.....	3
BLU link .....	3
GPIO Ports.....	3
VoIP Jack.....	3
Analogue Input/Output Connections .....	3
<b>Audio Cable Wiring</b> .....	<b>4</b>
Audio Input & Output Wiring Convention .....	4
<b>Control Inputs</b> .....	<b>5</b>
2-Wire Mode .....	5
3-Wire Mode .....	5
<b>Logic Outputs</b> .....	<b>6</b>
<b>Opto Output</b> .....	<b>6</b>
<b>Technical Specifications</b> .....	<b>7</b>

## Regulatory Information

An example of this equipment has been tested and found to comply with the following European and international standards for electromagnetic compatibility and electrical safety:

Radiated Emissions (EU):	EN55022:2010
Immunity (EU):	EN55024:2010
Electrical Safety (EU):	IEC60065-01 + AMD 2
Electrical Safety (USA):	UL60065-03



## Product Registration/Warranty

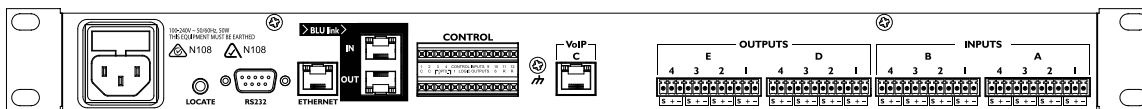
To register your product, please visit [http://bssaudio.com/en-US/support/warranty\\_registration](http://bssaudio.com/en-US/support/warranty_registration).

For warranty information, please visit [http://bssaudio.com/en-US/support/warranty\\_policy](http://bssaudio.com/en-US/support/warranty_policy).

## Important User Information

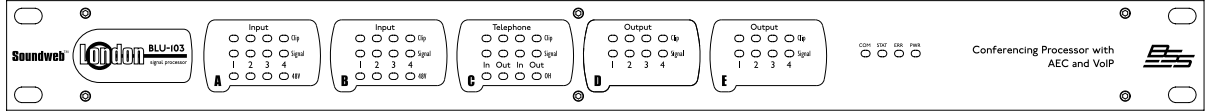
Do not remove covers. No user serviceable parts inside, refer servicing to qualified service personnel. For continued compliance with international EMC regulations, it is important that all cables be screened, and connected as follows: Audio cable screens to their BLU-Device connector ground. Control cable screens to the ground screws adjacent to the connector. Network cables should be of type Cat 5 or better, fitted with a clip-on ferrite sleeve (STEWART TYPE 28A2029-0A0) near the network socket end. This equipment must be earthed. It should not be necessary to remove any protective earth or signal cable shield connections to prevent ground loops. Any such disconnections are outside the recommended practice of BSS Audio, and will render the EMC or safety certificate void.

## Mechanical Installation



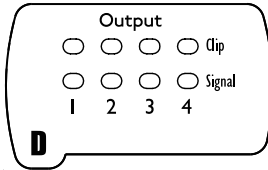
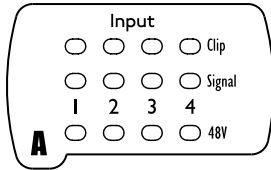
If the unit is likely to undergo extreme vibration through extensive road trucking and touring, the unit must be supported at the rear and/or sides to lessen the stress on the front mounting flange. Damage caused by insufficient support is not covered by the warranty. To prevent cosmetic damage to the front panel finish, use protective plastic cups under the rack mounting bolts.

## Front Panel



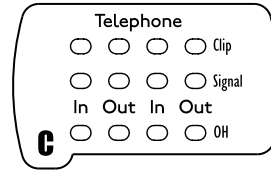
### Analog Input/Output Channel Monitoring

Each input/output channel has the following LED indicators:



### Telephone Input/Output Channel Monitoring

The Telephone channel has the following LED indicators:



#### Clip

Indicates clipping in the analogue domain for each input or output channel. The LED will illuminate at +18.5dB.

#### Signal

The Signal LED will illuminate for each input or output channel when the signal reaches or exceeds the signal threshold of -20dB.

#### 48V (Input Channels Only)

Illuminates to indicate +48V phantom power has been activated for the relevant input channel.

#### OH (Telephone Channels Only)

The Out OH LEDs will illuminate when the telephone is "off hook". The In LEDs are not utilized in the BLU-103.

### Other Indicators



#### COM (Communications)

The COM LED indicates Ethernet link status and network/control traffic and has the following states:

**OFF:** Indicates that there is no network/control communication and that no Ethernet cable connection is detected, or that the unit is still in the process of negotiating its IP address.

**SOLID GREEN:** Indicates that an Ethernet cable connection is detected and that the unit has established its IP address.

**SOLID YELLOW:** Indicates that an Ethernet cable connection is detected, but an IP address cannot be established in the BLU-103.

**FLASHING YELLOW:** Indicates that the device is communicating with another control device, either on the network, serial, or control ports.

#### STAT (Status)

The STAT LED turns green when a valid design file is loaded and running. The STAT LED turns yellow when the design is paused. The STAT LED turns red when the design is stopped.

#### ERR (Error)

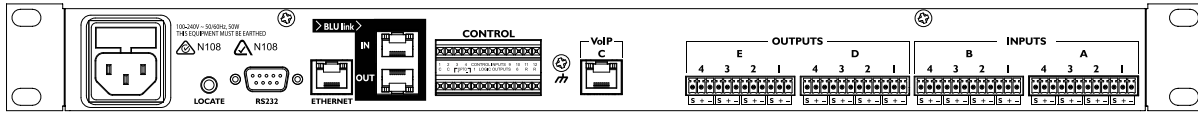
The ERR LED is normally off. It turns red in the case of a critical or fatal error.

#### PWR (Power)

The PWR LED turns blue when the device is powered on. It blinks during locate operations (both when pressing the locate button on the rear of the device and also when locating the device from within the software).



# Rear Panel



## AC Mains

AC Mains input to the universal switched-mode power supply, operates over a wide range of AC input voltages from 100V to 240V, 50/60Hz.

## Locate

Pressing the Locate switch on the rear of the unit will illuminate the PWR LED on the front and identify the device within Audio Architect. Similarly the switch will illuminate if the device is located from within Audio Architect.

## RS232

Serial port for connection of external control equipment.

## Ethernet

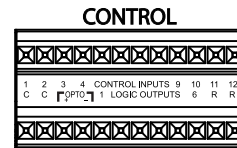
The main connection for the proprietary system control network, and for third-party Ethernet control.

## BLU link

The London BLU link is a point-to-point digital audio bus with 256 audio channels at 48K sample rate or 128 audio channels at 96K sample rate. The BLU-103 allows access to channels 1-48 of this bus, at 48K sample rates. The physical connection is made with Cat 5e cable from the OUT port of one device to the IN port of another device. The devices are connected in a daisy chain fashion continuing with the OUT port of one device connected to the IN port of the next device. Redundancy can be provided by completing the loop and connecting the OUT port from the last device to the IN port of the first device in the chain. All devices connected in the London BLU link chain must be configured for the same audio sample rate.

## GPIO Ports

The General Purpose Input and Output (GPIO) ports can be used to interact with external potentiometers, contact closures, LEDs, and relays. See *“Control Inputs” on page 5*, *“Logic Outputs” on page 6*, and *“Opto Output” on page 6* for further information on these ports.

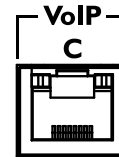


## VoIP Jack

The BLU-103 has two VoIP in/out (TX/RX) channels via a VoIP jack. This RJ-45 jack allows connection to a standard VoIP network.

The BLU-103 has AEC capabilities which enable it to cancel acoustic echo arising when sound from a loudspeaker enters a microphone in the same room in a conference application.

The BLU-103 contains dedicated AEC processing for up to 8 independent AEC algorithms. The AEC algorithm can be applied to signals coming from the local analog inputs or from the digital audio bus. 8 individual AEC references (one per algorithm) allow the user to provide a solution for multiple conferencing spaces using a single device

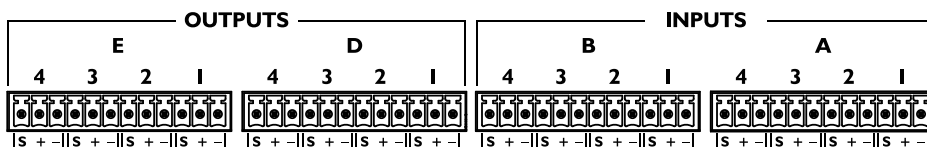


Automatic Gain Control (AGC) and Noise Cancellation (NC) are also provided per AEC algorithm. AGC ensures that microphone levels remain at an optimum level, and NC removes steady state noise (such as from a projector fan or air conditioning device) from the signal path.

Non-Linear Processing (NLP) dynamically adjusts to minimize echo caused by under or over-cancellation.

## Analogue Input/Output Connections

There are 8 analogue input connections and 8 analogue output connections. The analogue connections are balanced, on Phoenix/Combicon connectors.



## Audio Cable Wiring

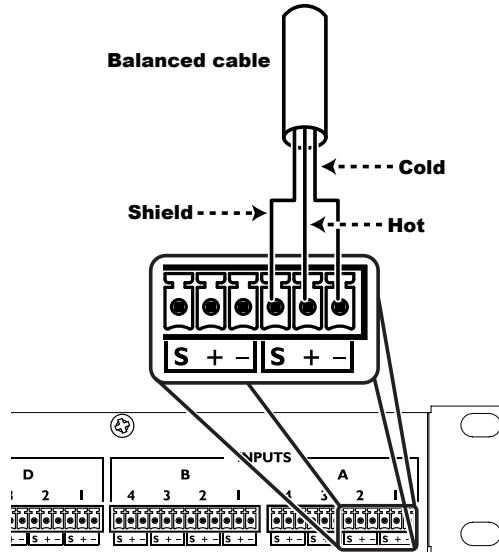
All audio and GPIO connections to the BLU-103 are via Klippon pluggable terminal block connectors (also known as BL, Phoenix or Combicon). The BLU-103 includes 3-way female Klippon connectors for individual channels.

### Audio Input & Output Wiring Convention

Soundweb products provide cable shielding 'back from the destination' to eliminate ground loop problems. This means that the shield (S) connection on an input is grounded, whereas the shield connection on an output is floating (although connected via an internal network to ground for EMC compliance).

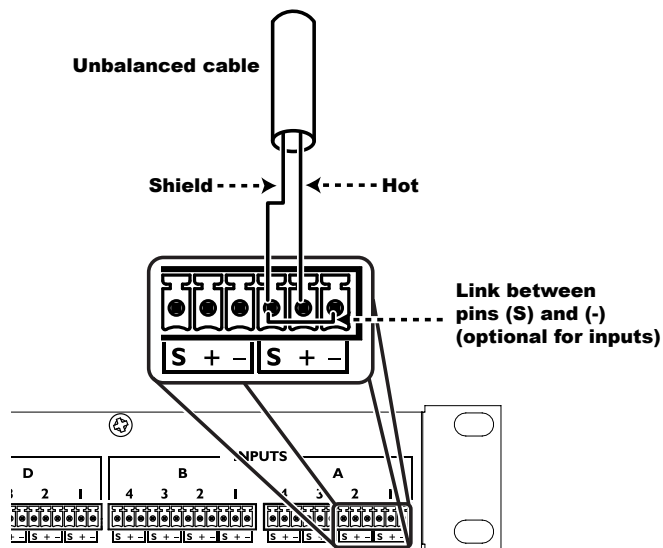
#### Balanced Wiring

The convention for balanced wiring (2-core plus shield) is shown here:



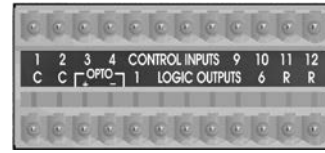
#### Unbalanced Wiring

The convention for unbalanced wiring to the inputs (1-core plus shield) is shown here:



## Control Inputs

There are 12 control inputs, also known as 'General Purpose Inputs' or 'GPI'. The control inputs are used to connect contact closures (for control of binary parameters, such as mutes), resistor ladders (for control of multistate parameters, such as source selectors) or potentiometers (for control of continuous parameters, such as volume faders). There are two common (ground) connections 'C' to the left of the 12 control inputs, and two software-assignable reference voltage outputs 'R' to the right. The control ports have two modes of operation: 2-wire and 3-wire.

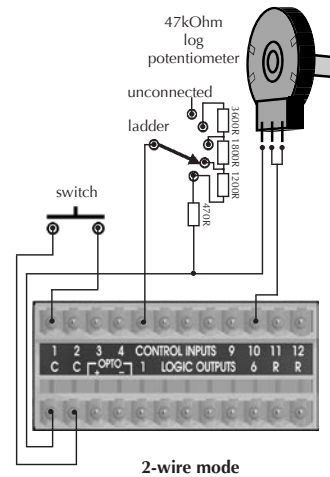


### 2-Wire Mode

In this mode, the 12 control inputs are internally 'pulled up' to +5V DC via a 4.7kOhm resistor. Therefore, no external voltage source is needed to create contact closure to ground for switches such as mute buttons or, resistance to ground (for other multi-state or continuous controls such as Parameter Presets or faders).

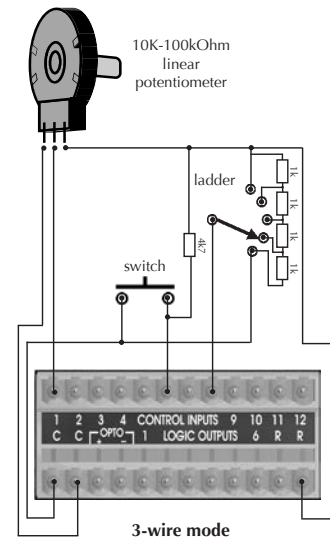
See the Soundweb London help for a table of resistor values for use with Parameter Presets or source selectors.

A 47kOhm-log potentiometer connected between a control input and common will allow parameters to be controlled linearly.



### 3-Wire Mode

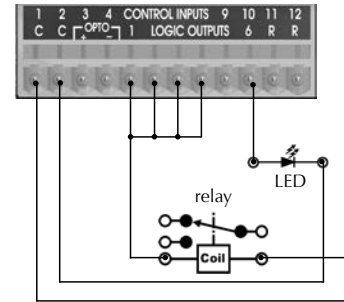
This mode allows the use of linear pots or faders for continuous controls. A pot would be wired as a potential divider with the top of the track connected to the reference output R, the wiper to a control input and the bottom of the track to a common C. High performance pots with track resistance between 10kOhms and 100kOhms are recommended.



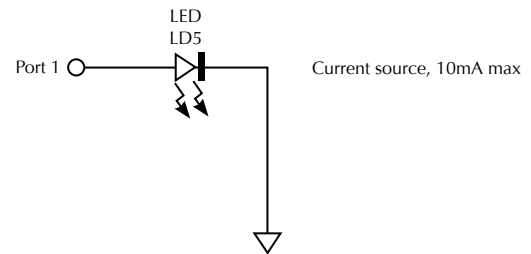
## Logic Outputs

There are 6 logic outputs, also known as “General Purpose Outputs” or “GPO”. They are used to control LED’s or relays. The logic output can source 10mA at 5V DC, or sink 60mA up to 50V DC.

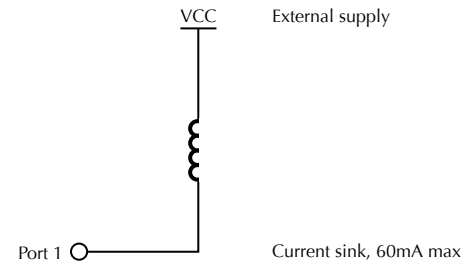
A high sensitivity relay (such as a reed relay) can be driven by connecting multiple logic outputs in parallel. In the diagram to the right, this arrangement will develop 4V across a 500-Ohm coil, providing that all four outputs are activated simultaneously.



When sourcing from the Logic Output, an LED connected between one output (Anode, A) and common (Cathode, K) will illuminate when the logic output is activated, without requiring any external current limiting resistor (the Soundweb London contains an internal 440 Ohm resistor).

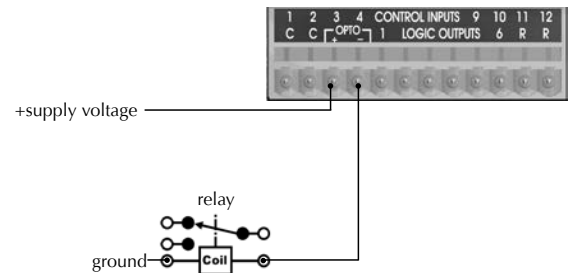


For higher current reed type relays you must use the Logic Output to sink current using an external power supply.

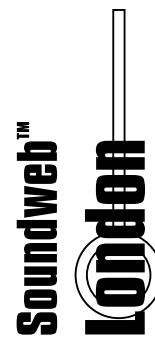


## Opto Output

In addition to the six standard logic outputs, there is an isolated output, which fails safe (open circuit) if the unit becomes faulty.



# Technical Specifications



## **FRONT PANEL LED INDICATORS**

<b>Input/Output:</b>	Signal Clip, Signal Present, 48V (input only), Off Hook (OH)
<b>Other:</b>	Control link status and activity for Ethernet and RS-232 connections (COM); Device configuration status (STAT); Error (ERR); Power/Locate (PWR)

## **ANALOGUE INPUTS**

<b>Connectors:</b>	10 electronically balanced on Phoenix/Combicon removable screw connectors
<b>Mic/Line Inputs:</b>	Nominal gain 0dB, electronically switchable up to +48dB, in +6dB steps
<b>Input impedance:</b>	3.0kOhm
<b>Maximum input level:</b>	+20dBu with 0dB input gain, (+8dBu with 12dB gain)
<b>Frequency Response:</b>	20Hz to 20kHz +/-0.5dB, balanced, 150 ohm
<b>Dynamic Range:</b>	111dB, 20Hz to 20kHz, A-weighted: 108dB unweighted
<b>CMRR:</b>	>75dB at 1kHz
<b>Equiv. Input Noise (EIN):</b>	<-125dBu typ. with 150 Ohms source
<b>Phantom power:</b>	48V nominal, selectable per input
<b>A/D Latency:</b>	37/Fs [0.77ms@48k]
<b>AEC:</b>	Up to 8 channels of AEC processing
<b>AEC Processing Latency:</b>	2385/Fs [49.69ms@48k]
<b>Tail Length:</b>	200 ms
<b>Convergence Rate:</b>	49 dB/s (Average convergence rate)

## **TELEPHONY**

<b>Supported Features:</b>	Two concurrent, independent calls Caller ID, hold capability, redial, 16-entry speed dial Adjustable auto-answer
----------------------------	--

## **VoIP**

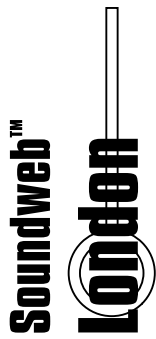
<b>Supported Features:</b>	SIP v2 (RFC 3261 and companion RFCs) SIP authentication Voice activity detection Dynamic jitter buffer Static DHCP IP address assignment
<b>Supported Codecs:</b>	G.711 $\mu$ -law, G.711A-law, G.722, G.729AB, DV14 HD, G.726 fixed payload, and DV14 Narrowband

## **ANALOGUE OUTPUTS**

<b>Connectors:</b>	8 electronically balanced on Phoenix/Combicon removable screw connectors
<b>Maximum Output Level:</b>	+19dBu
<b>Frequency Response:</b>	20Hz to 20kHz (+0.5/-1dB)
<b>THD:</b>	<0.01% (20Hz to 20kHz, +10dBu output)
<b>Dynamic Range:</b>	108dB typ. (22Hz to 22kHz unweighted)
<b>Output Impedance:</b>	40 Ohms balanced and 20 Ohms unbalanced
<b>Crosstalk:</b>	<-75dB
<b>D/A Latency:</b>	29/Fs [0.60ms@48k]

## **CONTROL PORTS**

<b>Inputs/Outputs:</b>	12 inputs and 6 outputs
<b>Control Input Voltage:</b>	0 to 4.5v
<b>Control Input Impedance:</b>	4.7kOhms to +5V (2-wire mode) >1MOhm (3-wire mode)
<b>Logic Output Voltage:</b>	0 or +5V unloaded
<b>Logic Output Impedance:</b>	440 Ohm
<b>Logic Output Current:</b>	10mA source, 60mA sink



---

#### **OPTO (WATCHDOG) OUTPUT**

<b>Connectors:</b>	Phoenix/Combicon connector for failsafe control
<b>Opto Output current:</b>	14mA maximum
<b>Withstanding voltage:</b>	80V maximum (Off)
<b>Series Impedance:</b>	220 Ohms (isolated)

#### **CONTROL NETWORK**

<b>Connectors:</b>	RJ45 Ethernet connector
<b>Maximum cable length:</b>	100m/300ft on Category 5 or better cable between device and Ethernet switch
<b>Maximum number of nodes:</b>	60

#### **BLU link AUDIO NETWORK**

<b>Connectors:</b>	2 x RJ45 Ethernet connectors
<b>Maximum cable length:</b>	100m/300ft on Category 5e or better cable between devices
<b>Latency:</b>	11/Fs [0.23ms@48k]
<b>Pass-Through Latency:</b>	4/Fs [0.08ms@48k]

#### **POWER AND DIMENSIONS**

<b>Mains Voltage:</b>	100-240V AC, 50/60Hz
<b>Power Consumption:</b>	<55VA
<b>BTU Rating:</b>	<188 BTU/hr
<b>Operating Temperature Range:</b>	5(41) to 35(95) degrees C(degrees F)
<b>Dimensions (HxWxD):</b>	1.75" (45mm)(1U) x 19" (483mm) x 12.5" (318mm)
<b>Weight:</b>	9.1 lbs / 4.1 kg

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.





BSS Audio is a registered trademark of Harman

© 2015 Harman

All rights reserved

Printed in Malaysia