



# BlueLine

## Digital

Quick Reference / Guía Rápida

Rev. 141001

**BlueLine Digital** is a distributed audio system based on audio streaming over Ethernet. Thus, it is possible to transmit multiple channels and control through a LAN with very low latency. Its broad scope allows from transmission a single audio channel from one point to another or multiple points, facility allowing more complex multichannel audio source selection, trigger control, alarm, etc.

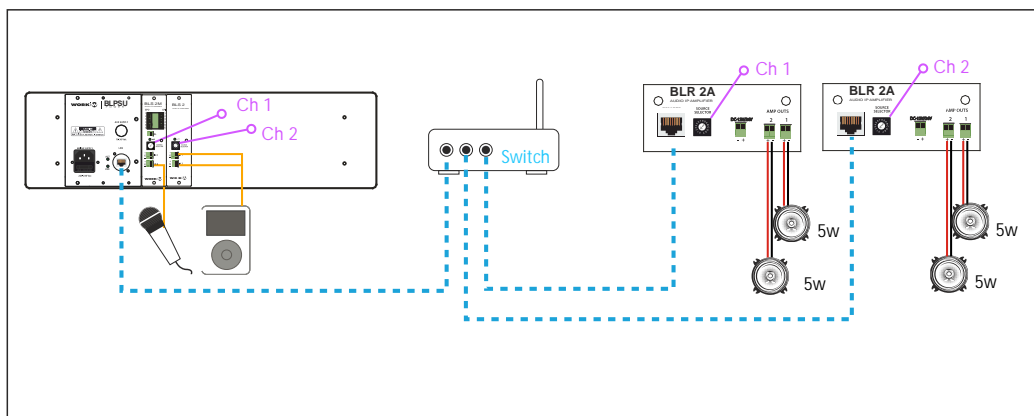
The audio distribution over IP networks is a very effective concept, rapid install and easy to design. Thanks to its Plug & Play, installers do not require advanced networking knowledge, just the elements are integrated into the common network and interact.

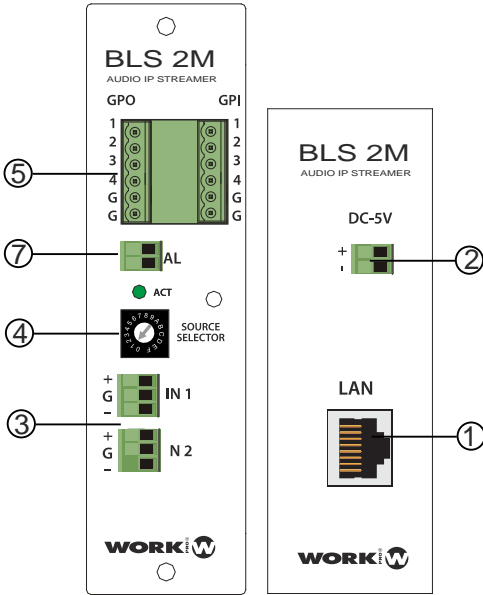
The technology of this system allows for both dedicated networks and in networks shared, in the first case be sent a large number of channels while in the second case will depend on the pre-assigned bandwidth the other devices connected to send a larger number of channels.

## FEATURES

- Coding PCM (low latency), ADPCM and MP3
- 16 channel PCM stereo audio (for consumption <10 Mbit)
- 32 channel ADPCM stereo audio (for consumption <10 Mbit)
- 64 channels MP3 stereo audio (for consumption <10 Mbit)
- Management control audio sources and output zones.
- GPIO Control
- Configuration via Webserver.
- Controlled by OSC commands
- Alarms

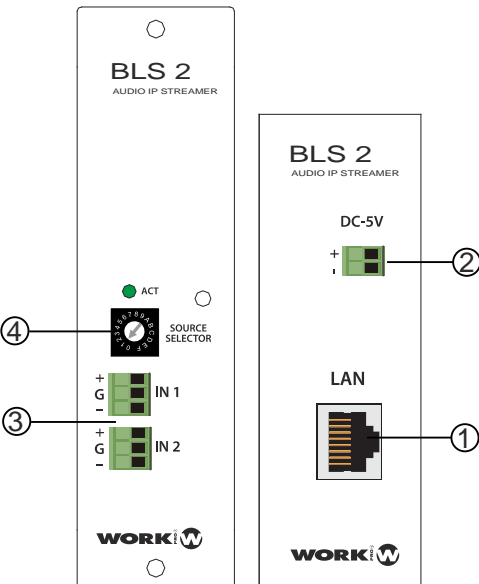
**Installation example:** 2 audio souces and 2 output zones.





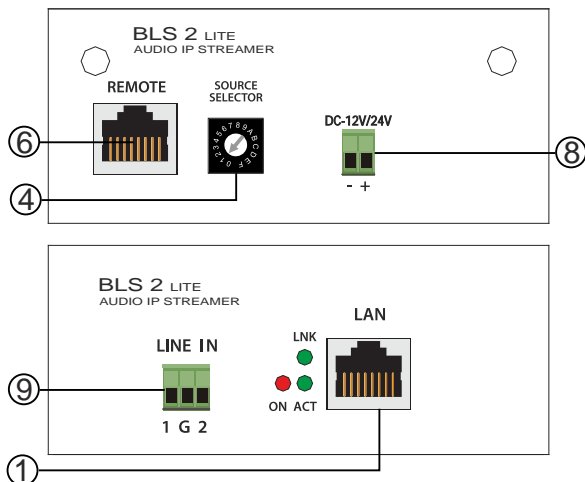
## BLS 2M

- 1 stereo channel ethernet streamer.
- 8 GPIO available to transmit its state over the network.
- One input is available to enter an alarm condition.
- One single module occupation in BLM modular central unit.
- Power supply: 5V DC (feed through BL PSU)



## BLS 2

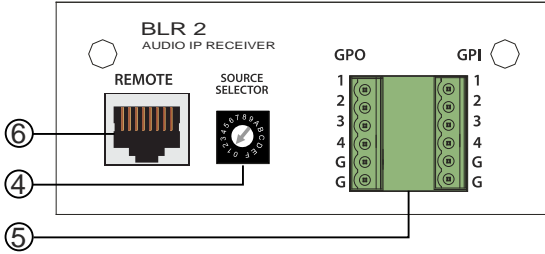
- 1 stereo channel ethernet streamer.
- One single module occupation in BLM modular central unit.
- Power supply: 5V DC (feed through BL PSU)



## BLS 2 LITE

- Independent unit which add 1 stereo unbalanced channel in the network.
- Can coexist with BLM unit, being another streamer of the same network
- Power supply: PoE and 12V/24V DC (feed through external power supply)

- 1. LAN connector:** Use a Cat5 cable to connect the device to the network. The modular devices (**BLS 2** & **BLS 2M**) will be connected through the switch placed inside the modular unit (**BL PSU**).
- 2. DC 5V supply:** Connect the adequate cable (taking into account the polarity) between each module and the main supply bank connection in **BL PSU**.
- 3. Input audio sources:** 1 stereo audio source.
- 4. Source selector:** Use this selector to "name" the audio sources into the network and selected it with the same number in the receiver.  
The selection can be made using this selector or through its webserver (**Consult INSTALLATION and webserver sections**).
- 5. GPIOs:** The device incorporates 4 GPI and 4 GPO which state will be reflected in the GPIOs placed in **BLR 2**. For example, closing GPI 1 in the **BLS 2M** will send its state to GPO 1 in **BLR 2** and vice versa.
- 6. Remote connection: NO FUNCTION**
- 7. Alarm:** These contacts are used for alarm purpose. Closing its contact causes that ALL receiver connect channel 1 at 100% of volume.
- 8. DC 12-24V supply:** Connect an adequate external supply to feed the device taking into account the correct polarity.  
**NOTE: This devices can be also feed through PoE**
- 9. LINE IN:** 2 unbalanced input for auxiliary audio sources.



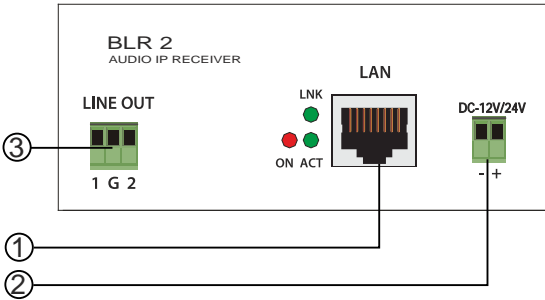
## BLR 2

- IP audio receiver.
- It select and decodes the chosen audio sourced sent through network, providing 1 stereo unbalanced output.
- Remote socket to connect local control BLC 1 (audio source selection, gain control and auxiliar local audio input)



**NOTE: This is a dedicated socket. Do not connect the device to the network using it**

- 8 GPIO available to transmit its state over the network.
- Power supply: PoE and 12V/24V DC (feed through external power supply)



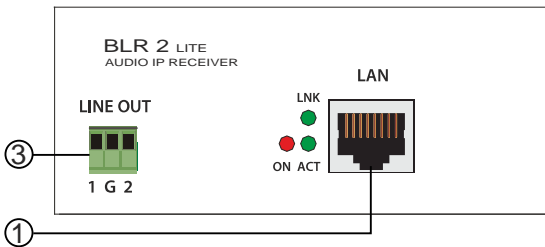
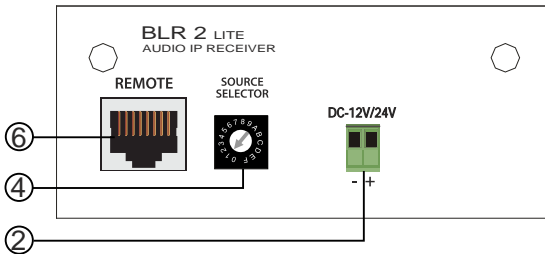
## BLR 2 LITE

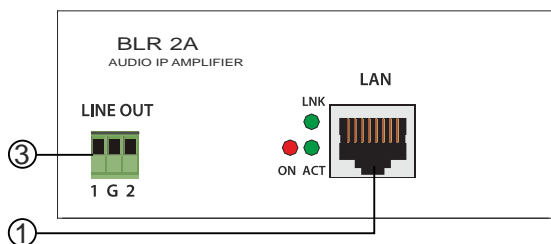
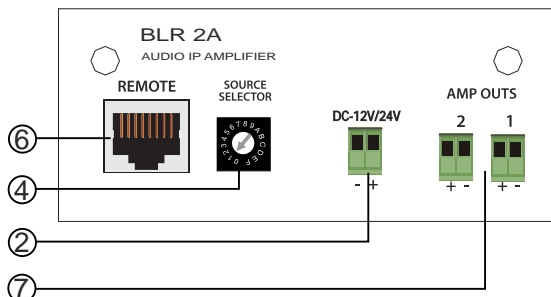
- IP audio receiver.
- It select and decodes the chosen audio sourced sent through network, providing an analog unbalanced output.
- Remote socket to connect local control (audio source selection and gain control)



**NOTE: This is a dedicated socket. Do not connect the device to the network using it**

- Power supply: PoE and 12V/24V DC (feed through external power supply)





## BLR 2A

- IP audio receiver.
- Built-in amplifier:
  - 2x 5W (connected by PoE)
  - 2x 15W (external power supply)
- It select and decodes the chosen audio sourced sent through network, providing an analog balanced output.
- Remote socket to connect local control (audio source selection and gain control)



**NOTE: This is a dedicated socket. Do not connect the device to the network using it**

- Power supply: PoE and 12V/24V DC (feed through external power supply)

**1. LAN connector:** Use a Cat5 cable to connect the device to the network.

**2. DC 12-24V supply:** Connect an adequate external supply to feed the device taking into account the correct polarity.

**NOTE: This devices can be also feed through PoE**

**3. LINE OUT:** 2 unbalanced outputs (0 dB). Connect them to an adequate amplifier input. Check the **Installation** section in this Quick reference.

**4. Source selector:** Use this switch to select the streamer connected to the network which incorporates the audio source that you want to play on the receiver, by selecting the same number in both devices.  
The selection can be made using this selector or through its webserver (**Consult Webserver section**).

**5. GPIOs:** The device incorporate 4 GPI and 4 GPO which state will be reflected in the GPIOs placed in **BLS 2M**. For example, closing GPI 1 in the **BLS 2M** will send its state to GPO 1 in **BLR 2** and viceverse.

**6. Remote connection:** Socket used for local wallmount controller (**BLC 1**).

**BLC 1** includes a input audio source selection, volume control and 3.5 mm input connection for auxiliar audio source.



**NOTE: This is a dedicated socket. Do not connect the device to the network using it**

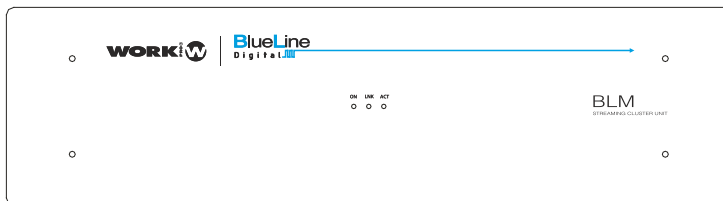


**7. Amplified outputs:** These outputs provide amplified level in order to connect a loudspeaker system directly. Depending on the supplied method, the output is:

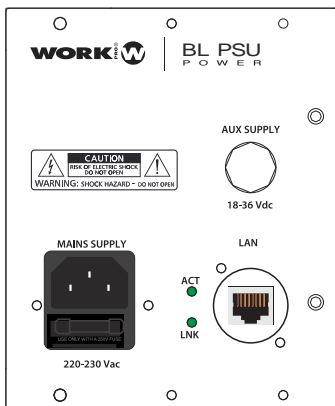
2x 5W @ 4 (Using PoE)

2x 15W @ 4 (Using 12-24V external supply)

## BLM

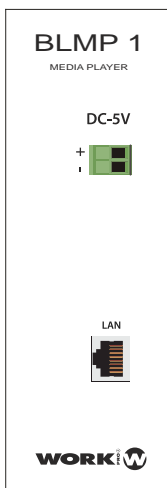
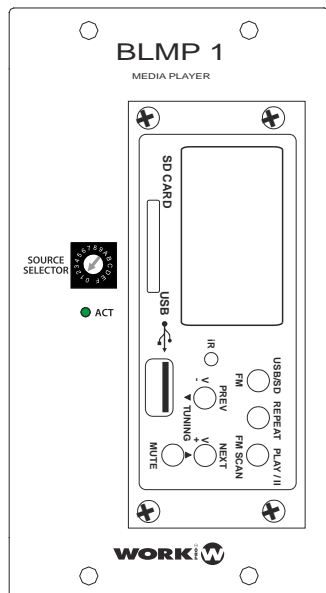


- Modular central unit.
- 11 module units occupation.  
(7 positions for free occupation).
- 3 HU rack chassis.



## BL PSU

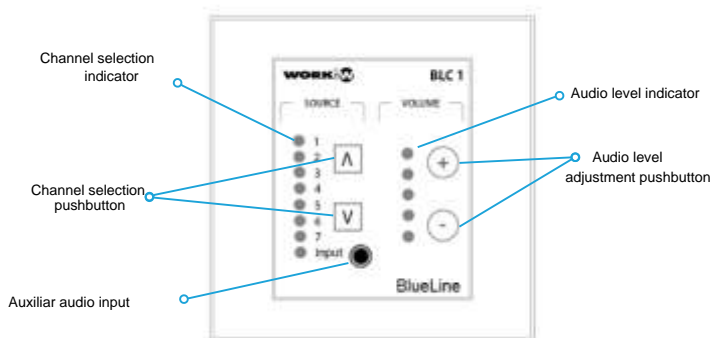
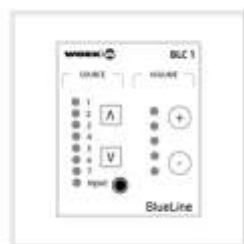
- Main supply unit of BLM system.
- 18-36V Auxiliary supply input.
- It feeds all modular units connected.
- RJ 45 socket to Ethernet connection
- Three module occupation in BLM modular central unit.



## BLMP 1

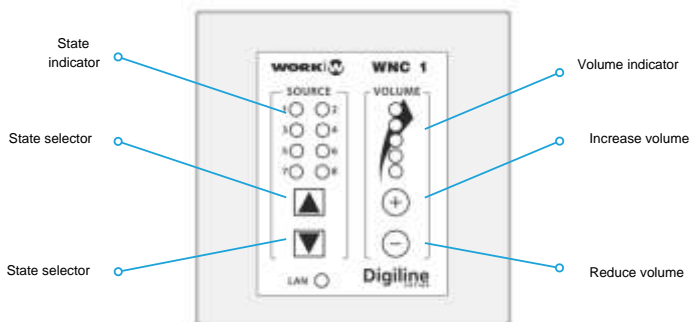
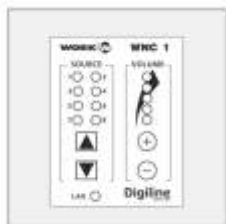
- MP3 player (USB/SD) with built-in FM radio.
- Balanced output.
- Must be connected to a sender (BLS 2 or BLS 2M) in order to send the audio source through LAN.
- Two module occupation in BLM modular central unit.
- Power supply: 5V DC (feed through BL PSU)
- USB/SD formatted in FAT 32. Up to 32 GB.

## BLC 1



- **BLC 1** is a zone control for the receivers.
- It can control the audio input source
- It can control the audio level
- It adds an auxiliary input through minijack
- It has a Remote port to connect a receiver
- The maximum distance between **BLC 1** and the **BLR** must be 5 m

## WNC 1



- **WNC 1** is a zone control for the receivers.
- It can control the audio input source
- It can control the audio level
- It is an IP device, therefore, it must be connected to LAN directly.
- It is necessary to be configured through WorkCAD software in order to assign the receiver to control.
- Can be installed in any point, independently of the receiver position.



## PREVIOUS NOTE

**BlueLine** system sends 1 stereo audio source from a streamer (sender) to one or more receivers. The system requires "to name" each streamer to select at each receiver or receivers and extract the desired stereo source. This process is performed in 2 ways:

- **Manually:** Assigning one of the 16 positions with the selector and choosing the same position in the desired receiver or receivers. This process is easier and faster in systems with up to 16 streamers.
- **Software:** Accessing the webserver of streamers and receivers, it is possible to assign the channel, apart from other advanced features. This method is recommended for large installations with a greater number of streamers.

## GENERAL

1. Using a cat5 cable, connect the device (sender or receiver) to the shared network (through hub, switch or wallmount socket).
2. Feed each device with the adequate main supply. Check each particular features to select the adequate one.
3. The LEDs will lit according to their state: Power LED will lit when the unit will be powered, Link LED will be lit when the device is connected to the LAN and Act LED will flick sending & receiving information packages.

## SENDERs

1. By default, the streamers are configurated to stream the audio sources in PCM format (The most common and with a low latency time), Thus, in most of the facilities is not required to perform any previous configuration (which, in this case, was done through the webserver).
2. With the source selector, select one of the 16 positions in order to identify it in the network (If the number of sender is over 16, use the webserver to setup it).
3. Connect the adequate audio source.

## RECEIVERS

1. With the source selector, select one of the 16 positions. This position must be the same position set in the streamer from which we want to extract the audio source. (If the number of sender is over 16, use the webserver to setup it).

**NOTE:** Several receivers can choose the same streamer.

2. If you need a **BLC 1**, connect it in the adequate socket (marked as REMOTE) in order to control the source and volume locally.

**NOTE 1:** **BLR 2 / BLR 2 LITE** and **BLR 2A** have preamp output. Therefore, their output must be connected to unbalanced inputs in the amplifier.

**NOTE 2:** **BLR 2A** incorporates amplified outputs, therefore, connect the adequate loudspeaker load according to the main supply: 2x5W (PoE) or 2x15W (external main supply).

## GPIO

**BLS 2M** and **BLR 2** incorporate 4 GPI and 4 GPO each one. Therefore, the system can be considered as bidirectional. When GPI contact is closed due to an external action, this state will be reflected in the corresponding GPO in the other side.

For example, closing GPI number 1 in a **BLR 2** ( the GPO number 1 in **BLS 2M** will receive the state and will close its contact. The system works in the same way in the other sense.

## WEBSERVER

For advanced setup you need to access to webser on each device. Inside this interface it is possible to find all information about connection device and to set some features like name, audio source, sending codification, etc.

**WORKiW** BLS-2M AUDIO STREAMING

**CURRENT STATUS**

- Automatic IP Address (DHCP/ZeroConf): 192.168.2.20
- Automatic Subnet Mask (DHCP/ZeroConf): 255.255.0.0
- Automatic MAC: 12:12:20:20:0:0
- Manual IP Address: 192.168.2.20
- Manual Subnet Mask: 255.0.0.0
- MAC Address: 08:2F:40:00:02:18
- PortAudio Version: v 1.35.1

**NETWORK SETTINGS**

- Device Name: BLS2M
- IP Address: 192.168.2.20
- Subnet Mask: 255.255.0.0

**BLUELINE CONFIGURATION**

- Source selection: ☐ Powerline ☒ Source from file (BLS 1)
- Format: ☐ PCM ☒ AAC
- Alarm: ☐ No action ☒ Source change

**SAVE SETTINGS**

**BLR 2 AUDIO STREAMING**

**CURRENT STATUS**

- Automatic IP Address (DHCP/ZeroConf): 192.168.2.21
- Automatic Subnet Mask (DHCP/ZeroConf): 255.255.0.0
- Automatic MAC: 12:12:20:20:0:1
- Manual IP Address: 192.168.2.21
- Manual Subnet Mask: 255.0.0.0
- MAC Address: 08:2F:40:00:02:19
- PortAudio Version: v 1.35.1

**NETWORK SETTINGS**

- Device Name: BLR2
- IP Address: 192.168.2.21
- Subnet Mask: 255.255.0.0

**BLUELINE CONFIGURATION**

- Source selection: ☐ Powerline ☒ Source from file (BLR 1)
- Format: ☐ PCM ☒ AAC
- Alarm: ☐ No action ☒ Source change

**SAVE SETTINGS**

1. In your browse type the next URL according to the device:

**bls\_2.local/**

**bls\_2m.local/**

**bls\_2\_lite.local/**

**blr\_2.local/**

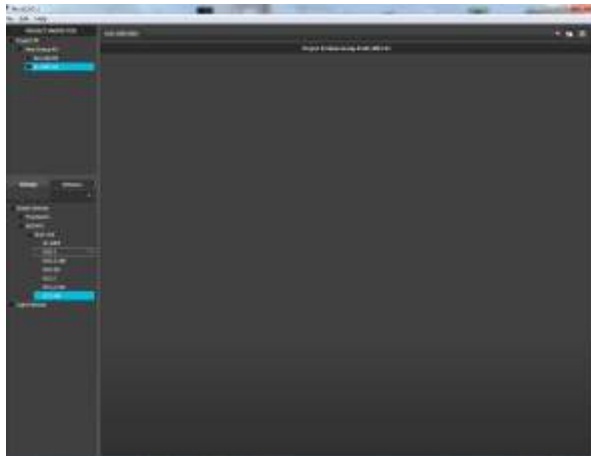
**blr\_2\_lite.local/**

**blr\_2a.local/**

**NOTE:** Take into account that these are the default names and must be typed the first time. If you change the name, you must write the new name in order to access.

(xxxxxxx.local/).

**NOTE:** In case your PC was in the same range, it is also possible to access using the IP address.



## WORKCAD

Download this software for the next link in our website:  
link

<http://www.equipson.es/prodDetail.asp?idproducto=1851>

With this software it is possible to check the connection state of each device (IPs, SubNet, etc.), to change the IP and UPDATE the firmware.

## FINAL CONSIDERATIONS

- Multiple receivers can choose the same channel reception.
- Channel selection is done by default since SOURCE SELECTOR switch.  
The device will expect OSC commands or from the remote **BLC 1** for a possible change of source and it will make the change according to the last order.
- If 2 streamers are configured on the same channel, the output will be inaudible. Check the installation and correct the selection.
- REMOTE connection is exclusively for connecting the wallmount control **BLC 1**. Do not connect this jack to the LAN.
- For connection to the webserver of each unit, we recommend using Google Chrome.
- At the time of naming the units in the webserver, it is advisable to perform this process individually in order to locate each device easily.
- The state of the GPI / GPO will be reflected in both directions. Activation of GPI 1 in the **BLS 2M**, will make **ALL** GPO 1 receptors remain activated. This activation status will remain as long as the activation of the GPI.
- Connection ALARM in **BLS 2M**, when their contacts are closed, ALL GPO 1 in all receivers will close too.
- Be aware of the minimum load @ 4 at amplified outputs in **BLR 2A**.

**DISTRIBUIDOR EM PORTUGAL**



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