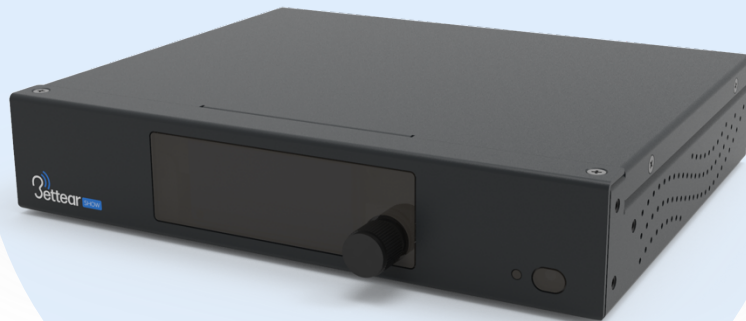




Bettear **SHOW** | User Manual

Real-time audio sampling and broadcast system

www.bettear.com



Highlights:

- Low Latency Performance
- Personalized Sound
- Automatic Wi-Fi Connection
- Dynamic Visual and Textual Contents
- Up to 1,000 Users
- Live Transcribing
- Automatic Gain Control (AGC)

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OVERVIEW

The B-SHOW streamer allows you to efficiently stream real-time audio over Wi-Fi, providing a personalized listening experience for the users. Through the free Bettear app, users can connect and enjoy live audio content customized to their preferences, delivered through their earphones, cochlear implants, hearing aids, or induction loop receiver. The B-SHOW streamer combines state-of-the-art technology with user-friendly design, making it a top-of-the-line product that's easy for anyone to operate.

The app enables you to easily customize audio on-the-fly and offers an optional sound calibration process for even better audio quality. With easy configuration through the web management dashboard, you can upload transcriptions in real-time, add event descriptions with images and text, and customize the app to your liking, making it a perfect fit for your users' needs.



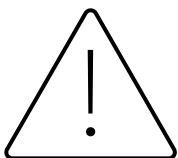
SAFETY PRECAUTIONS

HEARING SAFETY

This product is designed to amplify audio to a high-volume level which could potentially cause hearing damage if used improperly. To protect your hearing make sure the volume is turned down before putting on the headset, then adjust the volume up to the minimum setting required to hear clearly. Do not allow children or other unauthorized individuals to have access to this product without supervision.

MEDICAL DEVICE SAFETY

Before using the B-SHOW streamer with an implantable or other medical device, consult your physician or implant manufacturer or other medical device manufacturer. Always make sure you are using this product in accordance with the safety guidelines established by your physician or the implantable device manufacturer.



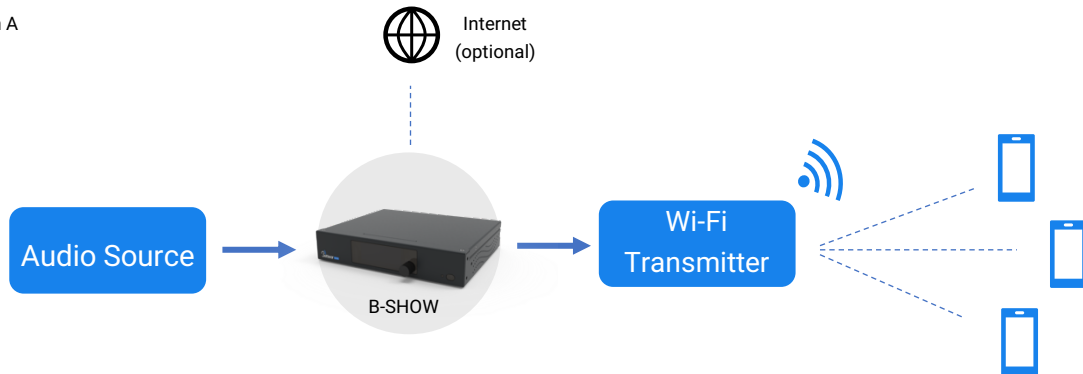
Warning

Always observe standard safety precautions during installation, operation, and maintenance of this product. Only qualified and authorized service personnel should carry out adjustment, maintenance, or repairs to this product. No installation, adjustment, maintenance, or repairs should be performed by either the operator or the user.

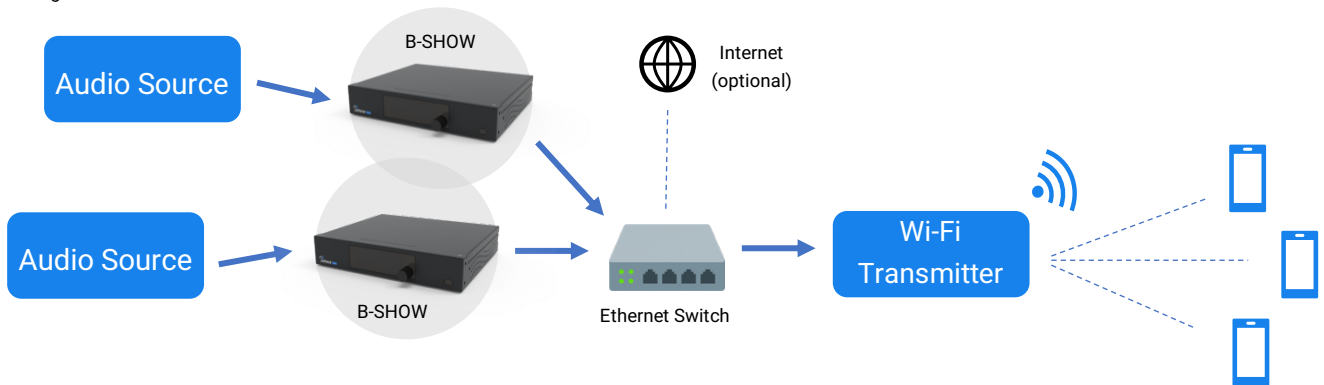
Respectez toujours les standards de sécurité durant l'installation, l'opération et la maintenance de ce produit. Seul le personnel de service qualifié et autorisé devrait effectuer l'ajustage, la maintenance ou les réparations de ce produit. Aucune opération d'installation, d'ajustage, de maintenance ou de réparation ne devrait être effectuée par un opérateur ou l'utilisateur.

APPLICATION TOPOLOGY

Configuration A



Configuration B



Internet access is required for firmware updating and cloud services.

Internet connection can be either wired or wireless.

- Wired (Wi-Fi) based internet access requires a designated USB to Wi-Fi dongle.
- Wired internet connection requires a designated USB to Ethernet adapter or using a Switch (see "configuration B" figure above).

*Use VLAN to prevent end-users accessing the internet through the accessibility network when using configuration B.

* Internet access can be tested by clicking "TEST" on the B-SHOW menu.

A single network may contain multiple B-SHOW units connected simultaneously as independent broadcasters ("rooms").

An extension device (B-EX4) can be connected to the B-SHOW system providing an additional 2 stereo/4 mono inputs as independent broadcasters ("rooms").

***A unique address identifier is required for each broadcast channel ("room") on the same network (Address range 1-250, can be configured via the web management interface)**

COMPONENTS

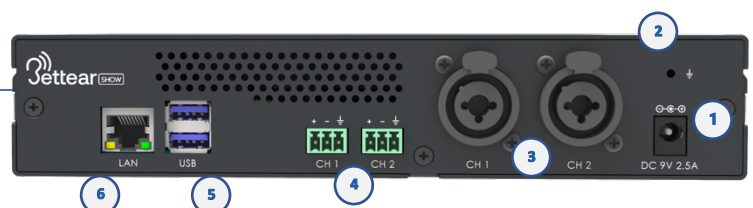
FRONT PANEL

1. Power ON/OFF Button
2. Blue POWER-ON LED Indicator
3. Clickable Rotary Menu Button
4. Display



BACK PANEL

1. DC Power Input
2. Ground Screw
3. Two Analog Inputs: Combo Jack (XLR+PL ¼")
 - Note: XLR Jack – Balanced | PL Jack – Unbalanced
 - Configuration: 1 Stereo/2 Mono
4. Terminal Block Inputs (Balanced)
5. 2x USB 3.0 Ports
6. Gigabit Ethernet



Note: inputs 3 and 4 are wired in parallel

B-SHOW UPDATES

Firmware updates are downloaded and automatically installed every time the B-SHOW is turned on if it is connected to the internet. A text message will appear on the B-SHOW's display during updates.

*Do not turn off the B-SHOW while updating.

After a successful update the B-SHOW will restart automatically.

Internet access can be verified by clicking "TEST" in the B-SHOW menu.

***B-SHOW firmware updating requires port 123 (TCP/UDP) on the connected network to be enabled.**

1. **CONNECT TO AUDIO**

Connect the desired audio source to one of the inputs in the B-SHOW streamer's rear panel.

Use the combo XLR and PL inputs or the terminal inputs.

*XLR and terminal are both balanced inputs | PL input is unbalanced.

2. **CONNECT TO NETWORK**

Use an Ethernet cable to connect the B-SHOW to the local area network (LAN).

Make sure your network is properly configured (see "Network Configuration" section on page 8).

*Enable DHCP setting from the B-SHOW menu if no other DHCP server is running on your network.

3. **PLUG IN THE POWER CABLE**

A blue power LED on the front panel indicates that the B-SHOW is turned on. After a few seconds an "initializing" message will appear on the display, followed by the Betttear logo. Finally, the display will turn black indicating that the system is ready for use.

Pressing the clickable rotary menu button for 3 seconds will activate the B-SHOW display. Use the button to control the device settings.

*The display turns off automatically after 20 seconds if no user engagement was detected.

*In case of power outage, the B-SHOW will automatically turn on once the power is back

*To manually power off the B-SHOW use the power button on the front panel.

*If the system does not respond, press the power button for 10 seconds to force power off.

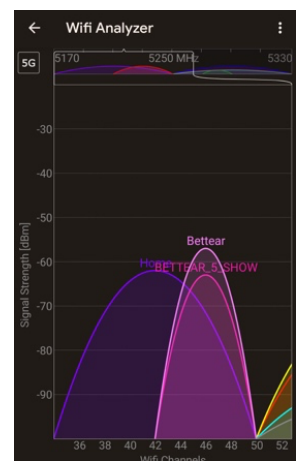
4. **MANAGEMENT DASHBOARD**

For advanced settings enter the local management dashboard or the cloud-based dashboard at cloud.betttear.com (see the "Management Dashboard Guide" for more details).

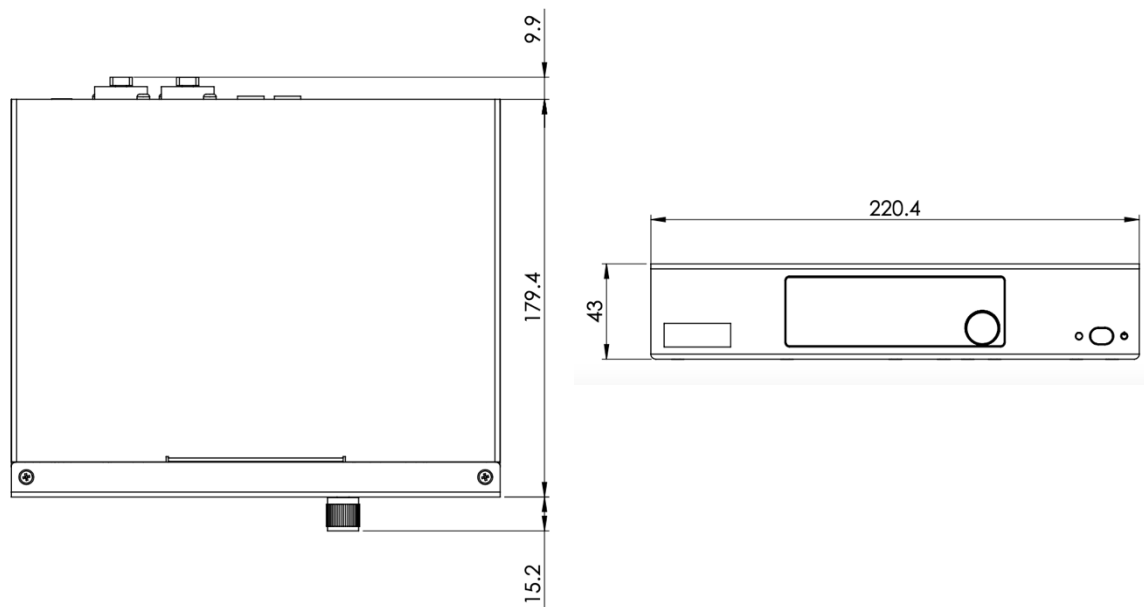
BETTEAR SHOW – SERVER SPECIFICATIONS	
IP Address	DHCP, Reserved
Users Per Unit	Up to 1,000
Prioritization	QoS
Bandwidth Per User	250 kbps
Latency	40ms - 110ms * May vary with network and mobile device
Processor	Quad Core Cortex-A55 (ARM v8.2-A) 64-bit @1.5GHz
Memory	4GB
App Support	iOS/Android
Offline Management Panel	Yes
Cloud Management	Yes (if connected to internet)
Content Management System (Cloud)	Yes (if connected to internet)
Audio Input Channels	1 Stereo/2 Mono Note: mix-down (sum) configuration is available on “stereo” mode (controlled via B-SHOW device menu).
Maximum Input Voltage	2.1Vrms (4.2Vrms for balanced input)
ADC Signal-to-Noise Ratio	110dB
DAC Signal-to-Noise ratio	112dB
ADC THD+N	-90dB
DAC THD+N	-93dB
Frequency Response	10Hz-22kHz
Input Gain	-12dB to 32dB
Automatic Gain Control (AGC)	Yes
Audio Filter	HPF and LPF
Sample Rate	48kHz
Bit Depth	32 bits
Rackmount 19” Compatible	Yes
Power Supply	9 VDC (Positive polarity), 2.5A Use AC/DC adapter which is safety approved according to IEC/EN 60950-1 or IEC/EN 62368-1 with rated voltage of 9Vdc and which certified as Limited Power Source (LPS). Usage d'adaptateur AC/DC (courant alternatif/courant continu) avec sécurité approuvé par IEC/EN 60 ou IEC/EN 62368-1 , avec une tension nominale de 9Vdc et certifiée comme source d'alimentation limitée (LPS).
Operating Temperature	0 °C – 55 °C
Regulatory	FCC, CE, cUL

NETWORK CONFIGURATION			
Wi-Fi Signal Strength	RSSI > -70dBm		
WMM	Enabled		
Multicast to Unicast	Enabled (Required)		
Client Isolation	Enabled		
QoS	Enabled		
mDNS	Enabled (service: _bettear_stream._tcp)		
Multicast Address	239.238.237.0/24		
Port	5000-6000 (UDP)		
Bandwidth Limit	Download: 6Mb/s Upload: 1Mb/s (per client)		
Wi-Fi Channel Width	2.4GHz: 20MHz 5GHz: 40MHz / 80MHz Note: use UNII-1 Wi-Fi channels only *Not all edge devices support other channels		
Minimum Bitrate	12Mb/s		
SSID Configuration for Auto Connection			
SSID	Security Type	Radio	Hidden
BETTEAR	Open	2.4GHz	Yes
BETTEAR_5	Open	5GHz	Yes
*It is possible to set another SSID setting. (In this case, end-users must manually connect to the Wi-Fi network).			

- **Do not use range extenders, mesh networks, or multi-hop networks. Doing so may increase latency, as well as cause interruptions and/or audio drops.**
- **Multicast to Unicast must be supported by the network components.**
- Firmware updating requires port 123 (TCP/UDP) of the network to be enabled.
- To avoid audio drops, manual Wi-Fi channel settings configuration is recommended. (Use a Wi-Fi signal analyzer to detect and select a channel to use in a less congested frequency range).

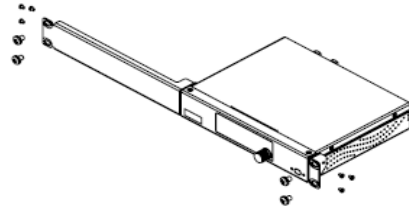
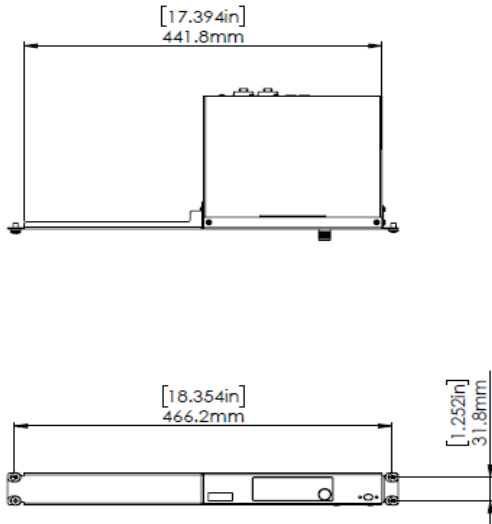


ACCESSORIES / ADD-ONS	
Rack Mounting Kit (1U Expander)	Not included
Two Units Mounting kit (1U Adaptor)	Not included
B-LITE (Personal Pocket Receiver)	Supported (not included)
B-EX4 (Expansion of a single B-SHOW streamer to 4 mono/2 stereo channels)	Supported (not included)
USB Wi-Fi dongle (Enables firmware updating over a Wi-Fi network)	Supported (not included)
USB to Ethernet adaptor (An additional Ethernet port for internet access and firmware updates)	Supported (not included)

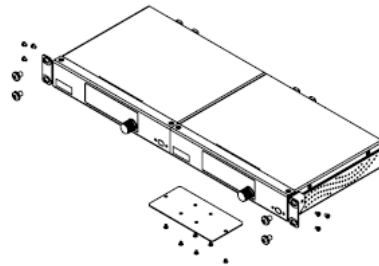
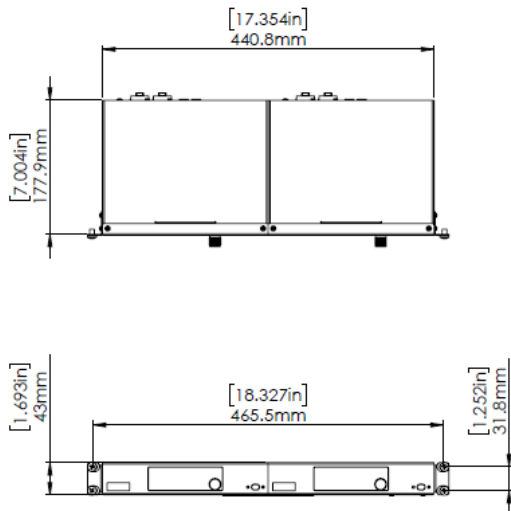
PHYSICAL	
Weight	1.3kg (2.86 lbs) unit weight 1.7 kg (3.74 lbs) package weight
Dimensions (H x W x D)	43mm x 220.4mm x 179.4mm
 <p>The technical drawing shows two views of the device. The left view is a perspective view showing the front and side. Dimensions indicated are 9.9mm for the top height, 179.4mm for the front width, and 15.2mm for the bottom depth. The right view is a top-down view showing the length of 220.4mm and the height of 43mm. The top-down view also shows the layout of various ports and components on the front panel.</p>	

RACK MOUNT INSTALLATION

One device



Two devices



*Maximum installation height: 200cm (Hauteur maximale d'installation 200cm).

TIPS

To avoid human errors, we suggest to directly connect the B-SHOW inputs to a stable source without sensitive controls like an audio processor output, a parallel input of the main loudspeakers' amplifier and alike, thus ensuring that sound outputs simultaneously from the venue's loudspeakers and from the B-SHOW system.

It is recommended to use a balanced cable to connect the audio source and the B-SHOW streamer (especially for long distance connection).

A tip for achieving optimal input level:

1. Disable AGC.
2. Set the B-SHOW channels' level to 0-15dB.
3. After setup, play music from the venue's loudspeakers. Adjust the volume to the level of typical use.
4. Adjust the output level of the audio source (sound console, digital processor etc.) until the signal meters on the B-SHOW display will be in proximity to the vertical black line shown on the dotted meters area.
5. Re-enable AGC.

TROUBLESHOOTING

The Bettear app installed on a smartphone is unable to find and connect to a B-SHOW device:

- Manually connect to the desired Wi-Fi network. Verify that the device is successfully connected. If the connection failed, recheck network configuration (page 8).
- Enter the cloud-based local management dashboard and verify that the B-SHOW streams are enabled.

The B-SHOW device is deactivated:

- In this case, the B-SHOW device is locked.
- Contact the device provider to activate it.

Poor audio quality: interruptions, audio cuts out, distorted sound, high latency, or background noise:

- Check the sound source for noise, distortion, or inappropriate volume level.
(see "TIPS" in page 11).
- Try using balanced inputs to get clearer sound and to avoid electrical interferences.
- Recheck the network configuration (page 8) and use the Wi-Fi analyzer to select the best channel to use in your space.
- If using stereo audio, verify that two input cables (not only one) are connected to the input channels of the B-SHOW.



WARRANTY

Please visit www.bettgear.com/support/warranty for warranty and service information.

WARNING: Electrical Shock Hazard. No user serviceable parts inside. To reduce the risk of electrical shock, do not remove or open the cover. Please contact Bettgear for assistance.

PRIVACY POLICY

Please visit www.bettgear.com/support/privacy-policy for warranty and service information.

SUPPORT

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