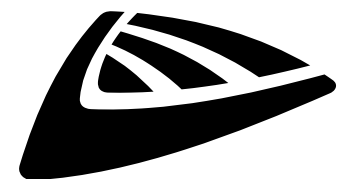


# amp 200.4



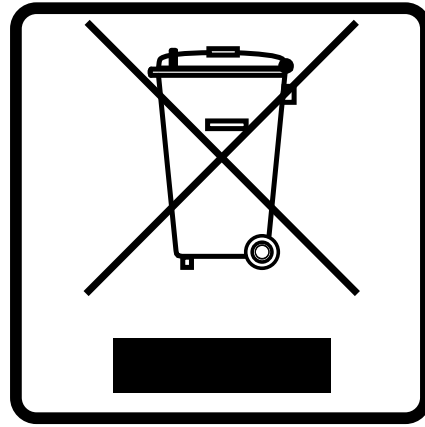
## ENGLISH Operation Manual

Other languages can be downloaded from:  
[WWW.JB-SYSTEMS.EU](http://WWW.JB-SYSTEMS.EU)



*Version: 1.0*

**JBSYSTEMS**



**EN - DISPOSAL OF THE DEVICE**

Dispose of the unit and used batteries in an environment friendly manner according to your country regulations.

**FR - DÉCLASSER L'APPAREIL**

Débarrassez-vous de l'appareil et des piles usagées de manière écologique Conformément aux dispositions légales de votre pays.

**NL - VERWIJDEREN VAN HET APPARAAT**

Verwijder het toestel en de gebruikte batterijen op een milieuvriendelijke manier conform de in uw land geldende voorschriften.

**DU - ENTSORGUNG DES GERÄTS**

Entsorgen Sie das Gerät und die Batterien auf umweltfreundliche Art und Weise gemäß den Vorschriften Ihres Landes.

**ES - DESHACERSE DEL APARATO**

Reciclar el aparato y pilas usadas de forma ecologica conforme a las disposiciones legales de su país.

**PT - COMO DESFAZER-SE DA UNIDADE**

Tente reciclar a unidade e as pilhas usadas respeitando o ambiente e em conformidade com as normas vigentes no seu país.

# OPERATION MANUAL

Thank you for buying this JB Systems® product. To take full advantage of all possibilities, please read these operating instructions very carefully.

## FEATURES

- Professional 4-channel power amplifier in an extremely compact 19" 1U-housing (H: 44mm)
- The unit houses 2 separate class-D amplifiers that can be configured independently to obtain the following combinations:
  - Both amps in stereo mode: 4x 200Wrms @ 4Ω (4x 100Wrms @ 8Ω)
  - Both amps in mono mode: 4x 200Wrms @ 4Ω (4x 100Wrms @ 8Ω)
  - Both amps in Bridge mode: 2x 400Wrms @ 8Ω
  - 3 Channel mode (2 satellites + sub): 2x 200Wrms @ 4Ω (or 2x 100Wrms @ 8Ω) + 1x 400Wrms @ 8Ω
- 120Hz High Pass Filter on/off switch for satellite speakers
- 120Hz Low Pass Filter on/off switch for subwoofer
- DC fault + high temperature + overload and short circuit protections
- A plastic cover (included) can be installed to prevent access to the level knobs
- Balanced XLR inputs.
- Speakon® compatible outputs

## BEFORE USE

- Before you start using this unit, please check if there's no transportation damage. Should there be any, do not use the device and consult your dealer first.
- **Important:** This device left our factory in perfect condition and well packaged. It is absolutely necessary for the user to strictly follow the safety instructions and warnings in this user manual. Any damage caused by mishandling is not subject to warranty. The dealer will not accept responsibility for any resulting defects or problems caused by disregarding this user manual.
- Keep this booklet in a safe place for future consultation. If you sell the fixture, be sure to add this user manual.
- To protect the environment, please try to recycle the packing material as much as possible.

### Check the contents:

Check that the carton contains the following items:

- Power amplifier
- Operating instructions
- Plastic front cover + screws
- Mains power cable.

## SAFETY INSTRUCTIONS:



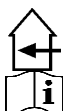
**CAUTION:** To reduce the risk of electric shock, do not remove the top cover. No user-serviceable parts inside. Refer servicing to qualified service personnel only.



The lightning flash with arrowhead symbol within the equilateral triangle is intended to alert the user or the presence of un-insulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock.



The exclamation point within the equilateral triangle is intended to alert the user to the presence of important operation and maintenance (servicing) instructions in the literature accompanying this appliance.



This symbol means: indoor use only



This symbol means: Read instructions

- To prevent fire or shock hazard, do not expose this appliance to rain or moisture.
- To avoid condensation to be formed inside, allow the unit to adapt to the surrounding temperatures when bringing it into a warm room after transport. Condense sometimes prevents the unit from working at full performance or may even cause damages.
- This unit is for indoor use only.
- Don't place metal objects or spill liquid inside the unit. No objects filled with liquids, such as vases, shall be placed on this appliance. Electric shock or malfunction may result. If a foreign object enters the unit, immediately disconnect the mains power.
- No naked flame sources, such as lighted candles, should be placed on the appliance.
- Don't cover any ventilation openings as this may result in overheating.
- Prevent use in dusty environments and clean the unit regularly.
- Keep the unit away from children.
- Inexperienced persons should not operate this device.
- Maximum save ambient temperature is 40°C. Don't use this unit at higher ambient temperatures.
- Minimum distances around the apparatus for sufficient ventilation is 3cm.
- Always unplug the unit when it is not used for a longer time or before you start servicing.
- The electrical installation should be carried out by qualified personal only, according to the regulations for electrical and mechanical safety in your country.
- Check that the available voltage is not higher than the one stated on the rear panel of the unit.
- The socket inlet shall remain operable for disconnection from the mains.
- The power cord should always be in perfect condition. Switch the unit immediately off when the power cord is squashed or damaged. It must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.
- Never let the power-cord come into contact with other cables!
- When the power switch is in OFF position, this unit is not completely disconnected from the mains!
- This appliance must be earthed to in order comply with safety regulations.
- In order to prevent electric shock, do not open the cover. Apart from the mains fuse there are no user serviceable parts inside.
- **Never** repair a fuse or bypass the fuse holder. **Always** replace a damaged fuse with a fuse of the same type and electrical specifications!
- In the event of serious operating problems, stop using the appliance and contact your dealer immediately.
- Please use the original packing when the device is to be transported.
- Due to safety reasons it is prohibited to make unauthorized modifications to the unit.

#### **INSTALLATION GUIDELINES:**

- Install the unit in a well-ventilated location where it will not be exposed to high temperatures or humidity.
- Placing and using the unit for long periods near heat-generating sources such as amplifiers, spotlights, etc. will affect its performance and may even damage the unit.
- The unit can be mounted in 19-inch racks. Attach the unit using the 4 screw holes on the front panel. Be sure to use screws of the appropriate size. (screws not provided) Take care to minimize shocks and vibrations during transport.
- When installed in a booth or flight case, please make sure to have good ventilation to improve heat evacuation of the unit.
- To avoid condensation to be formed inside, allow the unit to adapt to the surrounding temperatures when bringing it into a warm room after transport. Condense sometimes prevents the unit from working at full performance.

#### **CLEANING THE APPLIANCE:**

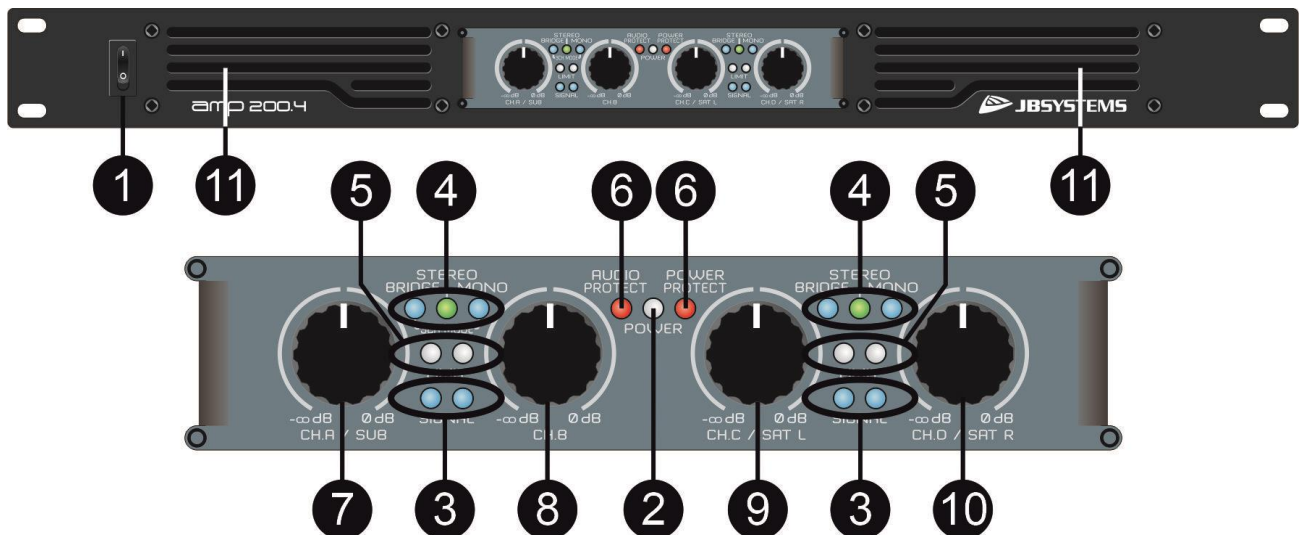
Clean by wiping with a cloth slightly dipped with water. Avoid getting water inside the unit.

Do not use volatile liquids such as benzene or thinner which will damage the unit.

Clean the ventilation holes regularly with a vacuum cleaner. This increases the cooling capacity of the amplifier fans and helps preventing temperature overheat.

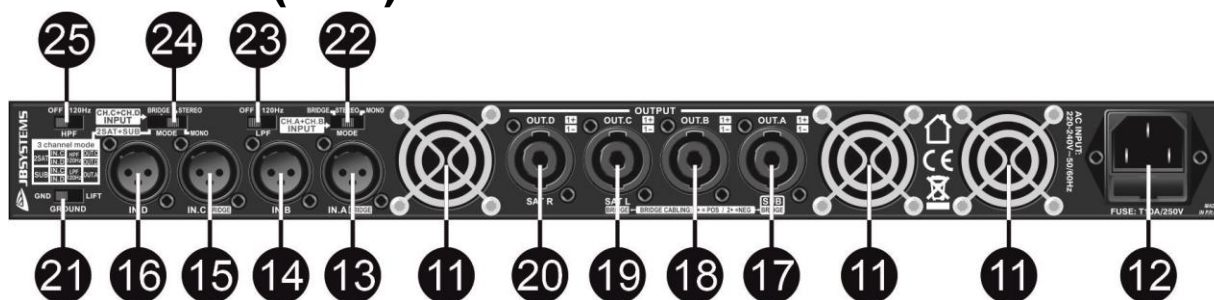
## **FUNCTIONS (FRONT)**

This amplifier has 2 totally independent stereo amplifiers inside: amplifier 1 serves channels 1+2, amplifier 2 serves channels 3+4. Both amplifiers can be used in a different working mode (stereo, parallel or bridge) which gives you more flexibility. **Refer to the chapter "HOW TO USE" for more information.**



1. **MAINS SWITCH:** Used to turn the amplifier on and off. A few seconds after switching on the amplifier it is ready for operation.
2. **POWER LED:** This white led is on when you turn the amplifier on using switch (1).
3. **SIGNAL LEDES:** these LEDs indicate that a music signal is present at the inputs.
4. **OPERATION MODE LED:** Shows if the amplifier is in bridge mode, stereo mode or mono mode
5. **CLIP LEDES:** Lit just before the maximum, distortion free, output level of the amplifier. They indicate that the internal limiter starts working. The clip LEDs may turn on shortly from time to time but they may certainly not turn on for longer periods. In this case you have to turn the output level down!
6. **AUDIO PROTECT LED:** is on when the speakers are disconnected from the amplifier. This occurs in the following situations:
  - During the first seconds after switching on the amplifier.
  - When the temperature of the power stage becomes too high.
  - In case of a technical defect: DC protection, overload, short circuit, ...
  - While switching the amplifier off, the “protect led” turns on for a short time.ç
7. **GAIN CONTROL CHA:**
  - BRIDGE mode: used to control the level of channel A.
  - STEREO mode: used to control the level of channel A.
  - MONO mode: used to control the level of channel A and B
8. **GAIN CONTROL CHB:**
  - BRIDGE mode: NOT used.
  - STEREO mode: used to control the level of channel B.
  - MONO mode: NOT used
9. **GAIN CONTROL CHC:**
  - BRIDGE mode: used to control the level of channel C.
  - STEREO mode: used to control the level of channel C.
  - MONO mode: used to control the level of channel C and D
10. **GAIN CONTROL CHD:**
  - BRIDGE mode: NOT used.
  - STEREO mode: used to control the level of channel D.
  - MONO mode: NOT used

## FUNCTIONS (rear)



11. **VENTS:** these openings allow the amplifier to be properly cooled by the built-in fans. Make sure these are not covered and clean them promptly
12. **POWER input:** Use the supplied power cable to connect the amplifier to the mains. This connector also holds a 20mm glass fuse. Always replace a blown fuse by another with exactly the same specifications. (fuse specifications can be found on the rear panel, next to the power input connector)
13. **XLR input INA:** balanced XLR input. In 2 SAT+SUB mode, this input is not used
14. **XLR input INB:** balanced XLR input. Only used while amplifier 1 works in STEREO mode. In MONO, BRIDGE or 2 SAT+SUB mode, this input is not used
15. **XLR input INC:** balanced XLR input.
16. **XLR input IND:** balanced XLR input. Only used while amplifier 2 works in STEREO mode or in 2 SAT+SUB mode. In MONO or BRIDGE mode, this input is not used
17. **SPEAKER output OUTA:**
  - In MONO or STEREO mode: 1+ = positive (red) wire, 1- = negative (black) wire
  - In BRIDGE mode (minimum 8 Ohm!): 1+ = positive (red) wire, 2+ = negative (black) wire
18. **SPEAKER output OUTB:**
  - In MONO or STEREO mode: 1+ = positive (red) wire, 1- = negative (black) wire
  - In BRIDGE mode: NOT used
19. **SPEAKER output OUTC:**
  - In MONO or STEREO mode: 1+ = positive (red) wire, 1- = negative (black) wire
  - In BRIDGE mode (minimum 8 Ohm!): 1+ = positive (red) wire, 2+ = negative (black) wire
20. **SPEAKER output OUTD:**
  - In MONO or STEREO mode: 1+ = positive (red) wire, 1- = negative (black) wire
  - In BRIDGE mode: NOT used
21. **GROUND LIFT:** used to break eventual ground loops and thus solve humming noises
22. **OPERATION MODE switch:** Used to set the operation mode of amplifier 1 (OUT.A & OUT.B):
  - **STEREO:** The most common operation mode, IN.A (13) & IN.B (14) are routed to their corresponding outputs OUT.A & OUT.B.
  - **PARALLEL:** only the mono signal on input INA (13) is used to drive both outputs CH.A+CH.B.
  - **BRIDGE:** used when you need more power. Only the mono signal on input IN.A (13) is used to drive the combined "bridged" output OUT.A (17). Only speakers with impedance >8ohm are allowed.

***IMPORTANT:** the wiring of the OUT.A speaker connector in bridge mode is DIFFERENT ! Check the information about the speaker outputs below*
23. **LOW PASS filter switch:** When ON, only frequencies below 120 Hz will be sent to the output(s) OUT.A & OUT.B. This is very useful when you want to connect subwoofer(s) to the outputs.
24. **OPERATION MODE switch:** Used to set the operation mode of amplifier 2 (OUT.C & OUT.D):
  - **2SAT+SUB:** this special mode makes it possible to drive 2 satellite speakers + a subwoofer without having to use an external crossover !
    - The inputs IN.C & IN.D will receive the stereo signal from your audio source or mixer.
    - OUT.C & OUT.D will be used for the satellite speakers (HIGH PASS filter (25) can be used if needed).
    - OUT.A will be used in BRIDGE mode for the subwoofer
  - **STEREO:** The most common operation mode, INC (15) & IND (16) are routed to their corresponding outputs OUT.C & OUT.D.
  - **PARALLEL:** only the mono signal on input IN.C (15) is used to drive both outputs OUT.C+OUT.D.

- **BRIDGE:** used when you need more power. Only the mono signal on input INC (15) is used to drive the combined “bridged” output OUT.C (19). Only speakers with impedance >8ohm are allowed.

**IMPORTANT:** the wiring of the CHA speaker connector in bridge mode is DIFFERENT ! Check the information about the speaker outputs below

**25. HIGH PASS filter switch:** When ON, only frequencies above 120 Hz will be sent to the output(s) OUT.C & OUT.D. This is very useful when you want to connect small satellite speakers and don't want to use them in Full Range mode.

## HOW TO USE

Both amplifiers can be configured separately in 4ways to obtain several configurations.

### STEREO OPERATION ON ALL 4 CHANNELS:

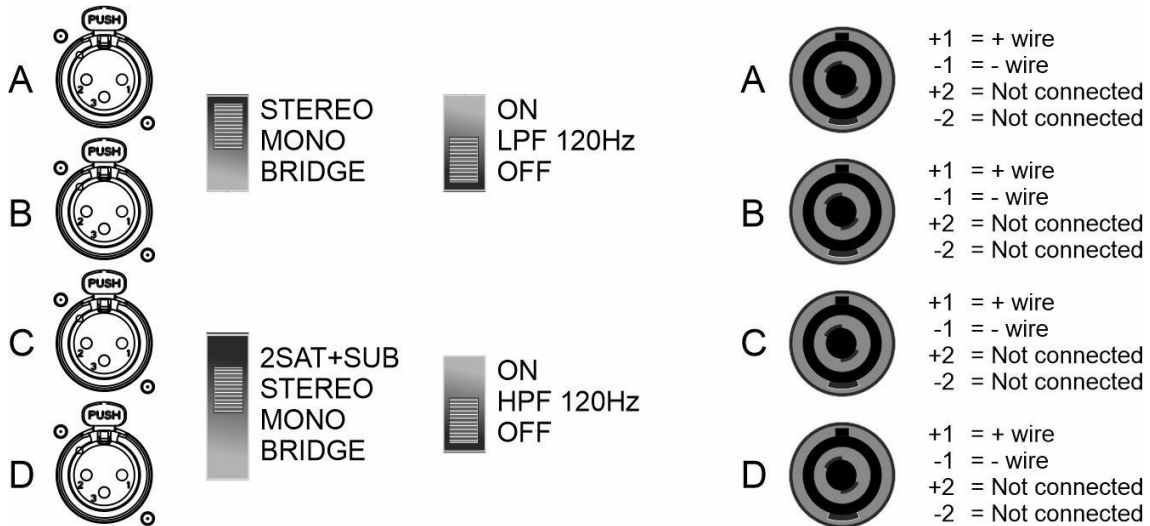
Used to drive 2 separate stereo outputs or 4 mono outputs (4 channels):

IN.A → OUT.A = 100Wrms @ 8Ω ~ 200Wrms @ 4ohm

IN.B → OUT.B = 100Wrms @ 8Ω ~ 200Wrms @ 4ohm

IN.C → OUT.C = 100Wrms @ 8Ω ~ 200Wrms @ 4ohm

IN.D → OUT.D = 100Wrms @ 8Ω ~ 200Wrms @ 4ohm



- Connect the stereo audio signals to the inputs IN.A (13) IN.B (14) IN.C (15) and IN.D (16)
- Set the operation mode switches (22&24) to “stereo”
- Connect the speakers to the outputs.
- Set input gain knobs (7/8/9/10) to zero
- Make sure there's a music signal at the input
- Turn the amplifier on (1)
- Adjust the gain knobs (7/8/9/10) to the desired level

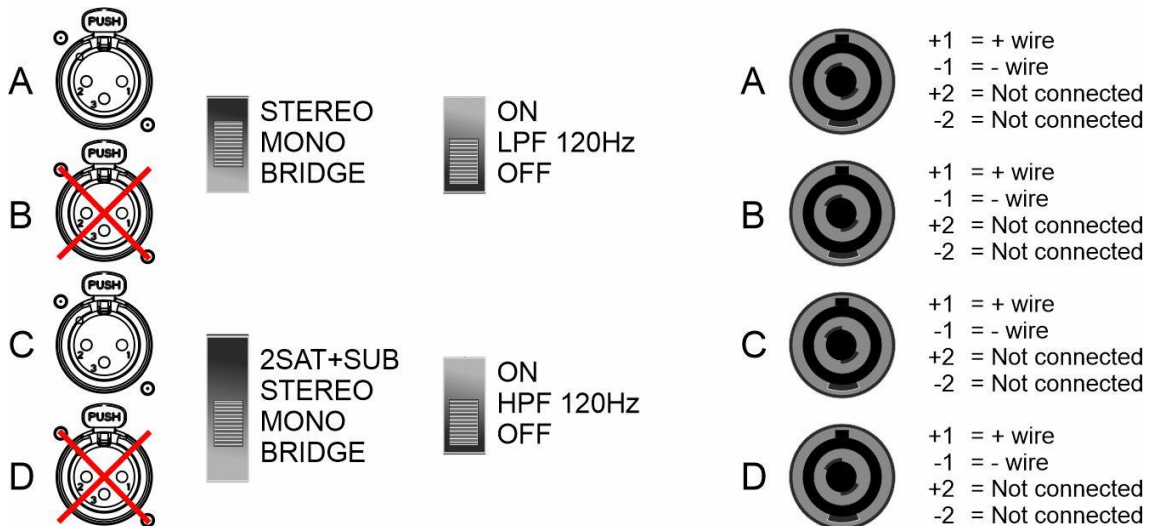
### 4 CHANNEL MONO MODE:

Use only 2 inputs to drive the 4 outputs :

4x 100Wrms @ 8Ω ~ 4x 200Wrms @ 4ohm.

IN.A → OUT.A + OUT.B

IN.C → OUT.C + OUT.D



- Connect the mono audio signals to the inputs IN.A (13) and IN.C (15)
- Set the operation mode switches (22&24) to “MONO”
- Connect the speakers to the outputs.
- Set input gain knobs (7/8/9/10) to zero
- Make sure there’s a music signal at the input
- Turn the amplifier on (1)
- Adjust the gain knobs (7&9) to the desired level (knobs 8&10 are not used)

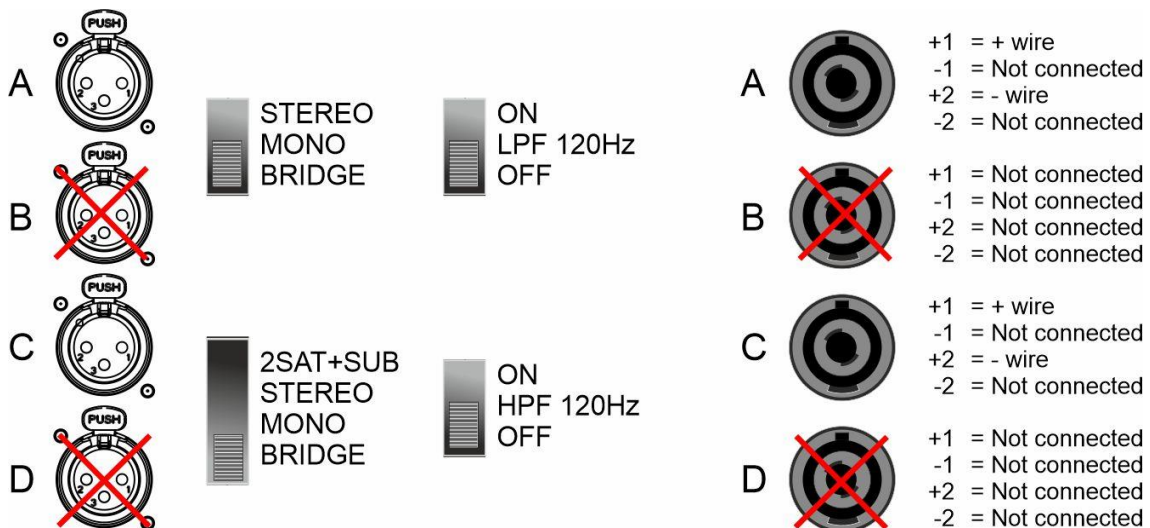
**2 CHANNEL BRIDGE MODE:**

When more power is needed you can combine the power of 2 amplifier channels on 1 single output:

IN.A → OUT.A = 400Wrms @ 8Ω **Attention: loads below 8Ω are NOT allowed**

IN.C → OUT.C = 400Wrms @ 8Ω **Attention: loads below 8Ω are NOT allowed**

**IMPORTANT:** the wiring of the CH.A and CH.C speaker connector in bridge mode is DIFFERENT ! Check the information about the speaker output wiring below.



- Connect the audio signals to the inputs IN.A (13) and IN.C (15)
- Set the operation mode switches (22&24) to “BRIDGE”
- Connect the speakers to the outputs **with a specially wired connector for the BRIDGE outputs.**
- Set input gain knobs (7/8/9/10) to zero
- Make sure there’s a music signal at the input
- Turn the amplifier on (1)
- Adjust the gain knobs (7&9) to the desired level (knobs 8&10 are not used)



**3 CHANNEL “2 SAT + SUB” MODE:**

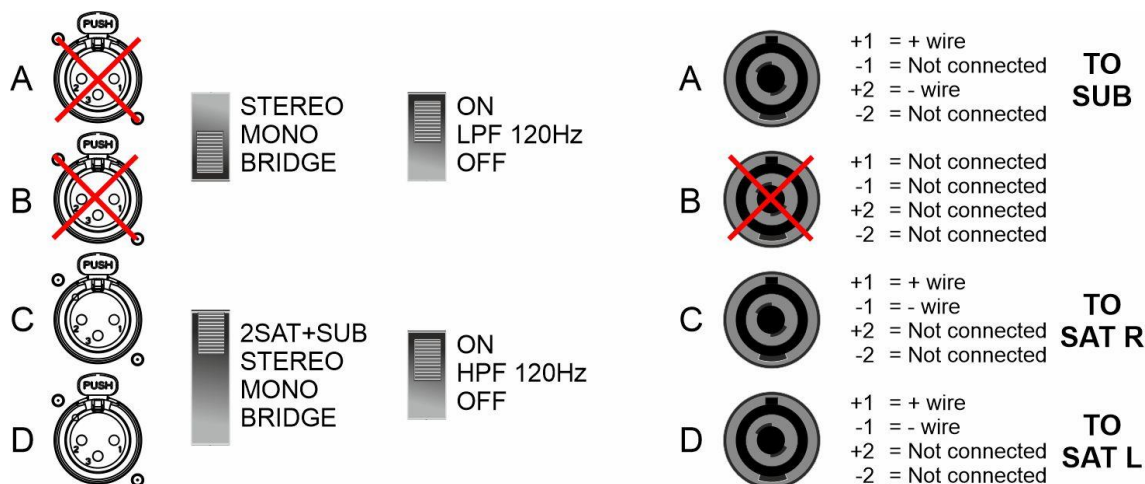
You can use the amplifier to drive 2 satellite speakers + a mono subwoofer (no external crossover needed). The subwoofer will be driven in bridge mode for more power.

IN.C → OUT.C = Satellite L 100Wrms @ 8Ω ~ 200Wrms @ 4ohm

IN.D → OUT.D = Satellite R 100Wrms @ 8Ω ~ 200Wrms @ 4ohm

IN.C + IN.D → OUT.A = Subwoofer = 1x 400W @ 8 ohm. **Attention: loads below 8Ω are NOT allowed**

**IMPORTANT:** the wiring of the CH.A subwoofer connector in bridge mode is **DIFFERENT** ! Check the information about the speaker output wiring below.



- Connect the audio signals to the inputs IN.C (15) and IN.D (16)
- Set the operation mode switch for channel C and D (24) to “2SAT+SUB”
- If you use small satellite speakers, switch the High Pass Filter (25) ON. If you use bigger speakers (f.ex.15”) and you want to run the satellite speakers in full range mode, you can leave the HPFilter OFF.
- Set the operation mode switch for the subwoofer channels CH.A&CH.B (22) to “BRIDGE”
- Switch the Low Pass Filter (23) ON
- Connect the satellite speakers to the outputs SAT.L & SAT.R (19&20)
- Connect the subwoofer **with a specially wired connector for the BRIDGE mode** to output SUB (17).
- Set input gain knobs (7/8/9/10) to zero
- Make sure there’s a music signal at the input
- Turn the amplifier on (1)
- Adjust the gain knobs (9&10) to the desired level for the satellite speakers
- Adjust the gain knobs(7) to the desired level for the subwoofer

**SPECIFICATIONS**

This unit is radio-interference suppressed. This appliance meets the requirements of the current European and national guidelines. Conformity has been established and the relevant statements and documents have been deposited by the manufacturer.

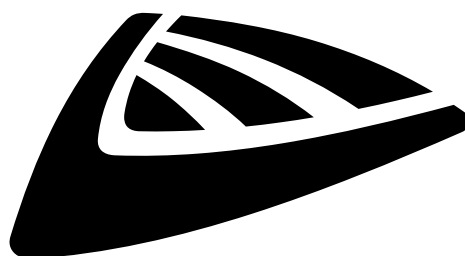
<b>Power @ 8Ω:</b>	100 Wrms / output
<b>Power @ 4Ω:</b>	200 Wrms / output
<b>Power bridge 8Ω:</b>	400 Wrms / output
<b>Freq. Resp. (+/-1dB):</b>	20 – 20000 Hz
<b>S/N ratio:</b>	>100 dB
<b>THD@1kHz:</b>	<0,1%
<b>Power supply:</b>	AC220V~240V / 50Hz~60Hz
<b>Dimensions (mm):</b>	483 x 44 x 240 (19"/1U)
<b>Weight:</b>	4,7 kg

Every information is subject to change without prior notice

You can download the latest version of this user manual on our website: [www.ib-systems.eu](http://www.ib-systems.eu)







**JB SYSTEMS**

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**DE: Abonnieren Sie unseren Newsletter und erhalten Sie aktuelle Produktinformationen!**

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