ESX QL800.4 Class D 4-Channel Amplifier Owner's Manual

Contents

ESX QL800.4 Class D 4-Channel Amplifier

SPECIFICATIONS

MODELS QL800.4

- **CHANNELS:** 4
- **CIRCUIT:** CLASS D Digital

OUTPUT POWER RMS @ 14,4 V

- **Watts @ 4 Ohms:** 4 x 125
- **Watts @ 2 Ohms:** 4 x 200
- **Watts @ 4 Ohms mono bridged:** 2 x 400

OUTPUT POWER MAX @ 14,4 V

- **Watts @ 4 Ohms:** 4 x 250
- **Watts @ 2 Ohms:** 4 x 400
- **Watts @ 4 Ohms mono bridged:** 2 x 800
- **Frequency Range –3dB:** 5 Hz – 55 kHz
- **Damping Factor:** > 220 dB
- **Signal-to-Noise Ratio:** 81 dB
- **THD&N:** < 0,01%
- **Input Sensitivity:** 5 – 0,2 V

CH 1 & CH 2

- **X-Over Modes:** Full – HP – Dupe/Copy
- **Various Highpass Filter:** 50 – 5000 Hz

CH 3 & CH 4

- **X-Over Modes:** FULL – HP – LP/BP
- **Various Highpass Filter:** 10 – 500 Hz
- **Various Lowpass Filter:** 50 – 5000 Hz
- **Various Bass Boost:** 0 – 12 dB @ 40 Hz
- **Start-stop capability:** 8,5 V
- **High Level Inputs:** yes
- **Auto Turn On:** via DC or Signal
- **Bass Remote:** yes
- **Fullrange Outputs (RCA):** stereo
- **Fuse Ratings:** 80 A (external)
- **Dimensions Width x Height x Length:** 226 x 43 x 120 mm

Technical specifications are subject to change! Errors are reserved!

INTENDED USE

- This product is only designed for use in a vehicle with 12 volt on-board voltage and negative ground and functions as an amplifier for audio signals.
- Please use the product only in its intended manner. Any other use may lead to damage to the product or in the vicinity of the product.

INSTALLATION INSTRUCTIONS

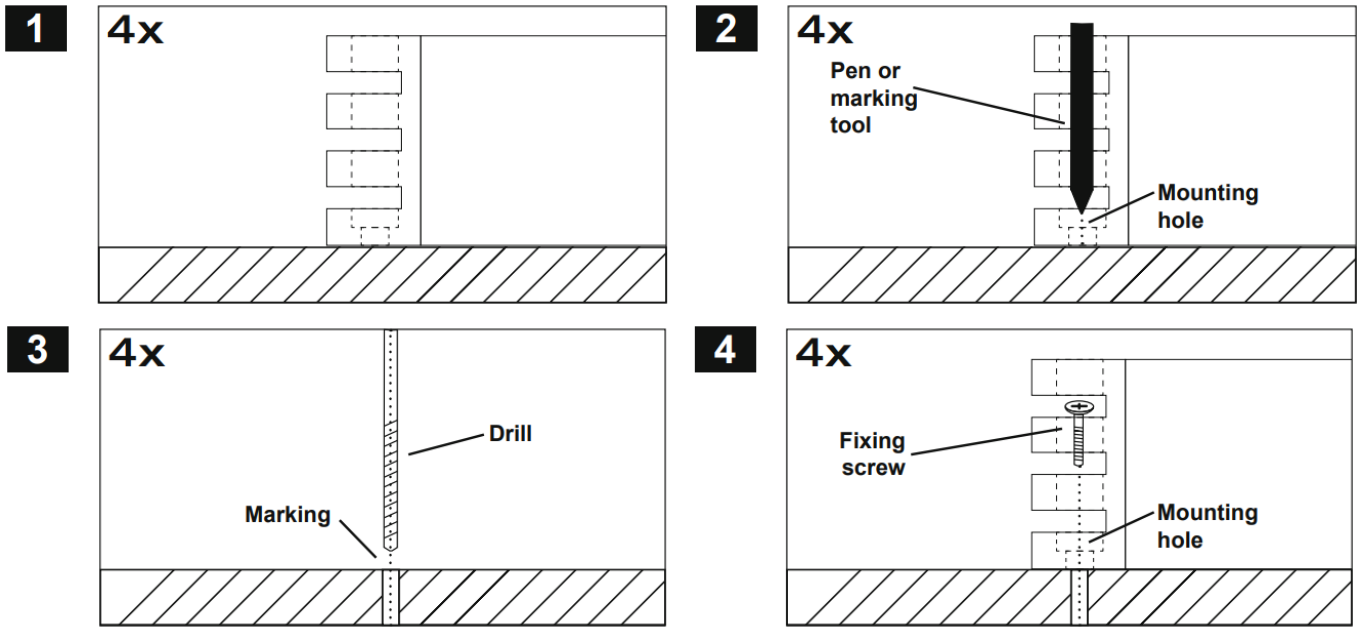
NOTE: Before you start with the installation of the sound system, disconnect necessarily the GROUND connection wire from the battery to avoid any risk of electric shocks and short circuits.

MECHANICAL INSTALLATION

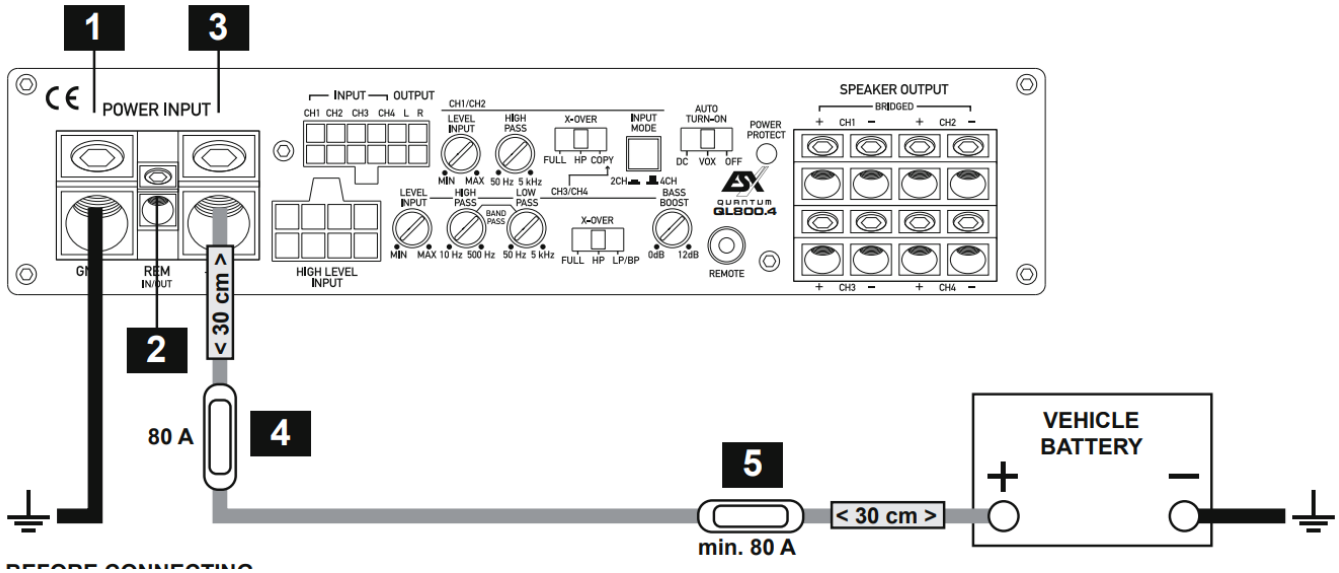
Avoid any damages on the components of the vehicle like air bags, cables, board computer, seat belts, gas tank or the like.
Ensure that the chosen location provides a sufficient air circulation for the amplifier. Do not mount the device into small or sealed spaces without air circulation near by heat dispersing parts or electrical parts of the vehicle.
Do not mount the amplifier on top of a subwoofer box or any other vibrating parts, whereby parts could loosen inside. The wires and cables of power supply and the audio signal must be as short as possible to avoid any losses and interferences.

1. At first you need to find a suitable installation location for the amplifier. Ensure that enough space for the installa-tion of the cables remains and that they will not be bent and have sufficient pull relief.
2. Keep the amplifier at the chosen mounting location in the vehicle. Then mark the four drill holes with an appropri-ate pen or marking tool through the designated mounting holes at the amplifier.

3. Lay the amplifier aside and then drill the holes for the mounting screws at the marked locations.
   Please ensure not to damage any components of the ve-hicle while you drilling the holes. Alternatively (depends on the material of the surface) you can also use self-tap-ping screws.
4. Then uphold the amplifier to the chosen position and fix the screws through the mounting holes into the drilled screw holes.
   Ensure that the mounted amplifier is tightly fixed and can not come loose while driving.



ELECTRICAL INTERCONNECTION



BEFORE CONNECTING

For the professional installation of a sound system, car audio retail stores offers appropriate wire kits. Ensure a sufficient profile section (at least 25 mm2), the suitable fuse rating and the conductivity of the cables when you purchase your wiring kit. Clean and remove rust-streaked and oxidized areas on the contact points of the battery and the ground connection. Make sure that all screws are fixed tight after the installation, because loose connections cause malfunctions, insufficient power supply or interferences. Do not set in the fuse until the installation is accomplished.

1. **GND**

Connect the GND terminal with a suitable contact ground point on the vehicle's chassis. The ground wire must be as short as possible and must be connected to a blank metallic point at the vehicle's chassis. Ensure that this ground point has a stable and safe electric connection to the negative "–"pole of the battery. Check this ground wire from the battery to the ground point if possible and enforce it if required. Use a ground wire with a sufficient cross section (at least 25 mm2) and the same size like the plus (+12V) power supply wire.

2. **REM IN/OUT**

   Connect a turn-on signal (e.g. automatic antenna) or the turn-on remote signal of your head unit (REM) with the REM IN/OUT terminal of the amplifier. Use therefor a suitable cable with a sufficient cross section (0,5 mm2). Hereby the amplifier turns on or off with your head unit.

   If you use the AUTO TURN-ON function, the REM IN/OUT terminal does not need to be connected. However, the REM IN/OUT terminal can then connected to the REM terminal of another amplifier to provide a control signal to it (REM OUT function).

3. **+12V**

   Connect the +12V terminal with the +12V pole of the vehicle's battery. Use a suitable cable with a sufficient cross section (at least 25 mm2).

4. **FUSE**

   The amplifier inherently has no internal device fuse. Use the supplied fuse (80 A) with the fuse holder and install it in the power cable between the 12 Volt positive pole of the vehicle battery and the +12V terminal of the amplifier. The distance between the fuse and the amplifier should not exceed 30 cm.

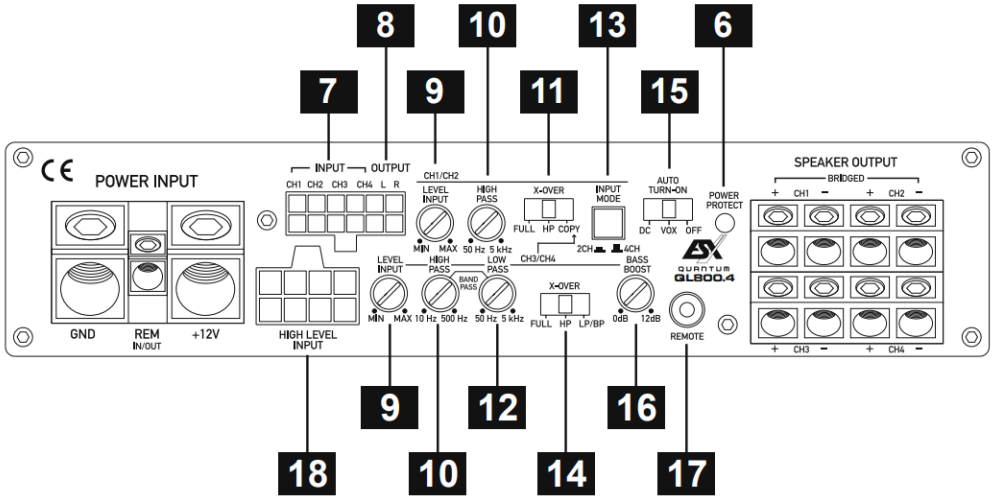
5. **ADDITIONAL CABLE FUSE (OPTIONAL)**

   Install an extra fuse (at least 80 A, not included) for the +12V power cable near the battery. The distance between the fuse and the battery should not exceed 30 cm.

   Replace defective fuses only with a new one of the same type and with the same fuse rating.

FUNCTIONAL INSTRUCTIONS

OPERATING ELEMENTS



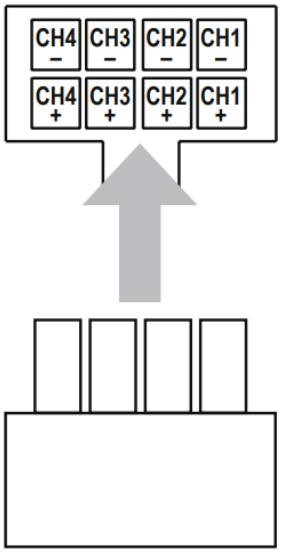
6. If the POWER/PROTECT is blue, the amplifier is ready for operation. If the POWER/PROTECT is red, there is a malfunction. Refer in this case to the section TROUBLESHOOTING.
7. Connect the INPUT RCA jacks from the included cable adapter with the head unit by using appropriate audio signal cables. If only the channels 1 and 2 are occupied, the INPUT MODE button should be in switch position

2CH.

8. The OUTPUT RCA jacks from the included cable adapter provide a linear full-range audio signal for driving additional amplifiers.
9. The LEVEL INPUT controllers determine the input sensitivity (adaptation to the output signal of the head unit) on the respective channel pair (channel 1/2 or channel 3/4). The controller range is between 5 volts (MIN) and 0.2 volts (MAX).
10. The HIGH PASS controllers determine the frequency cut-off crossover frequency is continuously variable at CH1/2 from 50 Hz to 5000 Hz (5 kHz) and at CH3/4 from 10 Hz to 500 Hz.
11. The CH1/CH2 X-OVER switch selects the desired operating mode of channel 1/2:
    - FULL: Bypass mode (the internal crossovers are bypassed completely. Optimal for the use of external DSPs).
    - HP: High-Pass mode (frequency is limited downwards, adjustable by the HIGH PASS controller).
    - DUPE/COPY: For CH1/CH2, all the settings such as LEVEL INPUT, HIGH PASS, LOW PASS, and BASS BOOST and the bass level of CH3/CH4 set with the supplied remote control will be adopted. This is particularly useful if you want to operate the chan-nel pairs 1/2 and 3/4 bridged with two subwoofers.
12. The LOW PASS controller determines the frequency cut-off at channel pair 3/4 upwards. The crossover frequency is continu-ously variable from 50 Hz to 5000 Hz (5 kHz).
13. The INPUT MODE switch is used to set whether the amplifier should be driven by the head unit with only one stereo cinch audio cable (2CH) or with two stereo cinch audio cables (4CH). Only with switch position 4CH, the so-called fader function on the head unit is effective.
    With switch position 2CH, the input signal from the INPUT CH1/2 is also routed to the channel pair CH3/4. Thus, only a stereo cinch audio cable to LINE INPUT CH1/2 is necessary. When operating two subwoofers, it is also possible to use the subwoofer signal output of the head unit if available.
14. The CH3/CH4 X-OVER switch selects the desired operating mode of channel 3/4:
    - FULL: Bypass mode (the internal crossovers are bypassed completely. Optimal for the use of external DSPs).
    - HP: High-Pass mode (frequency is limited downwards, adjustable by the HIGH PASS controller).
    - LP/BP: Low-Pass/Bandpass mode (frequency is limited upwards, adjustable by the LOW PASS controller). The HIGH PASS controller then acts as a subsonic filter in this mode and limits the frequency downwards (bandpass function).
      NOTE: If this is set higher than the LOW PASS, no sound is heard.
15. If your head unit does not have a turn-on signal (REM), you can use the automatic turn-on function of the amplifier. This works in two ways, which can be set at the AUTO TURN-ON switch:
    1. DC: This method only works if you use the amplifier's HIGH LEVEL INPUT. The amplifier then detects a voltage rise to 6 volts when the head unit is turned on by a so-called "DC offset" and then turns on the amplifier.
    2. VOX: Select this method when using the INPUT RCA jacks. The amplifier then detects a voltage increase in the incoming audio signal when switching on the head unit via the attached RCA cable and then switches on the amplifier.
       Note: As soon as the head unit is switched off again, the amplifier switches itself off. The terminal for the amplifier turn-on (page 15#2, REM IN/OUT) can now be used to supply additional amplifiers with a turn-on signal. Simply connect the REM terminals of the two amplifiers and make sure that the other amplifier is in "normal" turn-on mode, which means that the AUTO TURN ON function is disabled.
16. The BASS BOOST controller adjusts the bass boost continuously from 0 dB to +12 dB at 40 Hz on channel pair

3/4. NOTE: Always use this controller with care. A permanently too high bass boost could damage your speakers!

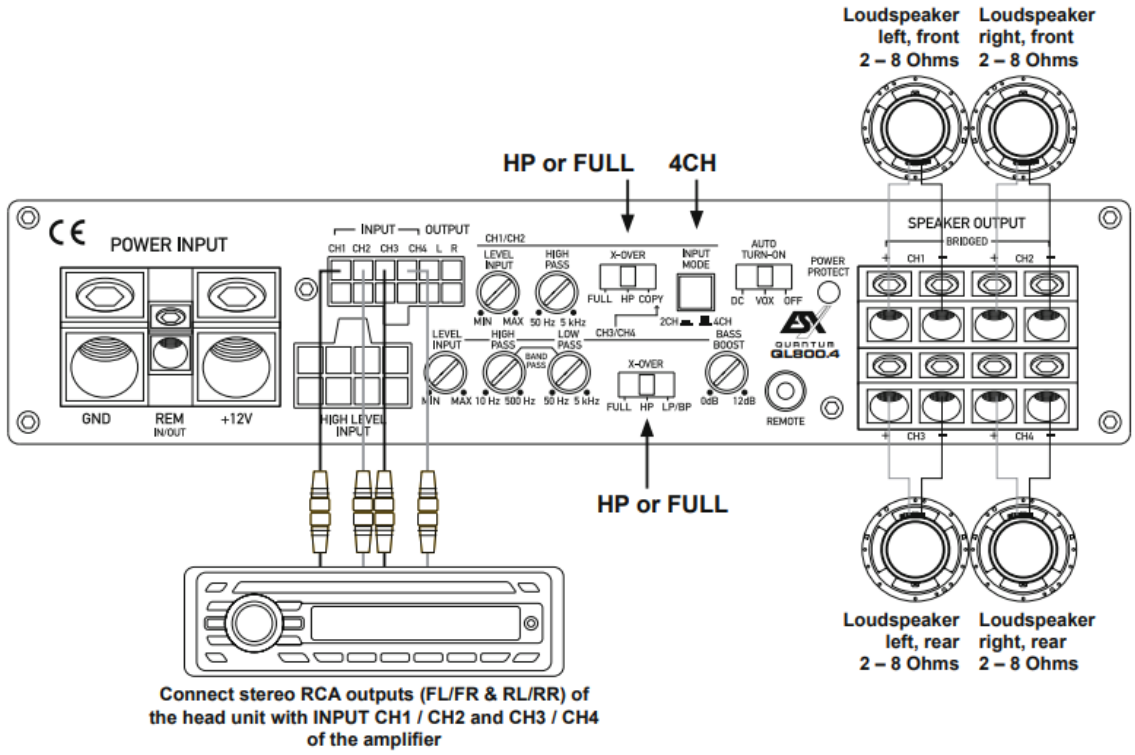
17. The REMOTE port is for connecting the cable of the included bass level remote controller. With this, the bass level can be e.g. be adjusted from the driver's seat. Only use the supplied bass remote controller and the associated cable. The bass level remote controller only works in LP/BP mode (Low-Pass/Bandpass) on channel pair 3/4, in COPY mode under CH1/CH2 X-OVER also on channel pair 1/2.
18. If your head unit does not have RCA preamp outputs, you can use the amplifier's HIGH LEVEL INPUT as the signal input. To do this, simply connect the loudspeaker cables of the head unit to the enclosed cable plug as follows:



White:	CH1 / left front +
White-Black:	CH1 / left front –
Gray:	CH2 / right front +
Gray-Black:	CH2 / right front –
Green:	CH3 / left rear +
Green-Black:	CH3 / left rear –
Purple:	CH4 / right rear +
Purple-Black:	CH4 / right rear –

INTERCONNECTION EXAMPLE

4-channel-mode: 1 x Stereo-System (Front) and 1 x Stereo-System (Rear)



INTERCONNECTION

- Connect the RCA outputs of the head unit with the RCA jacks (INPUT CH1-4) of the amplifier with appropriate high-value RCA cables.
- Connect the front and rear speakers with the speaker outputs (SPEAKER OUTPUT + 1CH -, + 2CH – and + 3CH -, + 4CH -).
- Always ensure that the total impedance load on the speaker outputs is not lower than 2 ohms.
  Too low impedance cause high temperature and will shut down the amplifier operation.
- Always ensure the correct polarity of the speakers. The interchange of plus and minus cause total loss of bass playback and could damage the speakers.

INPUT MODE SWITCH
Select the 4CH position on the INPUT MODE switch. If there is only one RCA stereo audio cable from the head unit available, connect the CH1/2 RCA line inputs and select the 2CH position.

CROSSOVER SETTINGS CH1/2 & CH3/4

- When using bigger speakers (more than 20 cm) set the X-OVER switch to the FULL position (Full Range Signal).
- When using smaller speakers (8.7cm – 16 cm) set the X-OVER switch to the HP position (Highpass Mode) to avoid any damage by lower frequencies on the speakers. The cut-off frequency is adjustable with the HIGH PASS controller and should be set between 60Hz to 150Hz, depending on the size of the speakers.
- The LOW PASS controller is not in use in this interconnecting example.

LEVEL CONTROLLER CH1/2 & CH3/4

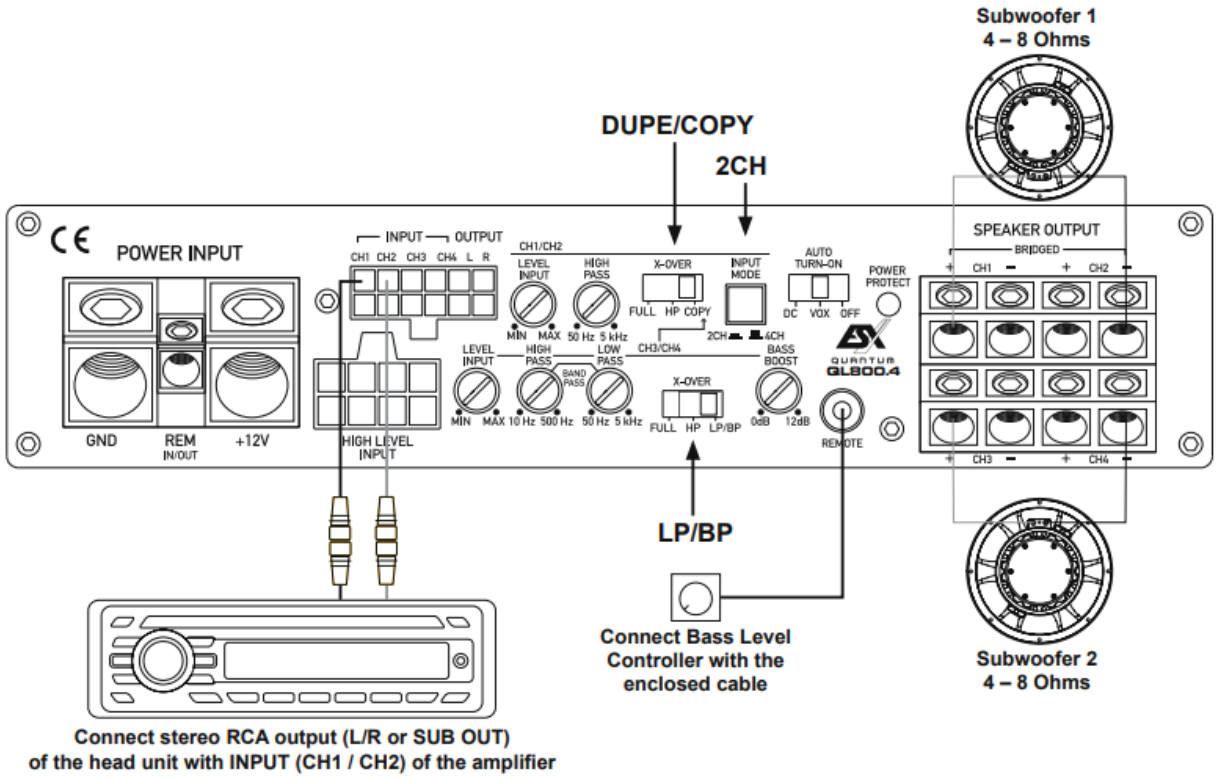
- Turn the LEVEL INPUT controller of the amplifier to the MIN position.
- Turn the volume controller of the head unit to 80 – 90% of its full setting.
- Turn the LEVEL INPUT controller clockwise until you hear some distortion.
- Then turn back the LEVEL INPUT controller slightly until you hear a cleaner sound.

BASS BOOST CONTROLLER
The BASS BOOST controller must be turned to 0 dB position in this interconnecting example .

BASS REMOTE
The enclosed BASS REMOTE CONTROLLER is not in use in this interconnecting example.

NOTE: Do not connect loudspeaker cables with the vehicle’s chassis. Always ensure the correct polarity of all connections.

2-channel-mode: 2 x Mono Subwoofer bridged



INTERCONNECTION

- Connect the RCA outputs of the head unit with the RCA jacks INPUT (CH /2) of the amplifier with appropriate high-value RCA cables. If a separate SUB OUT from your head unit is available, use this as line output.
- Connect the subwoofers with the SPEAKER OUTPUTS CH1/2 + BRIDGED – and CH3/4 + BRIDGED -.
- Always ensure that the total impedance load per channel pair is not lower than 4 ohms. Too low impedance cause high temperature and will shut down the amplifier operation.
- Always ensure the correct polarity of the speakers. The interchange of plus and minus cause total loss of bass playback and could damage the speakers.

INPUT MODE SWITCH
Select the 2CH position on the INPUT MODE switch.

CROSSOVER SETTINGS & BASS BOOST CONTROLLER

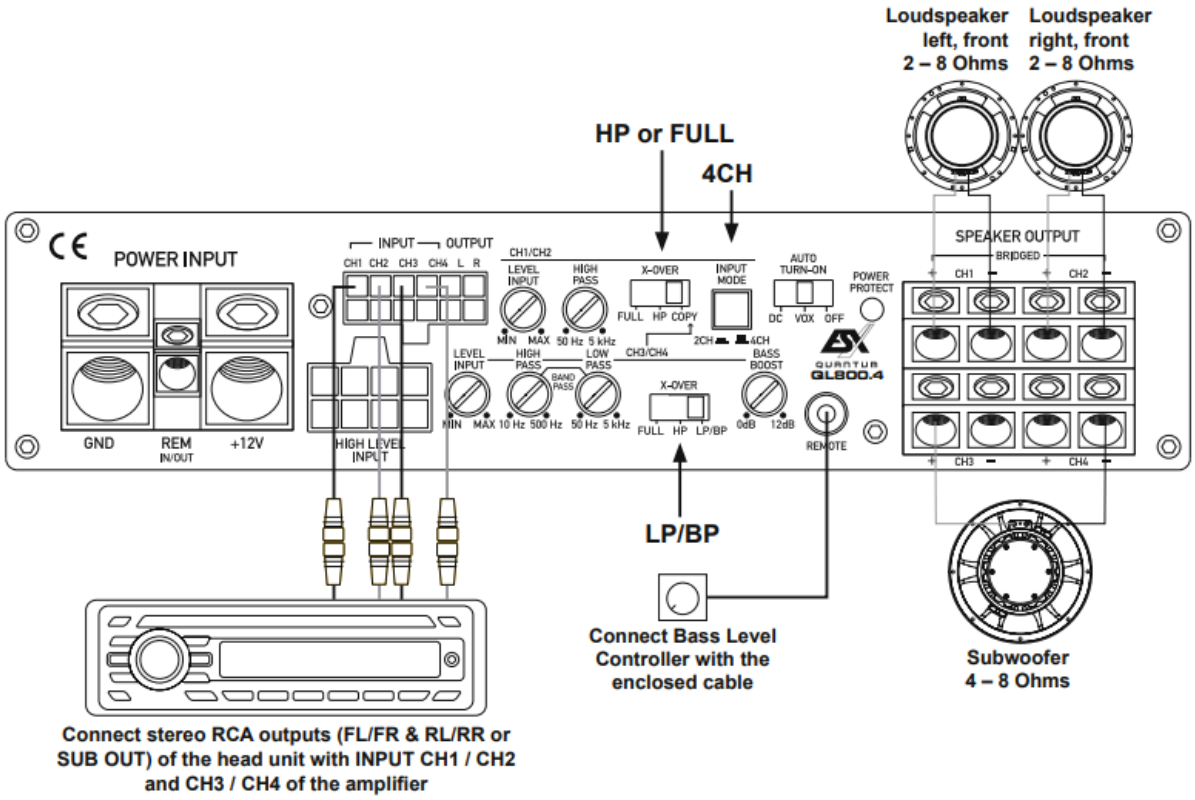
- The X-OVER switch of CH1/2 must be in position COPY. All settings of channel CH3/4 will be adopted for CH1/2.
  Note: The controllers HIGH PASS and LEVEL INPUT are then without function.
- The X-OVER switch of CH3/4 must be in position LP/BP. The cut-off frequency is adjustable with the LOW PASS controller of CH3/4 and should be set between 60 to 100 Hz, depending on the size of the subwoofer.
- The HIGH PASS controller CH3/4 works also as subsonic filter, that eliminates the ultra-low, not audible frequencies to
  generate a bandpass signal. The subsonic frequency should be set between 15 to 40 Hz, depending on the size of the subwoofer.
  Note: If this value is higher than the LOW PASS setting, no sound is audible.
- The BASS BOOST controller allows a bass enhancement up to +12 dB.

LEVEL CONTROLLER CH3/4 (SUBWOOFER 1+2)

- Turn the LEVEL INPUT controller of the amplifier to the MIN position.
- Turn the volume controller of the head unit to 80 – 90% of its full setting.
- Turn the LEVEL INPUT controller clockwise until you hear some distortion.
- Then turn back the LEVEL INPUT controller slightly until you hear a cleaner sound.

BASS REMOTE (SUBWOOFER 1+2)|
The enclosed BASS REMOTE CONTROLLER adjusts the bass-level e.g. from the driver's seat. Please use only the enclosed bass remote controller and cable.

3-channel-mode: 1 x Stereo-System and 1 x Mono Subwoofer



INTERCONNECTION

- Connect the RCA line outputs of the head unit with the RCA jacks INPUT of the amplifier with appropriate high-value RCA cables. If a separate SUB OUT from your head unit is available, use this for the INPUT CH3/4 on the amplifier.
- Connect the speakers with SPEAKER OUTPUT + CH 1 – and + CH 2 -, and the subwoofer with the SPEAKER OUTPUT CH3/4
  + BRIDGED – of the amplifier.
- Always ensure that the total impedance load per channelpair (CH1 & CH2) is not lower than 2 ohms and the total impedance load of the subwoofer (CH3 & CH4) is not lower than 4 ohms. Too low impedance cause high temperature and will shut down the amplifier operation.

INPUT MODE-Schalter
Refer to the notes on page 18.

CROSSOVER SETTINGS CH1/2 (STEREO SYSTEM)
Refer to the notes on page 18.

LEVEL INPUT CONTROLLER CH1/2 (STEREO SYSTEM)
Refer to the notes on page 18.

BASS BOOST CONTROLLER CH1/2 (STEREO SYSTEM)
The BASS BOOST controller must be turned to 0 dB position in this interconnecting example .

CROSSOVER SETTINGS CH3/4 (SUBWOOFER)
Refer to the notes on page 19.

LEVEL CONTROLLER CH3/4 (SUBWOOFER)
Refer to the notes on page 19.

BASS BOOST CONTROLLER CH3/4 (SUBWOOFER)
The BASS BOOST controller adjusts the bass enhancement between 0db and +12dB.

BASS REMOTE CH3/4 (SUBWOOFER)
The enclosed BASS REMOTE CONTROLLER adjusts the bass-level e.g. from the driver's seat of the subwoofer on CH 3/4. Please use only this enclosed bass remote controller and cable.

TROUBLESHOOTING

ELECTRICAL INTERFERENCES
The reason for interferences are mostly the routed cables and wires. Especially the power and audio cables (RCA) of your sound system are vulnerable. Often these interferences are caused by electric generators or other electrical units (fuel pump, AC etc.) of the car. The most of these problems can be prevented by a correct and careful wiring.

Here are some courtesy notes:

1. Use only double or triple shielded audio RCA cables for the connection between the amplifier and head unit. An useful alternative are represented by anti-noise-devices or additional ancillary equipment like Balanced Line transmitters, which you can purchase at your car audio retailer. If possible do not use anti-noise-filters, which are splicing the ground of the RCA audio cables.
2. Do not lead the audio cables between the head unit and the amplifier together with the power supply wires on the same side of the vehicle. The best is a real separated installation on the left and right cable channel of the vehicle. Then the overlapping
   of interferences on the audio signal will be avoided. This stands also for the enclosed bass-remote wire, which should not be installed together with the power supply wires.
3. Avoid ground loops by connecting all ground connections in a starlike arrangement. The suitable ground center point is ascertainable by measuring the voltage directly on the vehicle's battery by a multi-meter. You should measure the voltage with turned-on ignition (acc.) and with other turned-on power consumers (e.g. headlights, rear window defroster, etc,). Compare
   the measured value with the voltage of the ground point you have chosen for the installation and the positive pole (+12V) of
   the amplifier. If the voltage has just a little difference, you have found a suitable ground point. Otherwise you need to choose an other ground point.

4. Use if possible only cables with added or soldered cable sockets or the like. Gold plated or high value nickel plated cable sockets are corrosion free and own a very low contact resistance.

PROTECTION CIRCUIT

This amplifier owns a 3-way protection circuit. On overloading, overheating, shorted loudspeakers, too low impedance or insufficient power supply, the protection circuit turns off the amplifier to prevent serious damage. If one of this malfunctions is detected, the POWER/PROTECT LED lights up red.
In this case, check all connections to detect short-circuits, faulty connections or overheating. Refer to the notes on the next page.
If the reason for the disfunction is eliminated, the amplifier is ready for operation again.
If the red the POWER/PROTECT LED does not stop to light up in red, the amplifier is damaged. In this case return the amplifier to your car audio retailer with a detailed malfunction description and a copy of the proof of purchase.
WARNING: Never open the amplifier and try to repair it by yourself. This causes a loss of warranty. The repairing service should be made only by skilled technicians.

INSTALLATION AND OPERATION IN NEWER VEHICLES!
In many vehicles (since approx. 2002) computer controlled diagnosis- and controlling systems are applied – like CAN-BUS or MOST-BUS interfaces. With the installation of a car audio amplifier a new appliance will be added to the 12V on-board electrical system, which may cause under several circumstances error messages or may interrupt the factory made diagnosis system, as a result of high stress peaks and a higher power consumption. Thus, depending on model and manufacturer, the driving safety or important security systems like airbags, ESC or others could be interrupted.

If you plan to operate the amplifier in a vehicle like described above, please follow these instructions:

- Let the installation be made only by a skilled specialist or a service station, which is specialized for the maintenance of your vehicle.
- After the installation, we suggest to make a computer diagnosis of the on-board system, to detect possible malfunctions or errors.
- If the on-board system is interfered by the installation of the amplifier, an additionally installed power capacitor can stabilize the electrical on-board system to ensure a proper and stable operation.
- The best solution is the integration of an own additional 12 V electrical system for the sound system, which can be operated independently with an own battery supply.
  CONSULT YOUR CAR SPECIALIZED SERVICE STATION!

TROUBLE SHOOTING

Malfunction: no function

Reason: **Remedy:**

1. The power supply connection of the device is not correct: Recheck
2. The cables have no mechanical or electrical contact: Recheck
3. The remote turn-on connection from the head unit to the amplifier is not correct: Recheck
4. Defective Fuses. In case of replacing the fuses, ensure the correct fuse rating: Recheck

Malfunction: no signal on loudspeakers, but the POWER/PROTECT LED lights up blue

Reason: **Remedy:**

1. The connections of the speakers or the RCA audio cables are not correct: Recheck
2. The speaker cables or the RCA audio cables are defective: Replace cables
3. The loudspeakers are defective: Replace speakers
4. HIGH PASS controller (Subsonic Mode) in LP/BP operation is adjusted to high: Turn down controller
5. No signal from the head unit: Check head unit settings

Malfunction: one or more channels/controllers are without function / faulty stereo stage

Reason: **Remedy:**

1. The balance or fader controller of the head unit is not in the center-position: Turn to center-position
2. The connections of the speakers are not correct: Recheck
3. The loudspeakers are defective: Replace speakers
4. HIGH PASS controller (Subsonic Mode) in LP/BP operation is adjusted to high: Turn down controller
5. COPY mode is activated and only the controllers of CH3/4 are working: Set the CH1 / CH2 X-OVER switch FULLto or HP

Malfunction: distortions on the loudspeakers

Reason: **Remedy:**

1. The loudspeakers are overloaded: Turn down the level

SAFETY INSTRUCTIONS

PLEASE NOTE THE FOLLOWING ADVICE BEFORE THE FIRST OPERATION!

- THE PURCHASED DEVICE IS ONLY SUITABLE FOR AN OPERATION WITH A 12V ON-BOARD ELECTRICAL SYSTEM OF A VEHICLE. Other-wise fire hazard, risk of injury and electric shock consists.
- PLEASE DO NOT MAKE ANY OPERATION OF THE SOUND SYSTEM, WHICH DISTRACT YOU FROM A SAFE DRIVING. Do not make any pro-cedures, which demand a longer attention. Perform these operations not until you have stopped the vehicle on a safe place. Otherwise the risk of accident consists.
- ADJUST THE SOUND VOLUME TO AN APPROPRIATE LEVEL, THAT YOU ARE STILL ABLE TO HEAR EXTERIOR NOISES WHILE DRIVING. High performance sound systems in vehicles may generate the acoustic pressure of a live concert. The permanent listening to extreme loud music may cause the loss of your hearing abilities. The hearing of extreme loud music while driving may derogate your cognition of warning signals in the traffic. In the interests of the common safeness, we suggest to drive with a lower sound volume. Otherwise the risk of accident consists.
- DO NOT COVER COOLING VENTS AND HEAT SINKS. Otherwise this may cause heat accumulation in the device and fire hazard consists.
- DO NOT OPEN THE DEVICE. Otherwise fire hazard, risk of injury and electric shock consists. Also this may cause a loss of the warranty.
- REPLACE FUSES ONLY WITH FUSE WITH THE SAME RATING. Other-wise fire hazard and risk of electric

shock consists.

- DO NOT USE THE DEVICE ANY LONGER, IF A MALFUNCTION, WHICH REMAINS UNREMEDIED. Refer in this case to the chapter TROUBLE SHOOTING. Otherwise risk of injury and the damage of the device con-sists. Commit the device to an authorized retailer.
- THE INSTALLATION OF A POWER CAPACITOR WITH SUFFICIENT CA-PACITY IS RECOMMENDED. High performance amplifiers cause high po-tential voltage drops and need a high power consumption at a high volume level. To relieve the vehicle's on-board system, it is recommended to install a power capacitor between the battery and the device which works as buf-fer. Consult your car audio retailer for the appropriate capacity.
- INTERCONNECTION AND INSTALLATION SHOULD BE ACCOM-PLISHED BY SKILLED STAFF ONLY. The interconnection and installation of this device demands technical aptitude and experience. For your own safeness, commit the interconnection and installation to your car audio re-tailer, where you have purchased the device.
- DISCONNECT THE GROUND CONNECTION FROM THE VEHICLE'S BATTERY BEFORE INSTALLATION. Before you start with the installation of the sound system, disconnect by any means the ground supply wire from the battery, to avoid any risk of electric shock and short circuits.
- CHOOSE AN APPROPRIATE LOCATION FOR THE INSTALLATION OF THE DEVICE. Look for an appropriate location for the device, which en-sures a sufficient air circulation. The best places are spare wheel cavities, and open spaces in the trunk area. Less suitable are storage spaces behind the side coverings or under the car seats.
- DO NOT INSTALL THE DEVICE AT LOCATIONS, WHERE IT WILL BE EXPOSED TO HIGH HUMIDITY AND DUST. Install the device at a loca-tion, where it will be protected from high humidity and dust. If humidity and dust attain inside the device, malfunctions may be caused.
- MOUNT THE DEVICE AND OTHER COMPONENTS OF THE SOUND SYSTEM SUFFICIENTLY. Otherwise the device and components may get loose and act as dangerous objects, which could cause serious harm and damages in the passenger room.
- ENSURE NOT TO DAMAGE COMPONENTS, WIRES AND CABLES OF THE VEHICLE WHEN YOU DRILL THE MOUNTING HOLES. If you drill the mounting holes for the installation into the vehicle's chassis, ensure by any means, not to damage, block or tangent the fuel pipe, the gas tank, other wires or electrical cables.
- ENSURE CORRECT CONNECTION OF ALL TERMINALS. Faulty con-nections may could cause fire hazard and lead to damages of the device.
- DO NOT INSTALL AUDIO CABLES AND POWER SUPPLY WIRES TO-GETHER. Ensure while installation not to lead the audio cables between the head unit and the amplifier together with the power supply wires on the same side of the vehicle. The best is a areal separated installation in the left and right cable channel of the vehicle. Therewith a overlap of interferences on the audio signal will be avoided. This stands also for the equipped bass-remote wire, which should be installed not together with the power supply wires, but rather with the audio signal cables.
- ENSURE THAT CABLES MAY NOT CAUGHT UP IN CLOSE-BY OB-JECTS. Install all the wires and cables like described on the following pag-es, therewith these may not hinder the driver. Cables and wires which are installed close-by the steering wheel, gear lever or the brake pedal, may caught up and cause highly dangerous situations.
- DO NOT SPLICE ELECTRICAL WIRES. The electrical wires should not be bared, to provide power supply to other devices. Otherwise the load capac-ity of the wire may get overloaded. Use therefor a appropriate distribution block. Otherwise fire hazard and risk of electric shock consists.

- DO NOT USE BOLTS AND SCREW NUTS OF THE BRAKE SYSTEM AS GROUND POINT. Never use for the installation or the ground point bolts and screw-nuts of the brake system, steering system or other security-relevant components. Otherwise fire hazard consists or the driving safety will be derogated.
- ENSURE NOT TO BEND OR SQUEEZE CABLES AND WIRES BY SHARP OBJECTS. Do not install cables and wires not close-by movable objects like the seat rail or may be bent or harmed by sharp and barbed edges. If you lead a wire or cable through the hole in a metal sheet, protect the insulation with a rubber grommet.
- KEEP AWAY SMALL PARTS AND JACKS FROM CHILDREN. If objects like these will be swallowed, the risk of serious injuries consists. Consult promptly a medical doctor, if a child swallowed a small object.

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Documents / Resources

	ESX QL800.4 Class D 4-Channel Amplifier [pdf] Owner's Manual QL800.4 Class D 4-Channel Amplifier, QL800.4, Class D 4-Channel Amplifier

References

- ESX - Car Audio Systems