

# PA4.6DA

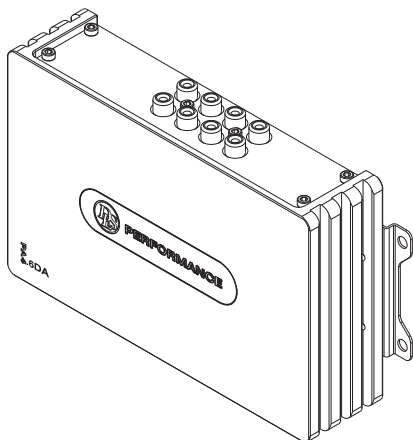
User Manual

DSP Class AB amplifier



# PERFORMANCE





### Welcome to DLS!

Thank you for buying a DLS Performance DSP amplifier. For us, it's all about the sound experience. We care deeply about sound and construction quality. In order for your experience to be as optimal as possible, it is important that you fully read this manual, preferably before you start your installation. Keep the manual in a safe and accessible place for future reference.

Your DSP amplifier must be installed correctly in order to work as intended. Make sure you have all necessary tools nearby before starting and that you are completely confident in how to proceed. If you feel the slightest uncertainty; feel free to take the help of an experienced installer or a car audio dealer.

### Warranty

This DSP amplifier is covered by warranty, depending on the conditions in the country where it is sold. If the product is returned for service, please include the original dated receipt with the product.

### DECLARATION OF CONFORMITY

DLS DSP amplifiers for vehicles are manufactured in accordance with the EU directive EEC 95/54 (72/245/ EEC) and are marked with the approval number. They are also marked in accordance with the WEEE-directive 2012/19/EC. The products are also produced in accordance with the EU RoHS directive 2015/863/EU.

# DLS PERFORMANCE

## PA4.6DA

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DLS products are engineered by DLS Sweden,  
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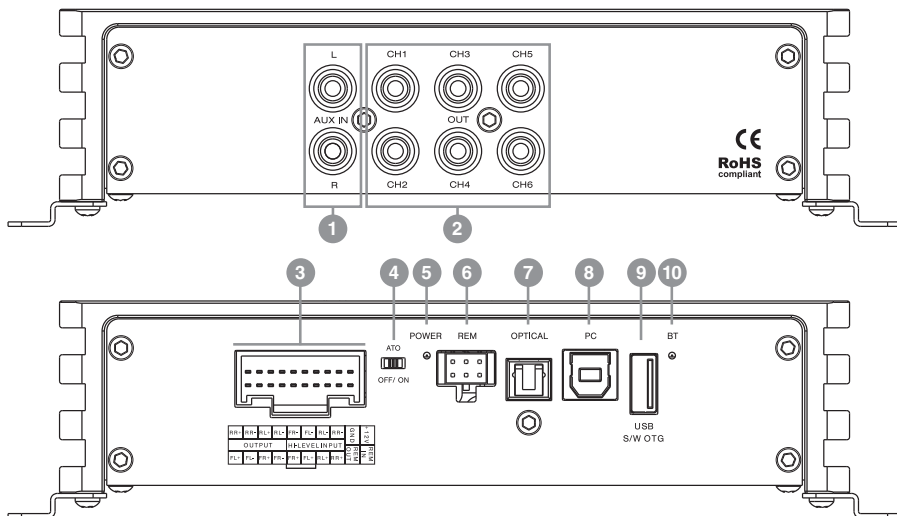
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[www.dls.se](http://www.dls.se)

**Designed & Sound tuned in Sweden.**



# Product overview



|    |  |
|----|--|
| 1  | <b>AUX IN</b><br>RCA input for AUX audio sources, providing the ability to connect and play additional audio sources through the DSP amplifier for versatile sound options.  |
| 2  | <b>OUT</b><br>6-Channel DSP RCA Output. This output allows you to connect the DSP to external amplifiers or audio components, enabling multi-channel audio distribution for enhanced sound performance.  |
| 3  | <b>CONNECTIONS</b><br><b>A) POWER:</b> Connector for power input.<br><b>B) 4-CHANNEL HIGH-LEVEL INPUT:</b> This terminal connects to the enclosed cable harness. Ensure that only the included original cable is used to connect the amplifier to your head unit or car stereo.<br><b>C) 4-CHANNEL SPEAKER OUTPUT:</b> Connect your speakers to this output based on your sound system configuration for proper audio distribution. This layout allows for efficient setup and operation of the DLS PA4.6DA DSP amplifier, providing multiple input options and easy integration with your vehicle's audio system. |
| 4  | <b>ATO/ACC</b><br>Selects between Auto input and ACC input modes, offering flexibility in how the amplifier is triggered.  |
| 5  | <b>POWER</b><br>Power indicator light. Displays the operational status of the DSP amplifier.   |
| 6  | <b>REMOTE</b><br>Terminal for connecting an external remote controller (sold separately) to manage the DSP amplifier's functions remotely.   |
| 7  | <b>OPTICAL INPUT</b><br>Supports optical input for digital audio sources, providing high-quality sound transmission.   |
| 8  | <b>PC</b><br>USB input designed for connecting a PC or laptop. This allows you to manage and configure the DSP settings of the amplifier using the DSP software.   |
| 9  | <b>USB-OTG</b><br>USB port for connecting a USB flash drive or OTG audio source. The audio input can be switched via the software. Can also be used for software update. OTG cable is required.  |
| 10 | <b>BT</b><br>Bluetooth indicator light. Indicates the status of the Bluetooth connection.  |



# Features

## The DSP amplifier include the following features:

- Performance Advantage DSP Class AB Amplifier
- Cirrus Logic DSP Chip 24Bit/192kHz Sample Rate
- Output: 6 RCA / 4x25W RMS (4Ω) / 4x50W RMS (2Ω)
- Input: 4 High-level / AUX / Optical / USB-OTG / BT 5.1
- Crossover: 6CH / 6dB – 48dB Adjustable Slopes
- EQ: GEQ / PEQ / 6CH 31-band -18dB - +12dB / 0.1dB Steps
- Time Alignment: 6CH 0-15ms / 0.021ms Steps
- Autosave Feature / 10 Memory Presets / Windows GUI

# Pre-installation

## DSP amplifier location

### IMPORTANT!

Allow air circulation around the DSP amplifier.

The DLS Performance series of DSP amplifiers have a compact design that allows great flexibility in mounting. You can mount it under a seat or in the trunk.

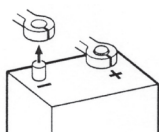
When selecting a location, keep in mind that the amplifier generates heat. Choose a location where air can circulate freely around the DSP amplifier. Do not cover the DSP amplifier with carpets or hide behind trim panels. Do not mount the DSP amplifier in an inverted or upside-down position.

Check all locations and placements carefully before making any cuts, drilling any holes or making any connections.

## Disconnect battery

Before you start the process of installing an amplifier, disconnect and secure the negative terminal from your battery/power source. This will prevent the risk of damaging yourself or the products.

Place the disconnected terminal in a secure and isolated location away from any possible connection belonging to the battery/power source system.



# Installation

## Tools and materials

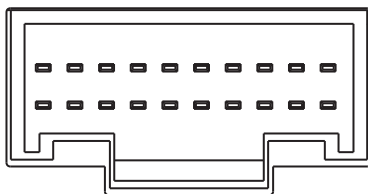
### TOOLS

- Insex, Flat and Phillips screwdrivers or bits.
- Wire cutter.
- Wire stripper.
- Electric drill with drill bits.
- Crimping tool.
- Digital multimeter or test lamp.
- Wire brush, scraper or a piece of an abrasive sheet to remove paint for a good ground connection.
- Grease to protect the ground connection from oxidation.

## Power wiring

### POWER TERMINAL (+12V)

Connect the **YELLOW** cable to +12Volt using a power cable between 15 AWG/1.5mm<sup>2</sup> and 11 AWG/4mm<sup>2</sup>. Use a ring crimp terminal to securely connect the cable to the battery. For a 1.5mm<sup>2</sup> cable, a 15 Amp fuse is recommended. Position the fuse holder as close to the vehicle's battery positive terminal (+) as possible. This fuse is essential for protecting against cable fires!



|        |     |     |     |                |     |     |     |        |      |
|--------|-----|-----|-----|----------------|-----|-----|-----|--------|------|
| RR+    | RR- | RL+ | RL- | FR-            | FL- | RL- | RR- | GND    | +12V |
| OUTPUT |     |     |     | HI-LEVEL INPUT |     |     |     | REM IN | REM  |
| FL+    | FL- | FR+ | FR- | FR+            | FL+ | RL+ | RR+ | REM    |      |

Recommended fuse rating for PA4.6DA: 15A

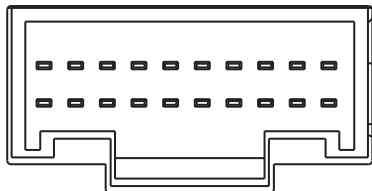
**NOTE!** Max fuse value is always related to cable size & quality.

Be sure to use a rubber grommet or a plastic insulating tube wherever the cable passes through the firewall or other areas where it could become pinched. Secure the cables using wire ties to existing wiring in the engine compartment to prevent movement.



### GROUND TERMINAL (GND)

Connect the **BLACK** ground cable to a solid, unpainted metal chassis ground for a reliable electrical connection. Use same size as +12Volt cable. A ground cable between 15 AWG/1.5mm<sup>2</sup> and 11 AWG/4mm<sup>2</sup> is recommended.



|        |     |     |     |                |     |     |     |     |      |
|--------|-----|-----|-----|----------------|-----|-----|-----|-----|------|
| RR+    | RR- | RL+ | RL- | FR-            | FL- | RL- | RR- | GND | +12V |
| OUTPUT |     |     |     | HI-LEVEL INPUT |     |     |     | REM | REM  |
| FL+    | FL- | FR+ | FR- | FR+            | FL+ | RL+ | RR+ | OUT | IN   |

Clean the metal surface with a wire brush, scraper, or abrasive sheet to ensure a proper connection. Use one or two lock washers to secure the ground wire. After securing the connection, protect it with silicone grease or paint to prevent corrosion.

### POWER LIGHT / PROTECT LIGHT

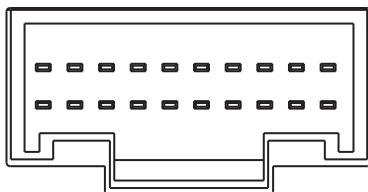
The power indicator (blue) is lit when the DSP amplifier is powered on

The protect indicator (red) is lit when the DSP amplifier shuts down due to overheating or a short circuit (e.g., speaker failure). If the red protect LED light turns on, power off your audio system to reset the amplifier. If the red light remains on, contact your local dealer for further assistance.



### REMOTE TERMINAL (REM)

When using an RCA cable for the signal input:



|        |     |     |     |                |     |     |     |     |      |
|--------|-----|-----|-----|----------------|-----|-----|-----|-----|------|
| RR+    | RR- | RL+ | RL- | FR-            | FL- | RL- | RR- | GND | +12V |
| OUTPUT |     |     |     | HI-LEVEL INPUT |     |     |     | REM | REM  |
| FL+    | FL- | FR+ | FR- | FR+            | FL+ | RL+ | RR+ | OUT | IN   |

Connect the radio power antenna lead = remote turn on/off from the car stereo to the DSP amplifier remote REM IN connection (**RED** cable). This turns on the DSP amplifier whenever the car stereo is turned on. You can either use the built-in remote cable in the RCA cable itself or use a separate cable.

If there is no remote voltage available from the stereo, you must connect to the ignition key or any accessories fuse.

To avoid potential interference, we recommend using a separate remote wire and routing the RCA cable away from the remote wire, power cables, and speaker cables. This minimizes the chance of any disturbances entering the amplifier through the remote voltage.

When using high-level input, the amplifier will automatically turn on when the car stereo is switched on.

REM OUT connector (**BLUE** cable) will turn other devices/amplifiers on when the DSP amplifier have started.



## Audio wiring

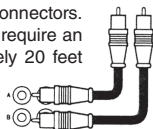
### LOW-LEVEL INPUT WIRING

Inputs can either be low-level (from the RCA output of the car stereo) or high-level (from the car stereo speaker output). For optimal sound quality, low-level (RCA) input is preferred.

#### Important!

**Use either the low-level or high-level input, do not use both at the same time.**

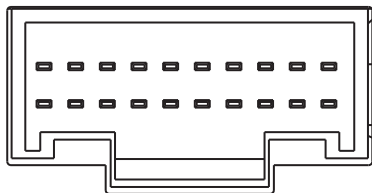
For best results, use a pair of shielded stereo audio cables with RCA connectors. Most trunk-mounted amplifiers require an RCA cable that is approximately 20 feet (5-6 meters) in length.



### HIGH-LEVEL INPUT WIRING

Most head units are pre-installed from the car factory and have no RCA output, in this case you can take the signal from the speaker output instead. Use either a separate remote cable or let the high-level signal automatically start the amplifier.

Connect left and right speaker wires coming from the car stereo to the high-level input as shown. You must connect both plus and minus as the inputs are balanced, connecting plus only gives lower level and bad sound quality. By changing the polarity of plus and minus, you can change the phase.



|        |     |     |     |                |     |     |     |     |      |
|--------|-----|-----|-----|----------------|-----|-----|-----|-----|------|
| RR+    | RR- | RL+ | RL- | FR-            | FL- | RL- | RR- | GND | +12V |
| OUTPUT |     |     |     | HI-LEVEL INPUT |     |     |     | REM | REM  |
| FL+    | FL- | FR+ | FR- | FR+            | FL+ | RL+ | RR+ | REM | REM  |

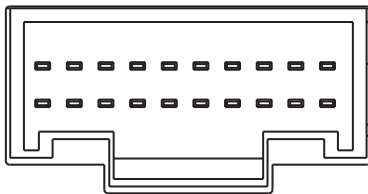
The high-level input connector wires follow the standard DIN-color coding. However, the car's wiring loom may use different color codes. When using high-level inputs, the amplifier's turn-on signal is derived from the high-level input itself, eliminating the need for a separate remote wire.

### HARNESS CONNECTOR INPUT PINOUT

|     |               |                |                                 |
|-----|---------------|----------------|---------------------------------|
| FL+ | Front Left +  | White          | Connect left front speaker (+)  |
| FL- | Front Left -  | White / Black  | Connect left front speaker (-)  |
| FR+ | Front Right + | Grey           | Connect right front speaker (+) |
| FR- | Front Right - | Grey / Black   | Connect right front speaker (-) |
| RL+ | Rear Left +   | Green          | Connect left rear speaker (+)   |
| RL- | Rear Left -   | Green / Black  | Connect left rear speaker (-)   |
| RR+ | Rear Right +  | Purple         | Connect right rear speaker (+)  |
| RR- | Rear Right -  | Purple / Black | Connect right rear speaker (-)  |

### HIGH-LEVEL OUTPUT WIRING

The PA4.6DA features four internal amplification channels, which can be configured via the DSP software. These channels can be set as front and rear outputs for full-range speakers or configured for a two-way system with separate midrange and tweeter channels.



|        |     |     |     |                |     |     |     |     |      |
|--------|-----|-----|-----|----------------|-----|-----|-----|-----|------|
| RR+    | RR- | RL+ | RL- | FR-            | FL- | RL- | RR- | GND | +12V |
| OUTPUT |     |     |     | HI-LEVEL INPUT |     |     |     | REM | REM  |
| FL+    | FL- | FR+ | FR- | FR+            | FL+ | RL+ | RR+ | REM | REM  |

The high-level output connector wires follow the standard DIN color coding. However, the car's wiring loom may use different color codes.

### HARNESS CONNECTOR OUTPUT PINOUT

|     |               |                |                                 |
|-----|---------------|----------------|---------------------------------|
| FL+ | Front Left +  | White          | Connect left front speaker (+)  |
| FL- | Front Left -  | White / Black  | Connect left front speaker (-)  |
| FR+ | Front Right + | Grey           | Connect right front speaker (+) |
| FR- | Front Right - | Grey / Black   | Connect right front speaker (-) |
| RL+ | Rear Left +   | Green          | Connect left rear speaker (+)   |
| RL- | Rear Left -   | Green / Black  | Connect left rear speaker (-)   |
| RR+ | Rear Right +  | Purple         | Connect right rear speaker (+)  |
| RR- | Rear Right -  | Purple / Black | Connect right rear speaker (-)  |

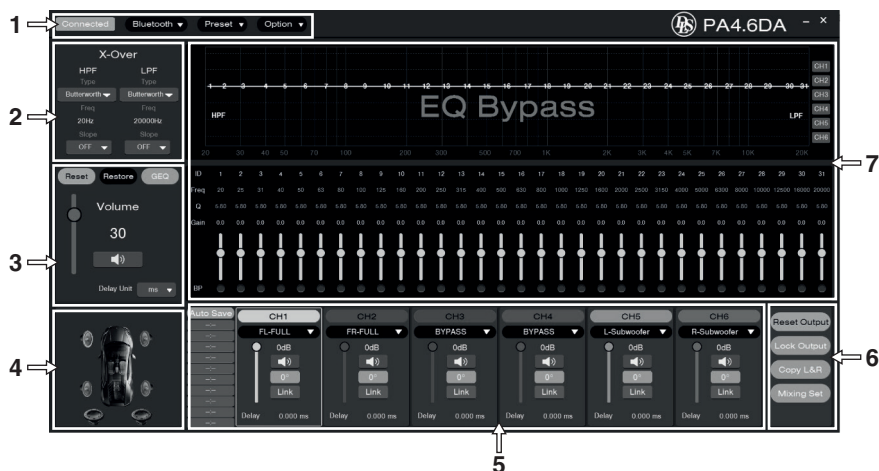


# Tuning software

## General information

- Download the PC tuning software from the official DLS website [www.dls.se](http://www.dls.se).
- Connect the DSP amplifier to your computer using the supplied USB cable.

Once the software is launched, the main interface will open automatically, presenting all key functions for immediate access.



### 1. Functional and intuitive software

The software is designed for ease of use, with a clean, user-friendly interface. All key functions are organized in a single window for intuitive navigation and control.

### 2. Advanced x-over management

The crossover section enables precise control of crossover frequencies and filter slopes for each individual channel. Filter type and slope can be set independently for each channel, ensuring seamless frequency division between different speaker types.

### 3. System controls

Manage master volume and mute, select delay units (ms/cm/in), switch between EQ modes (PEQ/GEQ), and reset or restore EQ settings.

### 4. Speaker assignment

Select the vehicle speaker position to assign its corresponding DSP output channel.

### 5. Channel configuration

Each channel supports precise tuning of output level, polarity, and time alignment for accurate imaging. Channels can be linked to synchronize level, delay, and polarity across selected channels.

### 6. Quick adjustment

Reset the selected output, lock output to prevent changes, copy settings between left and right channels, and configure input mixing.

### 7. 31-band graphic equalizer

Choose between Parametric EQ (PEQ)—with adjustable gain, Q-factor, and frequency per band. Or a 31-band Graphic EQ (GEQ) with adjustable gain at fixed center frequencies. Real-time visual feedback aids precise tonal balance.

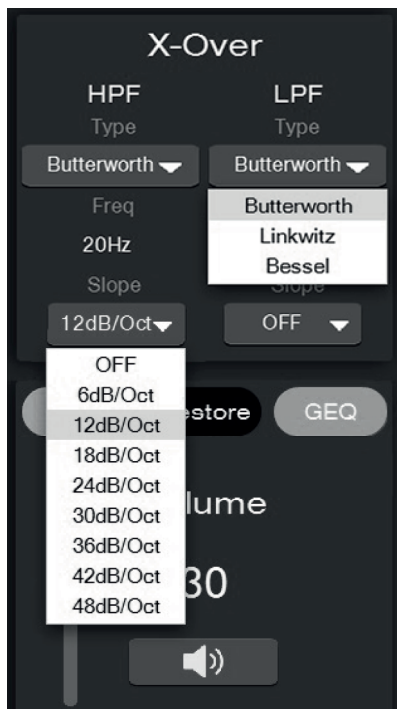




## Advanced x-over management

The crossover section enables precise control of crossover frequencies and filter slopes for each individual channel. Filter type and slope can be set independently, ensuring seamless frequency division between different speaker types. The AUX output signal can be freely adjusted, enabling tailored signal routing and tuning flexibility.

- Both high-pass (HPF) & low-pass (LPF) settings can be adjusted independently. They can also be used together for a band-pass function.
- Users can select between filter types such as Bessel, Butterworth, and Linkwitz-Riley.
- Depending on the selected type, slope options range from 6 dB/oct to 48 dB/oct, allowing for fine-grained control over frequency separation between drivers (e.g., tweeters, midrange, subwoofers). This section is essential for achieving seamless integration and accurate phase response in multi-way audio systems.



## 31-band graphic equalizer

The EQ section offers full-spectrum tuning with adjustable gain, Q-factor, and frequency per band. Real-time visual feedback assists in achieving precise tonal balance. Users can switch between PEQ (Parametric EQ) and GEQ (Graphic EQ) modes depending on their tuning needs.

### RESET EQ

Returns the 31-band EQ to Bypass (no filters applied). All EQ parameters—frequency, Q, and gain—are restored to their default values, providing a clean starting point for new tuning. (Only EQ parameters are affected.)



### RESTORE EQ

Toggle between the current EQ settings and Bypass (pass-through). In Bypass, all band gains are set to 0 dB, while frequency and Q remain visible and unchanged — ideal for quick A/B comparisons. Toggling back restores the previously active EQ settings. (Presets are not altered unless you save.)





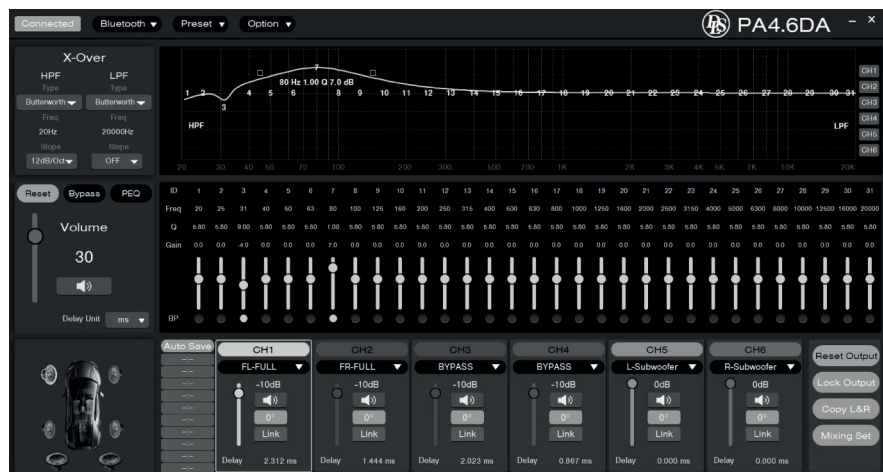
## 31-band graphic equalizer

### SWITCHING EQ MODES

Click PEQ or GEQ to switch modes.

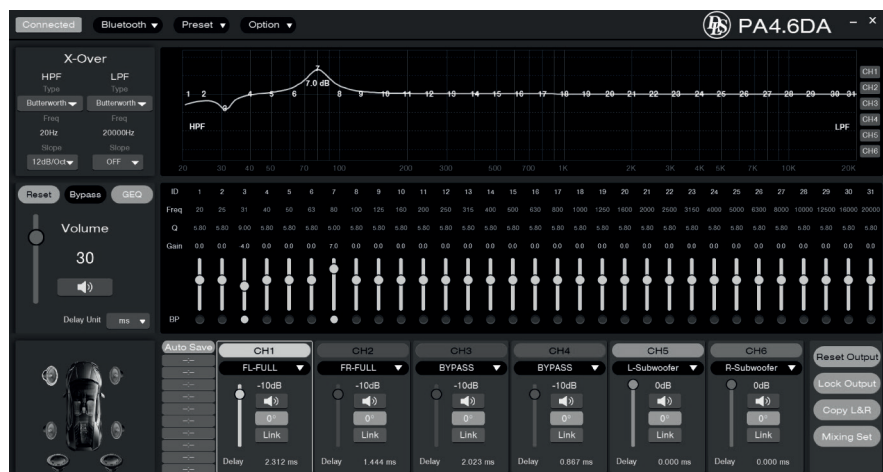
### PARAMETRIC EQ (PEQ) MODE

In Parametric EQ (PEQ) mode, frequency and Q values can be adjusted for each band, providing advanced tuning flexibility.



### GRAPHIC EQ (GEQ) MODE

In Graphic EQ (GEQ) mode, only the gain values can be adjusted, and the frequency and Q values are fixed for each band. These tools are useful for both professional installers and advanced users who want to quickly compare or reset their EQ settings.

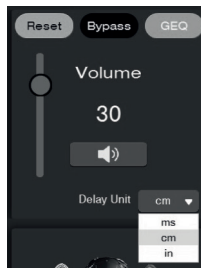
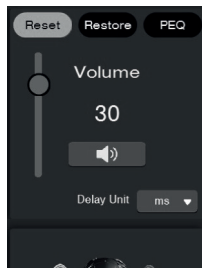




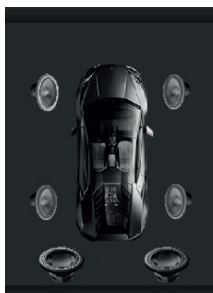
## System control

Manage core functions from a single panel:

- **Master Volume & Mute:** adjust overall level or mute instantly.
- **Delay Units:** choose ms / cm / in for time alignment.
- **EQ Mode:** toggle between 31-band PEQ and GEQ.
- **Reset / Restore EQ:** reset to defaults or toggle between active EQ and Bypass for quick A/B checks.



## Speaker assignment



Assign output channels to your vehicle's speaker positions for correct routing and optimal acoustic performance.

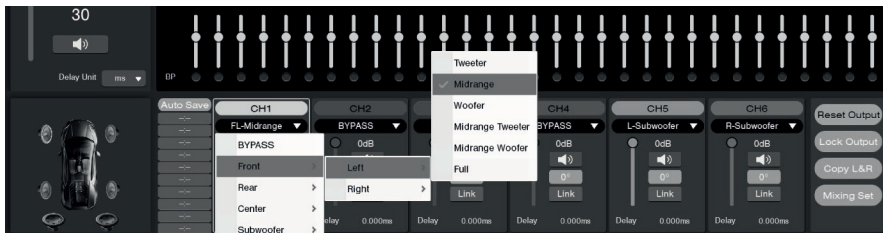
### CHANNEL CONFIGURATION

Each channel supports precise adjustment of output level, polarity, and time alignment (delay) for accurate imaging. Channels can also be linked to synchronize level, delay, and polarity across selected outputs.



In the Channel configuration section, you can configure key parameters for each individual channel:

- **Speaker assignment:** Specify the speaker type (full-range, tweeter, midrange, woofer, subwoofer) and the channel location (Left/Right, Front/Rear, Center or Subwoofer) for the selected output.
- **Volume Control:** Adjust the output level for each channel.
- **Mute:** The sound from the specific channels mutes instantly.
- **Polarity Settings:** Set phase orientation 0° or 180° to ensure proper summation and imaging across drivers.
- **Link Settings:** Link channels for mirrored adjustments (ideal for stereo or symmetrical layouts).
- **Time Delay:** Set delay in ms / cm / in to align arrival times at the listening position.



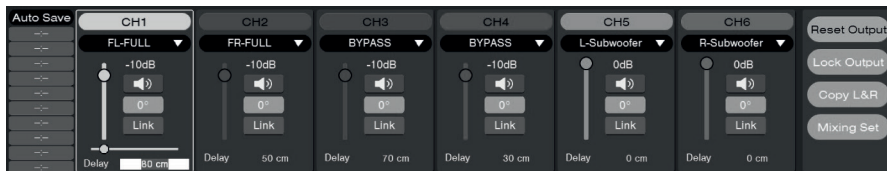
These adjustments are essential for accurate imaging, coherent staging, and stable spatial balance in the vehicle.



## Speaker assignment

### TIME ALIGNMENT

Time alignment ensures that sound from all speakers reaches the listening position simultaneously, improving imaging and coherence. Select the farthest speaker as the reference (set to 0 ms / cm / in) and add delay to all closer speakers so their arrivals coincide at the listening position.



### HOW TO TIME ALIGN

#### 1. Measure distances

Measure from your listening position (reference point) to each connected speaker.

#### 2. Choose the reference (farthest speaker)

Identify the farthest speaker and set its delay to 0 ms (or 0 cm) in the DSP software. This is your reference.

#### 3. Calculate distance offsets

For every other speaker, compute:  $\text{Offset(cm)} = \text{Distance farthest} - \text{Distance speaker}$

Example: If the farthest speaker is 150 cm away and others are at 70/80/90/100/120 cm:

- $150 - 70 = 80$  cm
- $150 - 80 = 70$  cm
- $150 - 90 = 60$  cm
- $150 - 100 = 50$  cm
- $150 - 120 = 30$  cm

#### 4. Convert distance to delay

Sound travels  $\approx 34$  cm/ms ( $\approx 343$  m/s at  $-20$  °C).  $\text{Delay (ms)} = \text{Offset (cm)} \div 34$ :

- $80 \div 34 = 2.35$  ms
- $70 \div 34 = 2.06$  ms
- $60 \div 34 = 1.76$  ms
- $50 \div 34 = 1.47$  ms
- $30 \div 34 = 0.88$  ms

#### 5. Enter delay values

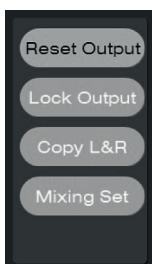
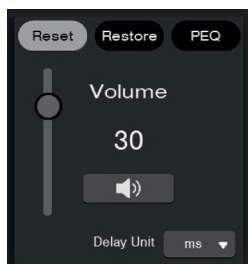
Input the calculated delays for each speaker. Either directly in ms or as cm/in. The Delay Unit can be changed in the system control area.

### NOTE!

After applying the calculated values, listen to the result and fine-tune by ear for optimal imaging and center focus.



## Quick access tools



Use the PC software quick-access tools to:

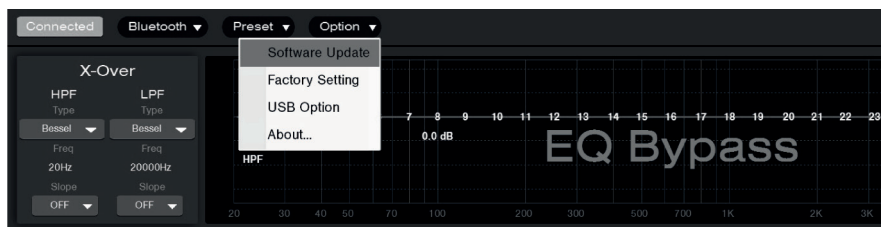
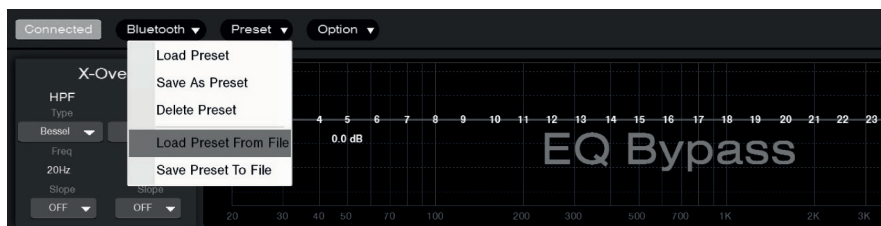
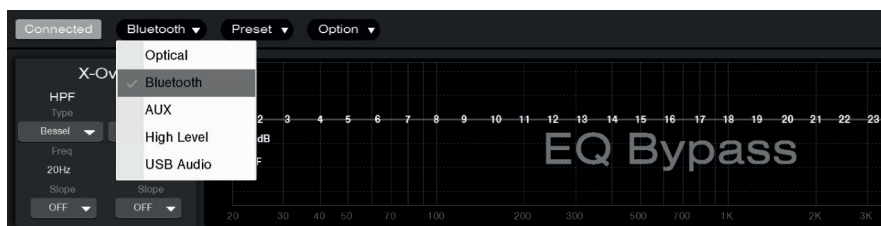
- Resetting the EQ to factory defaults.
- Restoring pass-through mode.
- Bypassing or locking output channels.
- Linking EQ settings across multiple channels.

## Additional features

### PC CONNECTION AND INPUT SELECTION

The main menu allows you to manage the following system-level functions:

- System connection to PC.
- Select input sources.
- Handle presets (incl. saving and loading files).
- Firmware updates and factory resets.





## Additional features

### MIXING SET ADJUSTMENTS

The Mixing Set menu enables individual adjustments per selected input source (e.g., High-Level or Optical). These adjustments ensure optimal signal balance before DSP processing. With the combination of intuitive software and advanced tuning capabilities, the DLS PA4.6DA provides unmatched flexibility and precision for demanding in-car audio environments.



### AUTO SAVE

Press the Auto Save button and the current settings will be saved automatically (1). Auto-saved settings are stored as .spf files in the AutoSave folder inside the DLS PA4.6DA software directory. They can be loaded at any time from the Preset drop-down list (2).

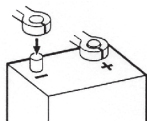




# Testing

## RECONNECT BATTERY

When wiring is complete, re-connect the battery negative terminal.



## TEST POWER WIRING

1. Turn on the head unit but do not turn up the volume. The amplifier power light should come on. If not, check the remote, high-level input cables and +12 Volt wires. Check the ground connection.
2. Turn up the head unit volume slightly. All speakers should operate. If not, check wiring connections at amplifier and speakers.

## TEST SPEAKER CONNECTIONS

Make sure the speakers are connected right. Use the balance control on the head unit to make sure right channel is on right speaker etc. If speakers don't play at all, one or both speaker wires may be disconnected.

# Troubleshooting

If any issues occur during installation or later, this guide may help you diagnose and resolve it.

## THE DSP AMPLIFIER IS DEAD

1. Check power lead, ground and remote connections at the amplifier using a multi meter.
2. Check the battery terminal connections.
3. Check the power lead fuse or circuit breaker. If fuse damage continues, inspect the power lead for short circuits.
4. Check the amplifier protection fuses. Are these broken change to new ones with the same value. If short circuiting continues, contact your local DLS dealer. A fault may be in the amplifier.
5. To start the amplifier requires a remote voltage of 9-15 volt. Check the voltage with a multi meter.

## DSP AMPLIFIER PROTECTION FUSE BLOWS AT LOW VOLUME

1. One or more speaker cables are shorted. Make an insulation test with a multi meter. The cables must not have a connection to earth.

## DSP AMPLIFIER PROTECTION FUSE BLOWS AT LOW VOLUME

The amplifier is overheating due to inadequate ventilation. Check so the mounting position is clear:

1. Move the amplifier to a location with better ventilation.
2. Install one or two fans to cool down the heat-sink.
3. Overheating can also be caused by impedance load below the level permitted.

## NO OUTPUT FROM ONE OR MORE SPEAKERS

1. No source is connected.
2. high-level input cables are not connected properly.
3. Start the DSP software to see if:
4. Mute function is activated.
5. Check so the input channels are selected correctly.
6. Check all speaker cable connections.
7. Check signal lead plugs and cables.



# Professional tips

## Noise problems

### WHINING NOISE VARYING WITH ENGINE REVOLUTIONS

Do this:

1. Rewire the power supply (12 V) to source unit direct from battery.
2. Rewire ground wire from source unit to clean position on chassis.
3. Check all power connections to ensure that they are clean and tight.
4. Check quality of system ground connection.
5. Install a power capacitor with connections as close as possible to the alternator. This bypasses the noise at source and eliminates many issues with noise problems. In cars with a jump start connection, this provides a convenient connection point for the capacitor.

### CONSTANT WHINING NOISE

Do this:

1. Ensure that all equipment has a common ground point.
2. Check quality of earth strap connection from battery negative terminal to chassis.
3. Disconnect signal cables from the DSP amplifier to see if noise disappears. If so the leads are picking up noise. Test this by laying a new cable over the seats and reconnecting to the DSP amplifier. If the noise does not return, reroute original cable away from source of interference. If noise remains regardless of cable position, try to use so RCA signal cables of Coaxial type.

## Installation in trunk

When installing the DSP amplifier in the trunk, run the power wires along the same path as the other vehicle wiring. Many cars have insulated channels for wiring. You will have to remove the door sill trim and the carpet.

## Crimp connections

Purchase crimp connectors and crimping tool. Connectors are color coded.

1. Strip 1/4 inch (6mm) of insulation from the wire
2. Insert into connector
3. Crimp tightly

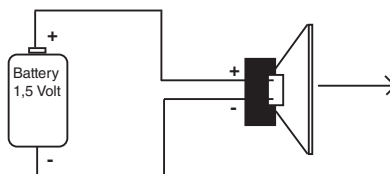
## Speaker polarity check

All speakers in a car audio system should be connected in phase (the same polarity). This ensures that all speaker cones move in the same direction. Speakers that are out of phase can result in lack of bass, and a poor stereo soundstage.

### CHECKING POLARITY:

Hold the - connection of the speaker wire to the - terminal of a 1.5 Volt flashlight battery. Tap the + wire on to the + terminal of the battery, and observe the movement of the cone. The cone should move outwards when the wire touches the battery, and inwards when the battery is removed. If it is the other way around, the speaker has been connected backwards and it must be removed and connected correctly.

If your system also has a subwoofer connected through a passive 6 or 12 dB crossover, try to connect this with various polarity and judge what sounds best. The phase shift in passive crossovers sometimes makes it necessary to change polarity.



**NOTE!** Tweeters can not be tested this way, double check the connections instead.

## Securing wires

Use wire ties to bundle together when possible. (But never bundle speaker wires or signal cables together with power wires).



## Speaker & power wires

Avoid running speaker and power wires alongside each other, as power cables can induce unwanted "siren" sounds in the speakers. For optimal performance, run speaker and power wires on opposite sides of the vehicle to minimize interference.



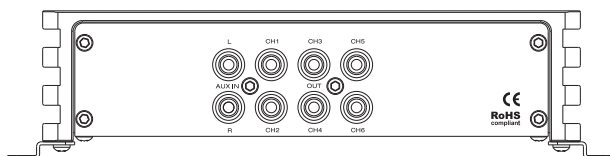
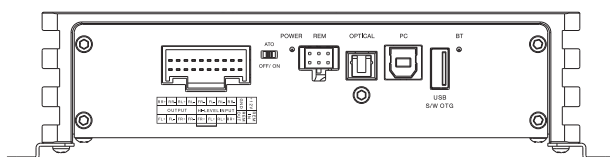
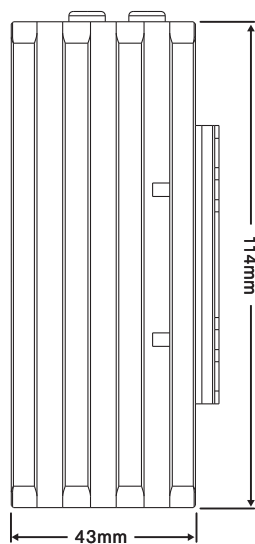
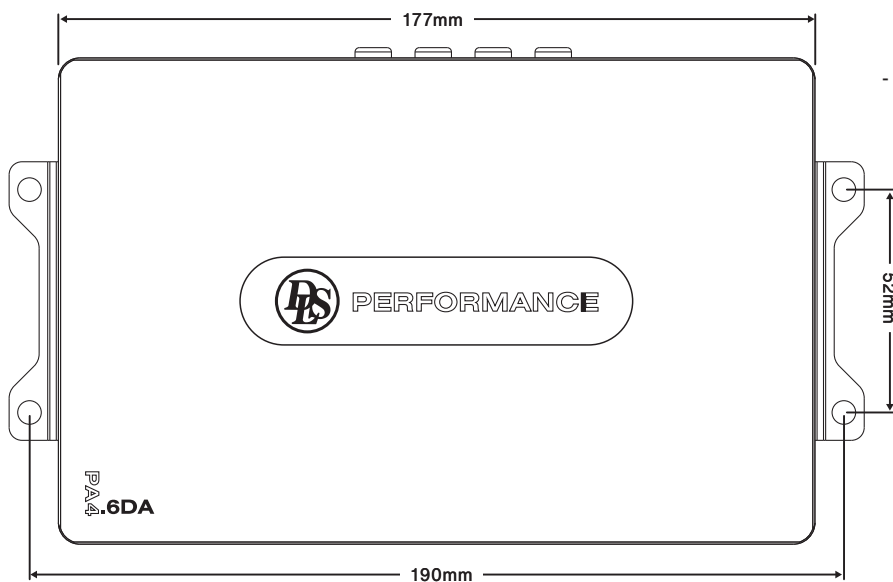


# Specifications

| PA4.6DA                            |  |
|------------------------------------|--|
| Amplifier class                    | AB   |
| High-level speaker input channels  | 4  |
| High-level speaker output channels | 4  |
| Power output RMS in 2 ohm          | 4x50 Watt  |
| Power output RMS in 4 ohm          | 4x25 Watt  |
| DSP RCA output channels            | 6  |
| Signal to noise ratio, A-weighted  | >100dB   |
| Frequency response                 | 20 Hz – 20 kHz   |
| High input impedance               | 10 ohm   |
| High input sensitivity             | 4 – 10V  |
| Low input sensitivity              | 0.5 – 2.5V   |
| DSP Processor                      | Cirrus Logic 24Bit/192kHz Sample Rate  |
| Crossover type                     | Bessel / Butterworth / Linkwitz-Riley.   |
| Crossover slope                    | 6CH / 6dB – 48dB Adjustable Slopes   |
| EQ                                 | GEQ / PEQ / 6CH 31-band -18dB - +12dB / 0.1dB Steps                                  |
| Time Alignment                     | 6CH 0-15ms / 0.021ms Steps   |
| Recommended Fuse Rating            | 15A  |
| PC Connection                      | USB 2.0  |
| Software / PC requirements         | Microsoft Windows (32/64bit) XP, Vista, Windows 7, Windows 8, Windows 10, Windows 11 |
| Dimensions HxWxD(mm)               | 199 x 116 x 48 mm (including installation feet)                                      |
| Dimensions HxWxD(inch)             | 7,83 x 4,56 x 1,89 inches (including installation feet)                              |
| Weight                             | 0,9 kg   |



## Dimensions



# Product markings



The crossed-out wheellie bin symbol means that the product, literature and packaging included must be taken to separate collection at the end of their working life. Do not dispose of these products as unsorted municipal waste: take them for recycling. For info on your nearest recycling point, check with your local waste authority.



This product has been granted with the CE certification mark to show that the product follows the health, safety, and environmental protection standards for products sold within the European Economic Area (EEA).



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PERFORMANCE