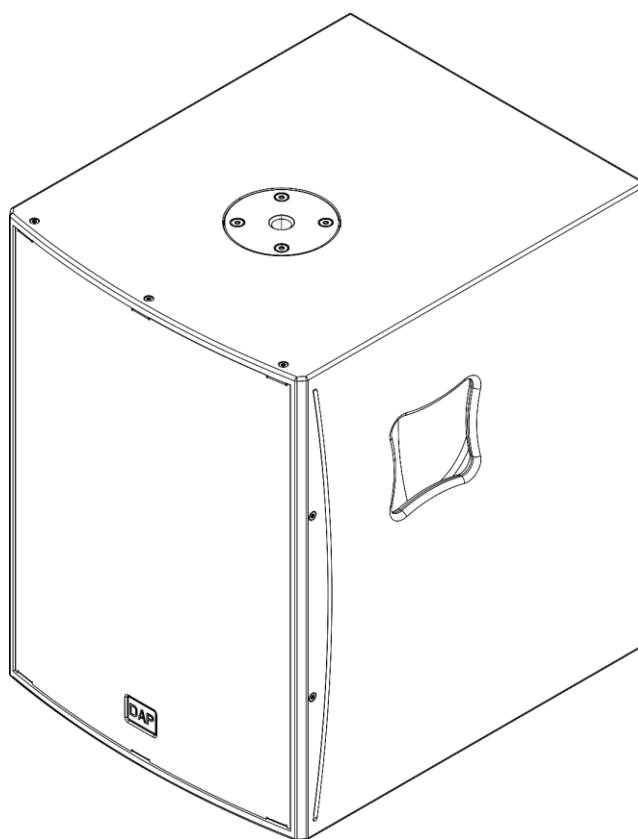


DAP

USER MANUAL



ENGLISH

NRG-12SA

V1

Product code: D3657

Preface

Thank you for purchasing this DAP product.

The purpose of this user manual is to provide instructions for the correct and safe use of this product.

Keep the user manual for future reference as it is an integral part of the product. The user manual shall be stored at an easily accessible location.

This user manual contains information concerning:

- Safety instructions
- Installation and operation of the device
- Intended and non-intended use of the device
- Maintenance procedures
- Troubleshooting
- Transport, storage and disposal of the device

Non-observance of the instructions in this user manual may result in serious injuries and damage of property.

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1. Introduction

1.1. Before Using the Product



Important

Read and follow the instructions in this user manual before installing, operating or servicing this product.

The manufacturer will not accept liability for any resulting damages caused by the non-observance of this manual.

After unpacking, examine the contents of the box. If any parts are missing or damaged, contact your Highlite International dealer.

Your shipment includes:

- DAP NRG-12SA
- Schuko to Power Pro cable (1,5 m)
- User manual

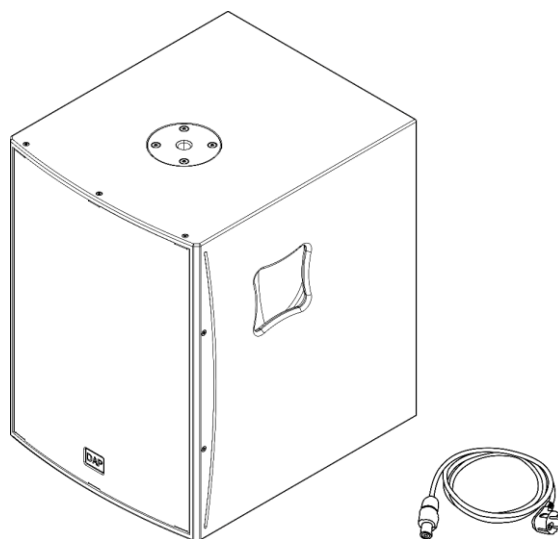


Fig. 01

1.2. Intended Use

This device is designed to be used as an active subwoofer. It is suitable only for indoor use. Any incorrect use may lead to hazardous situations and result in injuries and material damage.

Any other use, not mentioned under intended use, is regarded as non-intended and incorrect use.

1.3. Text Conventions








Throughout the user manual the following text conventions are used:

- References: References to chapters and parts of the device are in bold lettering, for example: "Refer to **2. Safety**", "press the **power switch (03)**"
- 0–255: Defines a range of values
- Notes: **Note:** (in bold lettering) is followed by useful information or tips

1.4. Symbols and Signal Words

Safety notes and warnings are indicated throughout the user manual by safety signs.







Always follow the instructions provided in this user manual.

	DANGER	Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.
	WARNING	Indicates an imminently hazardous situation which, if not avoided, could result in death or serious injury.
	CAUTION	Indicates a potentially hazardous situation, which, if not avoided, may result in minor or moderate injury.
	Attention	Indicates important information for the correct operation and use of the product.
	Important	Read and observe the instructions in this document.
	Electrical hazard	
		Provides important information about the disposal of this product.

1.5. Symbols on the Information Label

This product is provided with an information label. The information label is located on the backside of the device.

The information label contains the following symbols:

	This device is designed for indoor use.
	This device shall not be treated as household waste.
	This device falls under IEC protection class I.
	Read and follow the instructions in the user manual before installing, operating or servicing the device.
 	Caution: Risk of electric shock. Disconnect input power before opening. Warning: This appliance must be earthed.

2. Safety



Important
Read and follow the instructions in this user manual before installing, operating or servicing this product.

The manufacturer will not accept liability for any resulting damages caused by the non-observance of this manual.

2.1. Warnings and Safety Instructions



DANGER
Danger for children

For adult use only. The device must be installed beyond the reach of children.

- Do not leave various parts of the packaging (plastic bags, polystyrene foam, nails, etc.) within children's reach. Packaging material is a potential source of danger for children.



DANGER
Electric shock caused by dangerous voltage inside

There are areas within the device where dangerous touch voltage (> 120 V DC) may be present.

- Do not open the device or remove any covers.
- Do not operate the device if the covers or the housing are open.
- Disconnect the device from electrical power supply before service and maintenance, and when the device is not in use.



DANGER
Electric shock caused by short-circuit

This device falls under IEC protection Class I.

- Make sure that the device is electrically connected to ground (earth). Connect the device only to a socket-outlet with ground (earth) connection.
- Do not cover the ground (earth) connection.
- Do not bypass the thermostatic switch or fuses.
- Do not let the power cable come into contact with other cables. Handle the power cable and all connections with the mains with caution.
- Do not modify, bend, mechanically strain, put pressure on, pull or heat up the power cable.
- Make sure that the power cable is not crimped or damaged. Examine the power cable periodically for any defects.
- Do not immerse the device in water or other liquids. Do not install the device in a location where flooding may occur.
- Do not use the device during thunderstorms. Disconnect the device from the electrical power supply immediately.

**Attention
Power supply**

- Before connecting the device to the power supply, make sure that the current, voltage and frequency match the input voltage, current and frequency specified on the information label on the device.
- Make sure that the cross-sectional area of the extension cords and power cables is sufficient for the required power consumption of the device.

**Attention
General safety**

- Do not shake the device. Avoid brute force when installing or operating the device.
- If the device is exposed to extreme temperature variations (e.g. after transportation), do not switch it on immediately. Let the device reach room temperature before switching it on, otherwise it may be damaged by the formed condensation.
- If the device fails to work properly, discontinue the use immediately.

**Attention
This device shall be used only for the purposes it is designed for.**

This device is designed to be used as an active subwoofer. It is suitable only for indoor use. Any incorrect use may lead to hazardous situations and result in injuries and material damage.

- This device is not suitable for households.
- This device is not designed for permanent operation.
- This device does not contain user-serviceable parts. Unauthorized modifications to the device will render the warranty void. Such modifications may result in injuries and material damage.

**Attention
Before each use, examine the device visually for any defects.**

Make sure that:

- There are no deformations on the housing.
- The power cables are not damaged and do not show any material fatigue.

**Attention****Do not expose the device to conditions that exceed the rated IP class conditions.**

This device is IP20 rated. IP (Ingress Protection) 20 class provides protection against solid objects greater than 12 mm, such as fingers, and no protection against harmful ingress of water.

2.2. Requirements for the User

This product may be used by ordinary persons. Maintenance and installation may be carried out by ordinary persons. Service shall be carried out only by instructed or skilled persons. Contact your Highlite International dealer for more information.

Instructed persons have been instructed and trained by a skilled person, or are supervised by a skilled person, for specific tasks and work activities associated with the installation, service and maintenance of this product, so that they can identify risks and take precautions to avoid them.

Skilled persons have training or experience, which enables them to recognize risks and to avoid hazards associated with the installation, service and maintenance of this product.

Ordinary persons are all persons other than instructed persons and skilled persons. Ordinary persons include not only users of the product but also any other persons that may have access to the device or who may be in the vicinity of the device.

3. Description of the Device

The DAP NRG-12SA is an active subwoofer with a peak power of 1000 W (500 W continuous RMS). It has a 12" woofer with a dual 2,5" voice coil. The device has an internal DSP with 4 modes and a reverse phase switch.

3.1. Front View

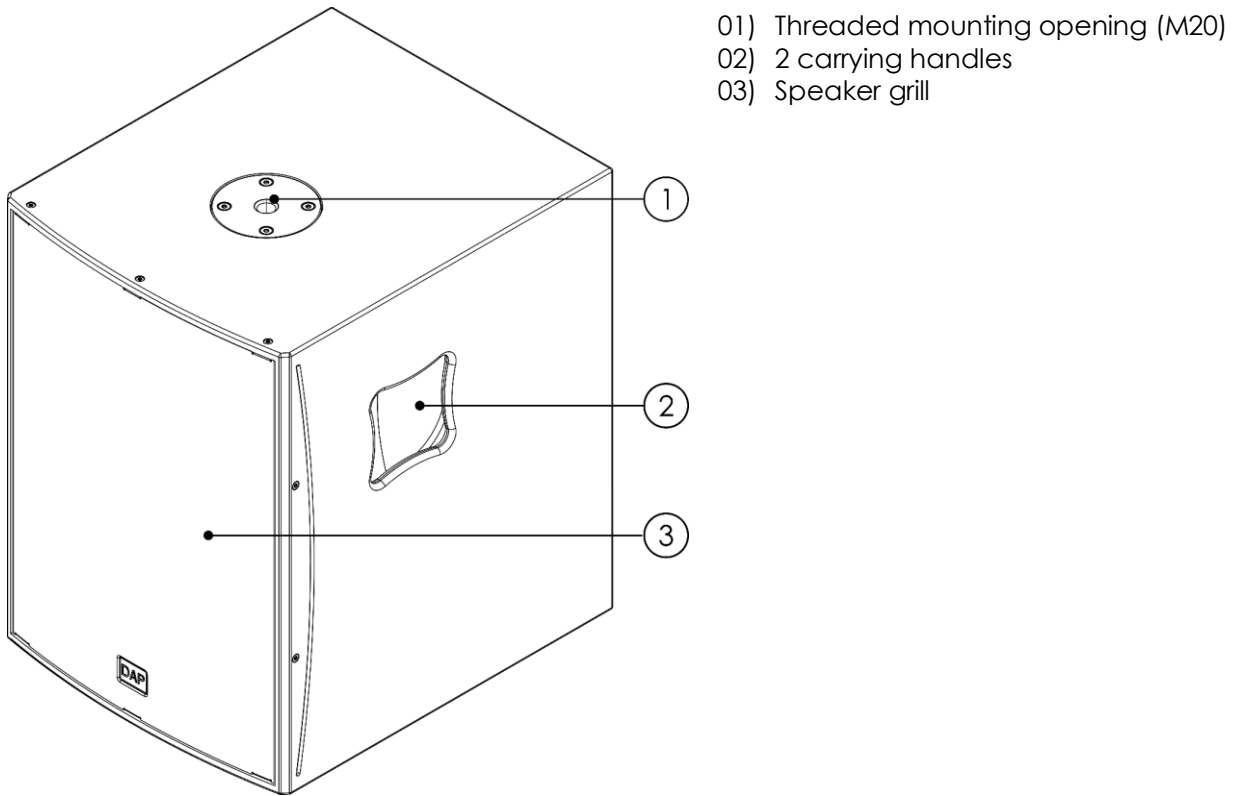
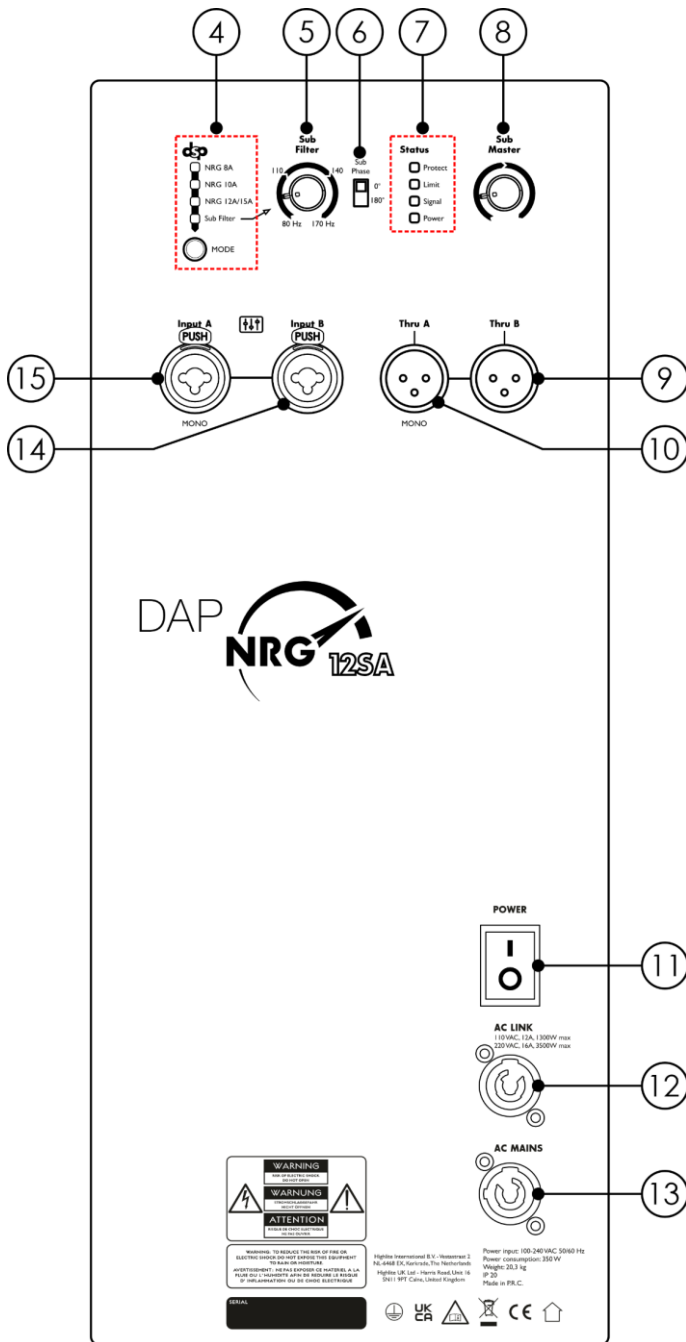


Fig. 02

3.2. Back View



- 04) DSP button and selector with LED indicators
- 05) Sub filter frequency control
- 06) Sub phase switch
- 07) Status LED indicators
- 08) Sub master gain control
- 09) 3-pin XLR connector THRU B
- 10) 3-pin XLR connector THRU A (mono)
- 11) Power switch (on/off)
- 12) Power Pro connector OUT (White)
- 13) Power Pro connector IN (Blue)
- 14) Combined (3-pin XLR/6,3 mm jack) connector IN B
- 15) Combined (3-pin XLR/6,3 mm jack) connector IN A (mono)

Fig. 03

3.3. Product Specifications

Model:	DAP NRG-12SA
Physical:	
Dimensions:	380 x 525 x 460 mm (W x H x D)
Weight:	20,3 kg
Outputs:	
RMS output power amplifier:	500 W
Peak output power amplifier:	1000 W
Main outputs:	2
Audio Specifications:	
THD level:	< 0,3 %
Signal-to-noise ratio:	> 95 dB
AD/DA converter sample rate:	48 kHz
Audio latency:	1,2 ms
Amplifier technology:	Class D
Speaker system:	Subwoofer
Speaker sensitivity (1 W/1 m):	94 dB
Maximum SPL at 1 m:	120 dB
Frequency response (-6 dB):	50–170 Hz
Woofer diameter:	12 "
Woofer voice coil:	2,5 "
Woofer magnet type:	Ferrite
Dispersion angle (horizontal):	360°
Dispersion angle (vertical):	180°
Internal Storage:	
User presets capacity:	4
Electrical:	
Input voltage:	100–240 V AC, 50/60 Hz
Power consumption:	350 W
Construction:	
Housing:	Plywood
Color:	Black
IP rating:	IP20
Connections:	
Main output connection:	2 x 3-pin XLR connector
Mono input connection:	2 x 3-pin XLR/6,3 mm jack connector
Power connection:	Power Pro connector IN (Blue) Power Pro connector OUT (White)
Product Properties:	
Pole mount:	M20
LED indicators:	DSP mode, Limit, Power, Protect, Signal
Speaker grill material:	Steel
Thermal:	
Maximum ambient temperature t_a :	40 °C
Minimum ambient temperature t_a :	0 °C

3.4. Optional Accessories

You can additionally purchase the following accessories:

- [D8610](#) Distance Tube 35 mm
- [D8611](#) Distance Tube M20

3.5. Dimensions

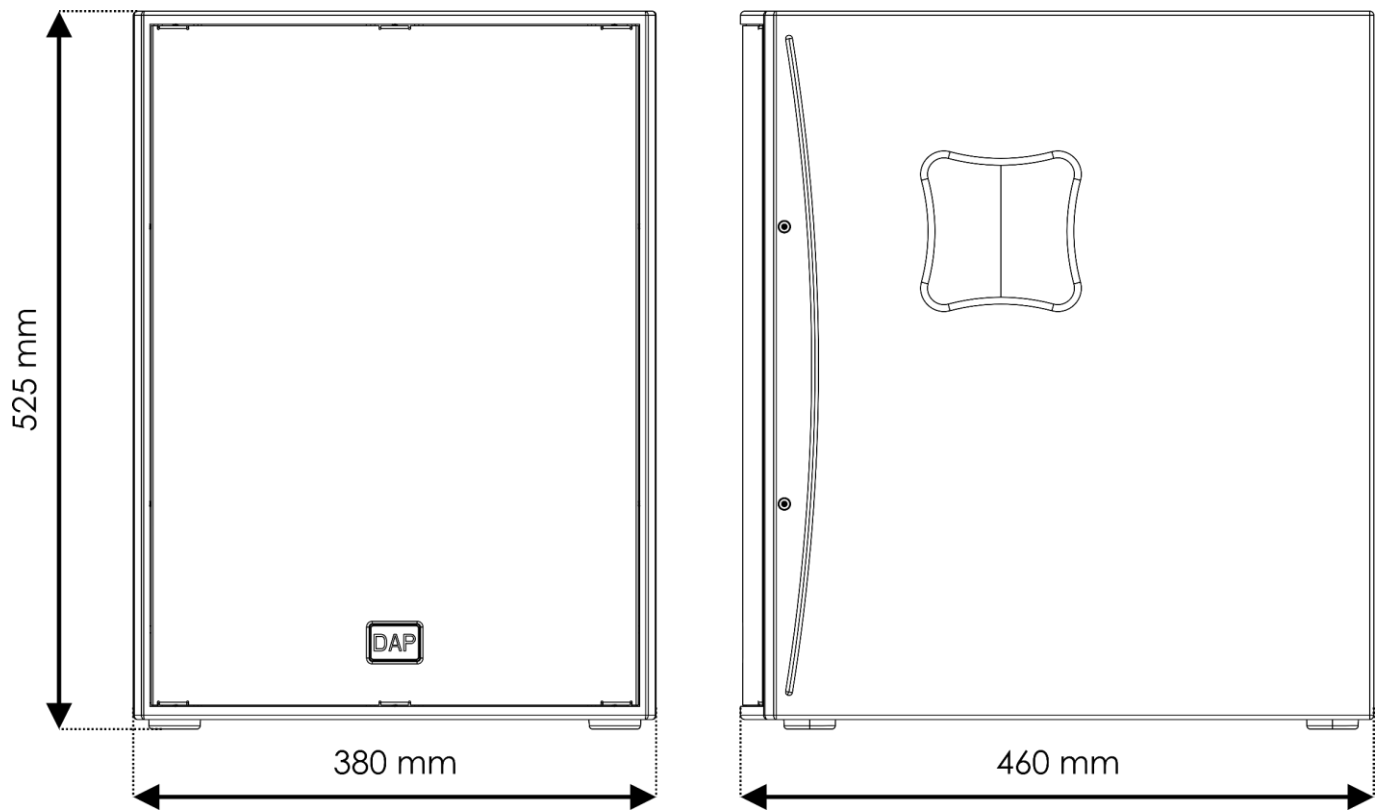


Fig. 04

4. Installation and Setup

4.1. Warnings and Precautions



Attention

Connect all cables before supplying power.

Disconnect power supply before connecting or disconnecting cables.

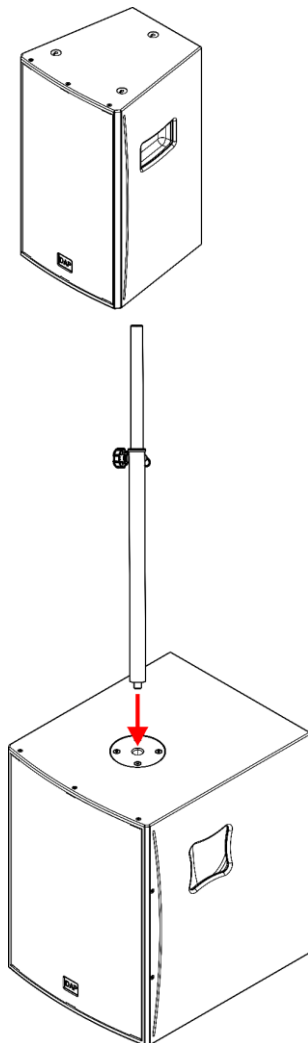
4.2. Installation Site Requirements

- The device must be installed only indoors.
- The device must be placed on a level stable surface.
- The maximum ambient temperature $t_a = 40\text{ °C}$ must never be exceeded.
- The relative humidity must not exceed 90 % with an ambient temperature of 40 °C.

4.3. Stacked Installation with a Full-Range Loudspeaker

You can stack a full-range loudspeaker on top of the device with a distance pole. See **3.4. Optional Accessories** on page 11.

To stack the 2 devices with a distance pole, follow the steps below:



- 01) Put the device on a level stable surface.
- 02) Insert the distance pole into the **threaded mounting opening (01)**.
- 03) Turn the distance pole clockwise to secure the distance pole to the device.
- 04) Install the full-range loudspeaker on top of the distance pole.

Fig. 05

4.4. Setup with an Audio Mixer

You can use the NRG-12SA in a setup with an audio mixer. In this setup you can connect 1 or 2 active subwoofers NRG-12SA to 2 active full-range speakers (NRG-8A/10A/12A/15A).

To complete the setup, follow the steps below:

- 01) Make sure that all devices are switched off.
- 02) Connect the active full-range speakers and the active subwoofers. See **4.4.1. Setup with 2 Active Subwoofers** on page 14 and **4.4.2. Setup with 1 Active Subwoofers** on page 15.
- 03) Set the DSP of the subwoofer(s). See **5.3. DSP Settings** on page 18.
- 04) Set the DSP of the active full-range speakers to +SUB. Do this step if you use active full-range speakers from the NRG range.
- 05) Connect the active subwoofer(s) to the power supply. See **4.6. Connecting to Power Supply** on page 17.
- 06) Connect the rest of the devices to the power supply.
- 07) Switch on the audio mixer.
- 08) Switch on the active full-range speakers.
- 09) Switch on the active subwoofer(s). See **5.2. Switching On/Off** on page 18.
- 10) Adjust the gain control of the active subwoofer. See **5.6. Adjusting the Gain** on page 19.

4.4.1. Setup with 2 Active Subwoofers

To connect 2 active subwoofers to 2 active full-range speakers (NRG-8A/10A/12A/15A), follow the steps below:

- 01) Use a 3-pin XLR cable to connect the 1st active full-range speaker to the **3-pin XLR connector THRU A (10)** of the 1st active subwoofer.
- 02) Repeat step 1 to connect the 2nd active full-range speaker to the 2nd active subwoofer.
- 03) Use a 3-pin XLR cable to connect the **combined connector IN A (15)** of the 1st active subwoofer to the audio mixer.
- 04) Repeat step 3 to connect the 2nd active subwoofer to the audio mixer.

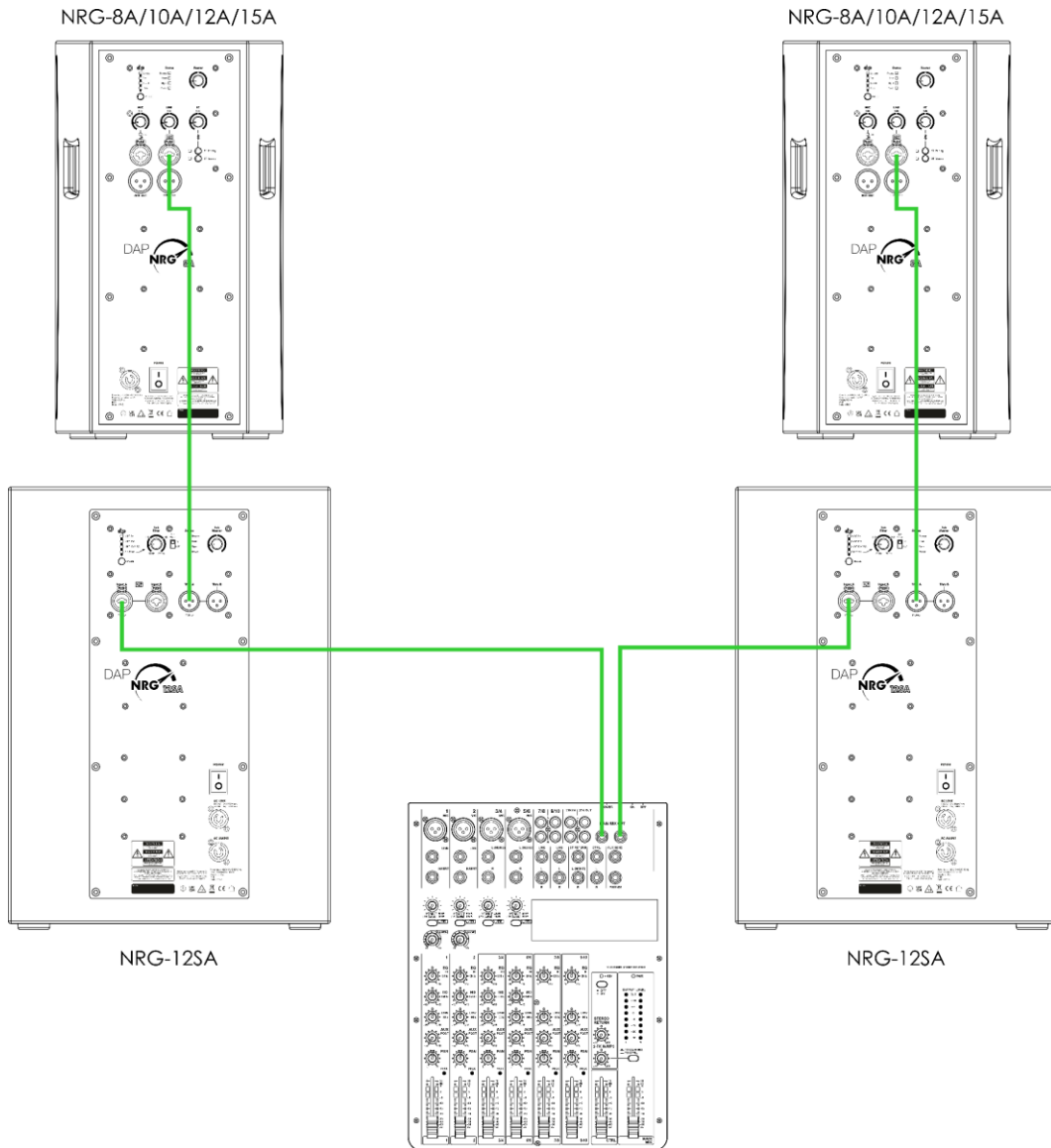


Fig. 06

4.4.2. Setup with 1 Active Subwoofer

To connect 1 subwoofer to 2 full-range speakers (NRG-8A/10A/12A/15A), follow the steps below:

- 01) Use a 3-pin XLR cable to connect the 1st active full-range speaker to the **3-pin XLR connector THRU A (10)** of the active subwoofer.
- 02) Use a 3-pin XLR cable to connect the 2nd active full-range speaker to the **3-pin XLR connector THRU B (09)** of the active subwoofer.
- 03) Use a 3-pin XLR cable to connect the **combined connectors IN A (15)** of the active subwoofer to the output A of the audio mixer.
- 04) Use a 3-pin XLR cable to connect the **combined connectors IN B (14)** of the active subwoofer to the output B of the audio mixer.

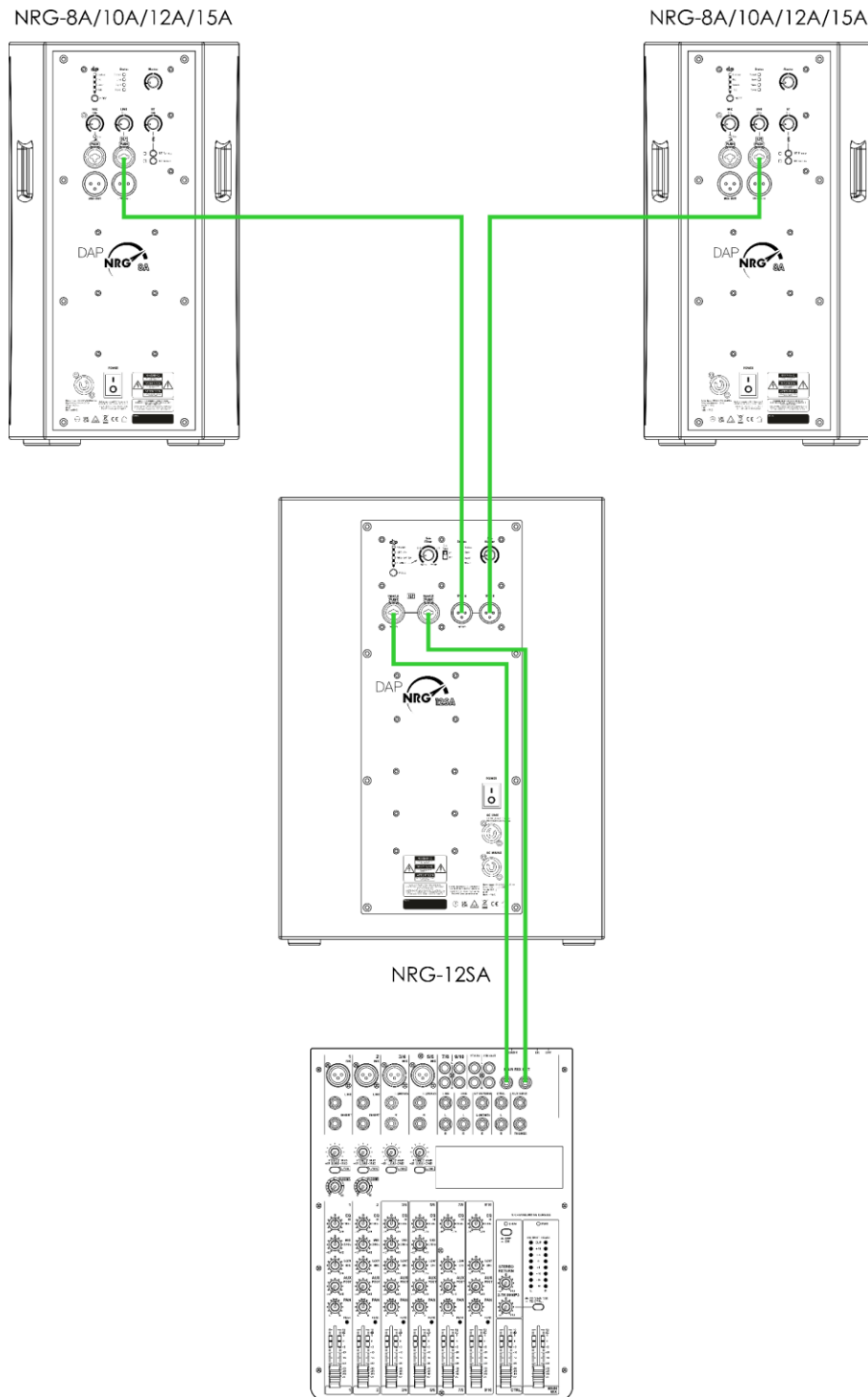


Fig. 07

4.5. Setup without an Audio Mixer

You can use the NRG-12SA in a setup without an audio mixer and connect it to an active full-range speaker from the NRG range (NRG-8A/10A/12A/15A). In this setup the active full-range speaker functions as a mixer, combining all input signals.

To complete the setup, follow the steps below:

- 01) Make sure that all devices are switched off.
- 02) Use a 3-p XLR cable to connect the **combined connector IN A (15)** of the active subwoofer to the 3-pin XLR mix connector OUT of the active full-range speaker.
- 03) Connect a microphone, a musical instrument, and/or a streaming source device, as necessary, to the active full-range speaker.
- 04) Connect the active subwoofer to the power supply. See **4.6. Connecting to Power Supply** on page 17.
- 05) Connect the rest of the devices to the power supply as necessary.
- 06) Switch on the active subwoofer. See **5.2. Switching On/Off** on page 18.
- 07) Switch on the rest of the devices as necessary.
- 08) Adjust the gain controls of the external devices as necessary.
- 09) Adjust the gain control of the active subwoofer. See **5.6. Adjusting the Gain** on page 19.

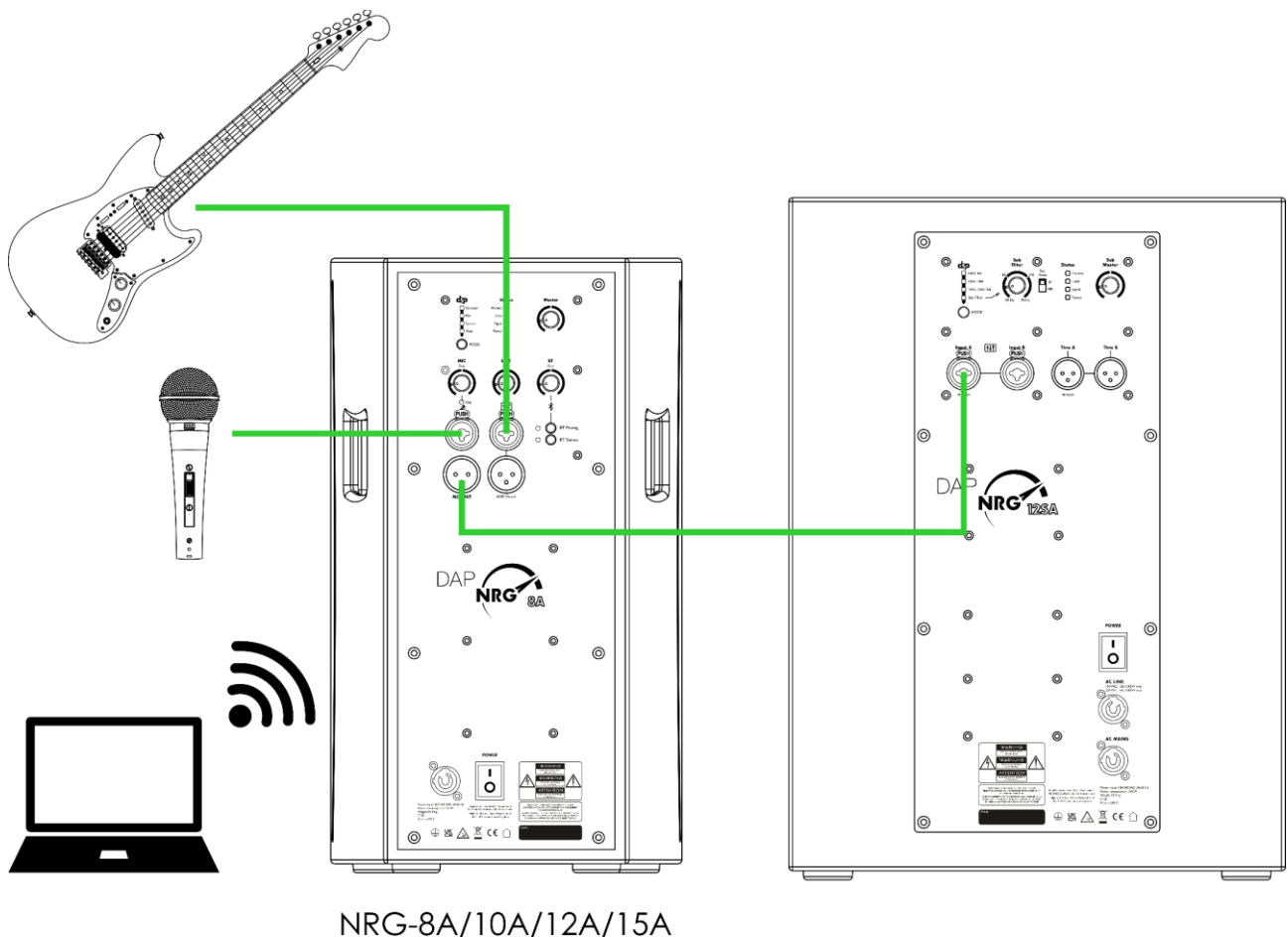


Fig. 08

4.6. Connecting to Power Supply



DANGER
Electric shock caused by short-circuit

The device accepts AC mains power at 100–240 V and 50/60 Hz. Do not supply power at any other voltage or frequency to the device.

This device falls under IEC protection class I. Make sure that the device is always electrically connected to the ground (earth).

Before connecting the device to the socket-outlet:

- Make sure that the power supply matches the input voltage specified on the information label on the device.
- Make sure that the socket-outlet has ground (earth) connection.

Connect the device to the socket-outlet with the power plug.

4.7. Power Linking of Multiple Devices

This device supports power linking. Power can be relayed to another device via the power OUT connector. Note that the input and the output connectors have different designs: one type cannot be connected to the other.

Power linking of multiple devices must be carried out only by instructed or skilled persons.



WARNING
Incorrect power linking may lead to overload of the electrical circuit and result in serious injuries and damage of property.

To prevent overload of the electrical circuit, when power linking multiple devices:

- Use cables with sufficient current-carrying capacity. The power cable supplied with the device is not suitable for power linking of multiple device.
- Make sure that the total current draw of the device and all connected devices does not exceed the rated capacity of the power cables and the circuit breaker.
- Do not link more devices on one power link than the maximum recommended number.

Maximum recommended number of devices:

- at 100–120 V: 5 devices
- at 200–240 V: 10 devices

5. Operation

5.1. Safety Instructions for Operation



Attention

This device must be used only for the purposes it is designed for.

This device is designed to be used as an active subwoofer. It is suitable only for indoor use.

Any other use, not mentioned under intended use, is regarded as non-intended and incorrect use.

5.2. Switching On/Off

The device has a power switch.

- To switch the device on, press the **power switch (11)** in ON position.
- To switch the device off, press the **power switch (11)** in OFF position.

5.3. DSP Settings

The NRG-12SA has an internal DSP (Digital Signal Processing) which optimizes the output sound depending on the type of the input sound source. If you use the device with active full-range speakers from the NRG range, you can use one of the factory presets for the respective model.

Press the **DSP button (04)** repeatedly to select one of the 4 options. The LED indicator of the selected option lights up.



- NRG 8A: Use this setting when the device is connected to an NRG-8A active full-range speaker
- NRG 10A: Use this setting when the device is connected to an NRG-10A active full-range speaker
- NRG 12/15A: Use this setting when the device is connected to an NRG-12A or an NRG-15A active full-range speaker
- Sub Filter: Use this setting when you want to adjust manually the crossover frequency. See **5.4. Adjusting the Sub Filter** on page 18

5.4. Adjusting the Sub Filter

You can manually adjust the crossover frequency of the device so that it matches the specifications of the connected full-range speaker.

To adjust the crossover frequency:

- 01) Select the option Sub Filter with the **DSP button (04)**. See **5.3. DSP Settings** on page 18.
- 02) Turn the **sub filter frequency control (05)** to set the crossover frequency. The adjustment range is 80–170 Hz.

5.5. Adjusting the Phase

The device has a phase switch. You can reverse the phase if the bass response is too weak.

Slide the **sub phase switch (06)** up/down to choose one of the 2 options:

- 0°: normal phase – the subwoofer and the main speakers are in phase, which creates a strong bass response
- 180°: reversed phase – the sound waves of the subwoofer are inverted compared to the rest of the speakers. This setting helps reduce any phase cancellation due to the physical distance between the speakers

5.6. Adjusting the Gain

Turn the **sub master gain control (08)** to the left/right to decrease/increase the master volume. This setting affects the overall volume.

5.7. LED Statuses

The device has 4 **status LED indicators (07)**. The LED indicators have the following statuses:

Status	
Protect <input type="checkbox"/>	<ul style="list-style-type: none"> • Protect: Illuminates when the amp is overloaded. This can happen when the input signal is too high or when the ambient temperature is too high. Decrease the volume of the connected device
Limit <input type="checkbox"/>	<ul style="list-style-type: none"> • Limit: Illuminates prior to the amp clipping and distorting. Adjust the input levels so that this LED indicator illuminates only briefly during the highest peaks. If you operate the device with this indicator continuously on, this will result in degraded sound quality and could damage or reduce the service life of the components
Signal <input type="checkbox"/>	<ul style="list-style-type: none"> • Signal: Illuminates when signal is present
Power <input type="checkbox"/>	<ul style="list-style-type: none"> • Power: Illuminates when the device is powered on

6. Troubleshooting

This troubleshooting guide contains solutions to problems which can be carried out by an ordinary person. The device does not contain user-serviceable parts.

Unauthorized modifications to the device will render the warranty void. Such modifications may result in injuries and material damage.

Refer servicing to instructed or skilled persons. Contact your Highlite International dealer in case the solution is not described in the table.

Problem	Probable cause(s)	Solution
The device does not function at all	No power to the device	<ul style="list-style-type: none"> • Make sure that the device is connected to the power supply and switched on
No sound	Bad connections	<ul style="list-style-type: none"> • Make sure that the connections between the device and the external devices are correct
Weak bass response	The subwoofer is out of phase	<ul style="list-style-type: none"> • Reverse the phase. See 5.5. Adjusting the Phase

7. Maintenance

7.1. Safety Instructions for Maintenance



DANGER
Electric shock caused by dangerous voltage inside

Disconnect power supply before servicing or cleaning.

7.2. Preventive Maintenance



Attention
Before each use, examine the device visually for any defects.

Make sure that:

- There are no deformations on the housing.
- The power cables are not damaged and do not show any material fatigue.

7.2.1. Basic Cleaning Instructions

To clean the device, follow the steps below:

- 01) Switch off the device.
- 02) Clean the device with a soft, lint-free cloth.



Attention

- Do not immerse the device in liquid.
- Do not use alcohol or solvents.

7.3. Corrective Maintenance

The device does not contain user-serviceable parts. Do not open the device and do not modify the device.

Refer repairs and servicing to instructed or skilled persons. Contact your Highlite International dealer for more information.

8. Deinstallation, Transportation and Storage

8.1. Instructions for Deinstallation



WARNING

Incorrect deinstallation can cause serious injuries and damage of property.

- Disconnect power supply before deinstallation.
- Always observe the national and site-specific regulations during deinstallation of the device.
- Wear personal protective equipment in compliance with the national and site-specific regulations.

8.2. Instructions for Transportation

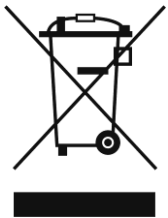
- Use the original packaging to transport the device, if possible.
- Always observe the handling instructions printed on the outer carton box, for example: "Handle with care", "This side up", "Fragile".

8.3. Storage

- Clean the device before storing. Follow the cleaning instructions in chapter **7.2.1. Basic Cleaning Instructions** on page 20.
- Store the device in the original packaging, if possible.

9. Disposal

Correct disposal of this product



Waste Electrical and Electronic Equipment

This symbol on the product, its packaging or documents indicates that the product shall not be treated as household waste. Dispose of this product by handing it to the respective collection point for recycling of electrical and electronic equipment. This is to avoid environmental damage or personal injury due to uncontrolled waste disposal. For more detailed information about recycling of this product contact the local authorities or the authorized dealer.

10. Approval



Check the respective product page on the website of Highlite International (www.highlite.com) for an available declaration of conformity.

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