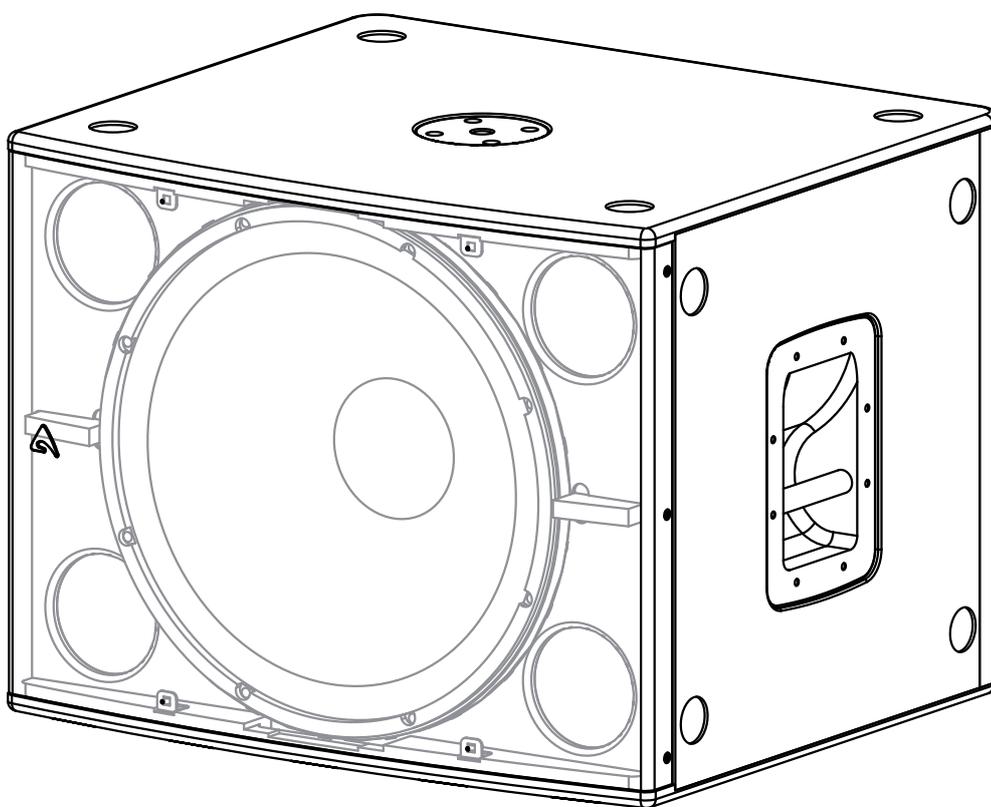




SW18AV2

active subwoofer



USER MANUAL

revision 2023-09-06





IMPORTANT SAFETY INSTRUCTIONS

Watch for these symbols:



The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of uninsulated “dangerous voltage” within the product’s enclosure, that may be of sufficient magnitude to constitute a risk of electric shock to persons.



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

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer’s instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding-type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched, particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
15. Warning: to reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.
16. Do not expose this equipment to dripping or splashing and ensure that no objects filled with liquids, such as vases, are placed on the equipment.
17. To completely disconnect this apparatus from the ac mains, disconnect the power supply cord plug from the ac receptacle.
18. The mains plug of the power supply cord shall remain readily operable.
19. This apparatus contains potentially lethal voltages. To prevent electric shock or hazard, do not remove the chassis, input module or ac input covers. No user serviceable parts inside. Refer servicing to qualified service personnel.
20. The loudspeakers covered by this manual are not intended for high moisture outdoor environments. Moisture can damage the speaker cone and surround and cause corrosion of electrical contacts and metal parts. Avoid exposing the speakers to direct moisture.
21. Keep loudspeakers out of extended or intense direct sunlight. The driver suspension will prematurely dry out and finished surfaces may be degraded by long-term exposure to intense ultra-violet (UV) light.
22. The loudspeakers can generate considerable energy. When placed on a slippery surface such as polished wood or linoleum, the speaker may move due to its acoustical energy output.
23. Precautions should be taken to assure that the speaker does not fall off a stage or table on which it is placed.
24. The loudspeakers are easily capable of generating sound pressure levels (SPL) sufficient to cause permanent hearing damage to performers, production crew and audience members. Caution should be taken to avoid prolonged exposure to SPL in excess of 90 dB.



This marking shown on the product or its literature, indicates that it should not be disposed with other household wastes at the end of its working life. To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate this from other types of wastes and recycle it responsibly to promote the sustainable reuse of material resources. Household users should contact either the retailer where they purchased this product, or their local government office, for details of where and how they can take this item for environmentally safe recycling. Business users should contact their supplier and check the terms and conditions of the purchase contract. This product should not be mixed with other commercial wastes for disposal.



FEDERAL COMMUNICATIONS COMMISSION (FCC) STATEMENT

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.

Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at their own expense.

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions:

- (1) this device may not cause harmful interference, and
- (2) this device must accept any interference received, including interference that may cause undesired operation.

DECLARATION OF CONFORMITY

CE The product is in compliance with:
EMC Directive 2014/30/EU, LVD Directive 2014/35/EU, RoHS Directive 2011/65/EU and 2015/863/EU, WEEE Directive 2012/19/EU.

EN 55032 (CISPR 32) STATEMENT

Warning: This equipment is compliant with Class A of CISPR 32. In a residential environment this equipment may cause radio interference. Under the EM disturbance, the ratio of signal-noise will be changed above 10 dB.

UK CA The product is in compliance with:
S.I. 2016/1091 Electromagnetic Compatibility Regulations 2016, S.I. 2016/1101 Electrical Equipment (Safety) Regulations 2016, S.I. 2012/3032 The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012.

CISPR 32 STATEMENT

Warning: This equipment is compliant with Class A of CISPR 32. In a residential environment this equipment may cause radio interference. Under the EM disturbance, the ratio of signal-noise will be changed above 10 dB.

LIMITED WARRANTY

Proel warrants all materials, workmanship and proper operation of this product for a period of two years from the original date of purchase. If any defects are found in the materials or workmanship or if the product fails to function properly during the applicable warranty period, the owner should inform about these defects the dealer or the distributor, providing receipt or invoice of date of purchase and defect detailed description. This warranty does not extend to damage resulting from improper installation, misuse, neglect or abuse. Proel S.p.A. will verify damage on returned units, and when the unit has been properly used and warranty is still valid, then the unit will be replaced or repaired. Proel S.p.A. is not responsible for any "direct damage" or "indirect damage" caused by product defectiveness.

- This unit package has been submitted to ISTA 1A integrity tests. We suggest you control the unit conditions immediately after unpacking it.
- If any damage is found, immediately advise the dealer. Keep all unit packaging parts to allow inspection.
- Proel is not responsible for any damage that occurs during shipment.
- Products are sold "delivered ex warehouse" and shipment is at charge and risk of the buyer.
- Possible damages to unit should be immediately notified to forwarder. Each complaint for package tampered with should be done within eight days from product receipt.

CONDITIONS OF USE

Proel do not accept any liability for damage caused to third parties due to improper installation, use of non-original spare parts, lack of maintenance, tampering or improper use of this product, including disregard of acceptable and applicable safety standards. Proel strongly recommends that this loudspeaker cabinet be suspended taking into consideration all current National, Federal, State and Local regulations. The product must be installed by qualified personal. Please contact the manufacturer for further information.



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INTRODUCTION

The SW18AV2 is a high power compact subwoofer designed to partner ED series point source loudspeakers for fixed installations in discotheques, nightclubs and bars, and live music clubs, and for portable corporate audio-visual applications. It features a high excursion 4" voice coil, 18" driver equipped with a double centred spider that maintains linear voice coil travel even at high output levels. The phenolic birch plywood cabinet is equipped with pole mount socket, stacking feet, flush handles, and heavy duty wheels to enable easy handling and transportation.

The SW18AV2 subwoofer system is equipped with a high power 18" (460mm) transducer capable of long excursion (up to 30mm peak-to-peak), controlled by high stiffness Double Silicon Spider as centering suspension and by heavy duty surround. The motor structure features high strength (BL²/Re) with optimized symmetry and excursion controlled by Inner Flux Demodulating Ring. The robust copper 100mm (4") voice coil is wound in two different layers both outside and inside the coil support, then doubling the coil surface exposed to air cooling and consequently improving the long term thermal capacity of the loudspeaker. Cones are made of very high-stiffness glass fiber reinforced paper, featuring also invisible water repellent treatment.

The SW18AV2 is processed by 40 bit floating point CORE2 DSP and powered by a high efficiency CLASS D amplifier module with a newly designed power supply equipped with PFC, which reduces the power consumption while enhancing reliability and consistency in all operating conditions. It will deliver punchy bass performance from a very compact cabinet, and thanks to the integral pole mount socket partners well with any of the ED series of point source loudspeakers in portable corporate audio-visual applications, while its small size enables it to be easily fitted into tight venue spaces.

TECHNICAL SPECIFICATION

SYSTEM

System's Acoustic Principle	Direct radiation, vented
Frequency response (-6 dB)	36 Hz – 100 Hz (Processed)
Maximum Peak SPL @ 1m	132 dB

TRANSDUCERS

Type	18" (460 mm), 4" (100 mm) VC, 8 ohm
Cone	High stiffness, water repellent, glass fibre reinforced diaphragm
Voice Coil Type	Flux Demodulating Ring
Suspension	Double Centering Spider

ELECTRICAL

Input Impedance	20 kΩ balanced
Input Sensitivity	+4 dBu / 1.25 V

Signal Processing CORE2 processing, 40bit floating point SHARC DSP, 24 bit AD/DA converters

Direct access Controls 4 Presets (STANDARD/INFRASUB/CARDIOID/USER), Network Termination, GND Link

Remote Controls PRONET AX control software

Network protocol CANBUS

Amplifier Type	Class D amplifier with SMPS & PFC
Output Power	2800 W
Mains Voltage Range (Vac)	100 - 240 V~ ±10% 50/60 Hz
Consumption*	700 W (nominal) 1700 W (max)
IN / OUT Connectors	Neutrik XLR-M / XLR-F
IN / OUT Network Connectors	ETHERCON® (NE8FAV)
Mains Connector	PowerCon® (NAC3MPXXA)
Mains Link Connector	PowerCon® (NAC3MPXXB)
Cooling	Variable speed DC fan

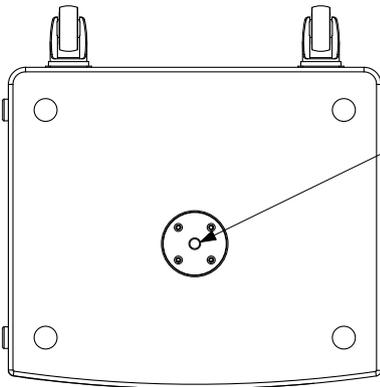
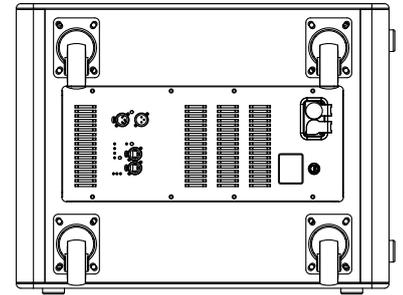
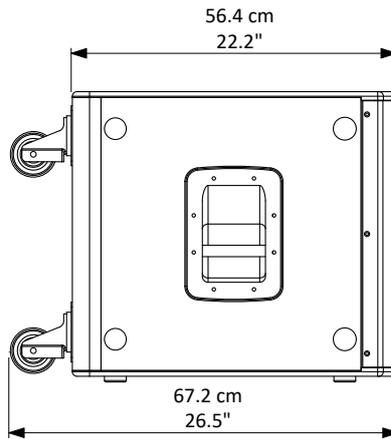
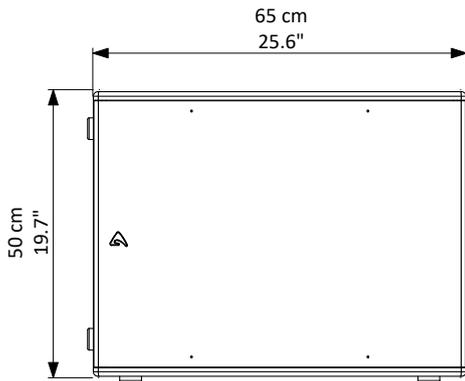
ENCLOSURE & CONSTRUCTION

Width	650 mm (25.6")
Height	500 mm (19.7")
Depth	564 mm (22.2")
Depth Including Wheels	673 mm (26.5")
Enclosure Material	15 mm Phenolic Birch Plywood
Paint	High resistance, water based paint
Wheels	4 x 80mm Polyurethane Wheels
Transport	2 handles
Net Weight	42.5 Kg (93.7 lbs.)

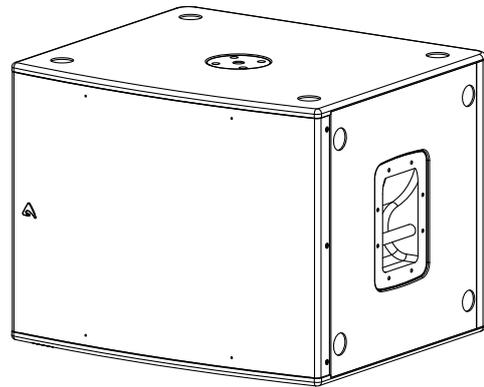
* Nominal consumption is measured with pink noise with a crest factor of 12 dB, this can be considered a standard music program.



MECHANICAL DRAWING



M20 Pole Adaptor



OPTIONAL ACCESSORIES

NAC3FX-W-TOP-L	Neutrik Powercon® TRUE1 (for power in)*
NAC3MX-W-TOP-L	Neutrik Powercon® TRUE1 (for power out)*
HTLACA	Tool for tightening powerCON TRUE1*
HTLACB	Tool for tightening powerCON TRUE1*
NE8MC-B-1	Neutrik Ethercon PLUG
USB2CANDV2	Dual Port PRONET network converter

DHSS10M20	Sub-Speaker ø35mm 1-1.7m Pole with Handle and M20 screw
KP210S	Sub-Speaker ø35mm 0.7-1.2m Pole with M20 screw
RAINCOV215	Rain protection for connectors
COVERSW18	Cover for SW18
AVCAT5PROxx	Cat5e on cable drum, 30/50/75 m Length

see <http://www.axiomproaudio.com/> for detailed description and other available accessories.

*Note: See assembly instruction downloadable from NEUTRIK WEB site at: <http://www.neutrik.com/>

SPARE PARTS

91MDSW18AV2V2	Amplifier module assembly
NAC3PX-TOP	Neutrik Powercon® TRUE1 inlet-outlet
SCNAC-04	Neutrik Rubber Sealing for NAC3PX
91DSPKT11	Input, Control and CORE2 DSP PCBA

91DALITEMOD4HC	Powersoft LITEMOD4HC amplifier module
91FSV15A	MDA15R 6.3x32mm 15 A T Fuse
98NEOS18SW8	18" woofer - 4" VC - 8 ohm
AC102GS	80 mm Swivel castor without brake



I/O AND CONTROL OPERATIONS

MAINS~ IN

Powercon® NAC3PX power inlet connector. To switch the amplifier on, insert the Powercon® connector and turn it clockwise into the ON position. To switch the amplifier off, pull back the switch on the connector and turn it counter-clockwise into the POWER OFF position.

MAINS~ OUT

Powercon® NAC3PX power outlet connector. This is connected in parallel with the MAINS~ IN. With 230V~ we suggest to link a maximum of 4 SW18AV2 loudspeakers, with 120V~ we suggest to link a maximum of 2 SW18AV2 loudspeakers.

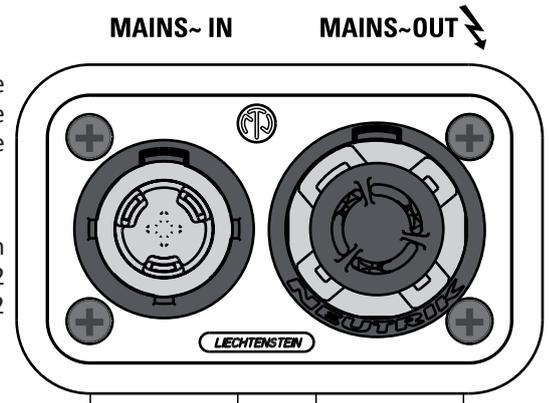
FUSE HOLDER

Here is where the mains protection fuse is placed.



WARNINGS:

- REPLACE THE PROTECTION FUSE ONLY WITH THE SAME TYPE: BUSSMANN MDA-15-R OR LITTELFUSE 326015.VX
- In the case of product failure or fuse replacement, disconnect the unit completely from the mains power.
- Use a suitable power cable and mains plug to build the power cable, it must only be connected to a socket corresponding to the specifications indicated on the amplifier unit. See assembly instruction downloadable from NEUTRIK WEB site at: <http://www.neutrik.com/>
- The power cable must only be connected to a socket corresponding to the specifications indicated on the amplifier unit.
- The power supply must be protected by a suitably rated thermo-magnetic breaker. Preferably use a suitable switch to power on the whole audio system leaving the Powercon® always connected to each speaker, this simple trick extend the life of the Powercon® connectors.
- Connect no more units to the MAINS OUT connector than as specified above.
- Turn on each unit one a time starting from the latest unit.



FUSE



ON

This LED indicates power on status.

PROT

This red LED lights when the amplifier module is in protect mode for an internal fault and, consequently, the amplifier is muted.

SIGN LIMIT

This LED lights in green to indicate the presence of the signal and lights in red when an internal limiter reduces the input level.

INPUT

Audio signal input with locking XLR connector. It has a fully electronically balanced circuitry including AD conversion for the best S/N ratio and input headroom.

LINK

A direct connection from the input connector to link other speakers with same audio signal.

GND LIFT

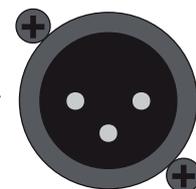
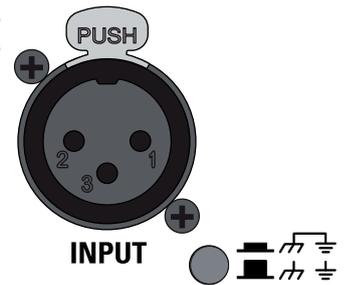
This switch lift the ground of the balanced audio inputs from the earth-ground of the amplifier module.

NETWORK IN/OUT

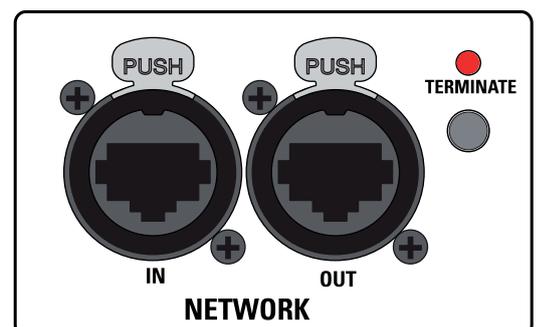
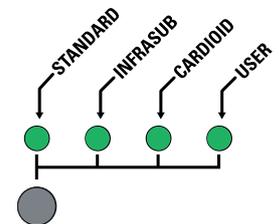
- These are a standard RJ45 CAT5 connectors (with optional NEUTRIK NE8MC RJ45 cable connector carrier), used for PRONET network transmission of remote control data over long distance or multiple unit applications.

TERMINATE

In a PRONET network the last loudspeaker device must be terminated (with an inner load resistance) especially in a long run cabling: press this switch if you want to terminate the unit.



- ON
- PROT
- SIGN/LIMIT





PRESET BUTTON

This button has two function:

1) Pressing it while powering on the unit:

ID ASSIGN The internal DSP assigns a new ID to the unit for the PRONET AX remote control operation. Each loudspeaker must have a unique ID to be visible in the PRONET AX network. When you assign a new ID, all the other loudspeakers with the ID already assigned must be ON and connected to the network.

2) Pressing it with the unit ON you can select the DSP PRESET. The selected PRESET is indicated by the corresponding LED:

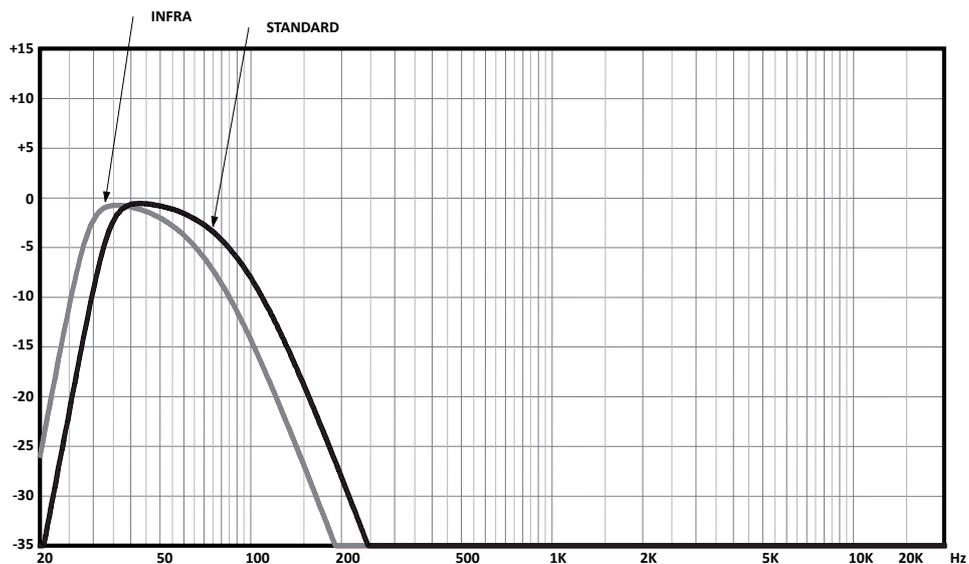
STANDARD This PRESET is suitable for any application where low frequency reinforcement is required. It features a 90Hz cut off frequency and it can be used in almost any environment in combination with any vertical arrays.

INFRA This PRESET can be used when a deeper bass response is required (Note that when this preset is used the sound pressure level of the system is slightly reduced).
NOTE: INFRA and STANDARD PRESET must NOT be used together in close units.

CARDIOID This special PRESET, combined with the STANDARD PRESET, gives the advantage to reduce the low frequencies at the back of an array of three subs, in order to obtain a more comfortable level for the performers on the stage without losing level for the the audience in front of the array. The cardioid configuration is also useful in situation where you want to reduce the bass frequency feedback due to many microphones on stage, for example for acoustic and jazz ensemble, classic orchestra, musicals. Further in this manual you can find some example how to set up a cardioid array.

USER This PRESET corresponds to USER MEMORY no. 1 of the DSP and, as a factory setting, it's the same to STANDARD. If you want to modify it, you have to connect the unit to a PC, edit the parameters with PRONET AX software and save the PRESET into USER MEMORY no. 1.

SW18A - PRESET RESPONSE





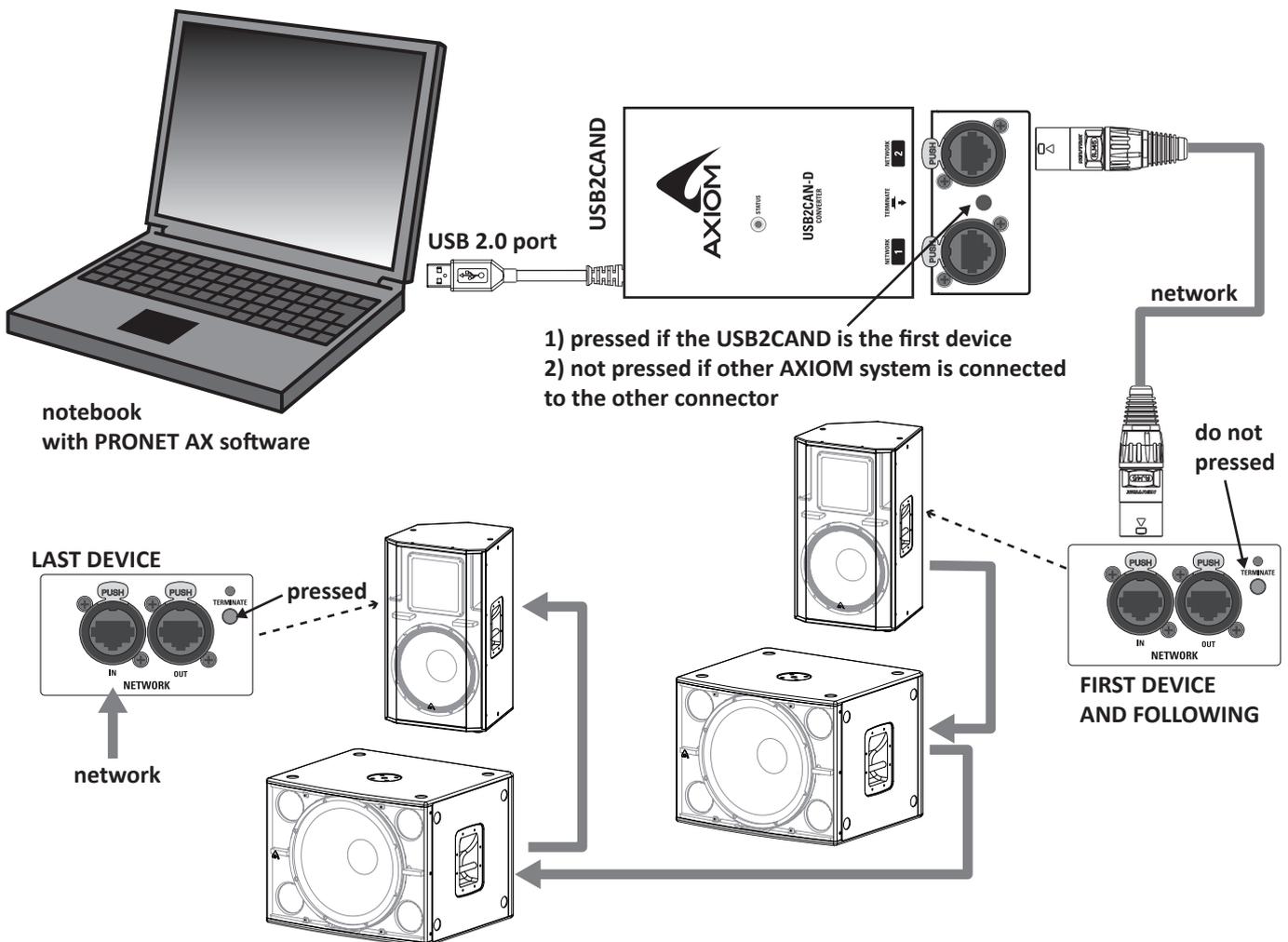
PRONET AX

PRONET AX software has been developed in collaboration with sound engineers and sound designers, in order to offer an “easy-to-use” tool to setup and manage your audio system. With PRONET AX you can visualize signal levels, monitor internal status and edit all the parameters of each connected device.

Download the PRONET AX app registering on MY AXIOM at the website at <https://www.axiomproaudio.com/>.

The AXIOM active loudspeaker devices can be connected in a network and controlled by the PRONET AX software, for the network connection the **USB2CAND** (with 2-port) converter optional accessory is needed. PRONET AX network is based on a “bus-topology” connection, where the first device is connected to the network input connector of the second device, the second device network output is connected to the network input connector of the third device, and so on. To ensure a reliable communication the first and the last device of the “bus-topology” connection must be terminated. **This can be done by pressing the “TERMINATE” switch near the network connectors in the rear panel of the first and the last device.** For the network connections simple RJ45 cat.5 or cat.6 ethernet cables can be used (please don't confuse a ethernet network with a PRONET AX network these are completely different and must be fully separated also both use the same kind of cable).

EXAMPLE OF PRONET NETWORK WITH ED120A/150A AND SW18A





Assign the ID number

To work properly in a PRONET AX network each connected device must have a unique identifier number, called ID. By default the USB2CAN-D PC controller has ID=0 and there can be only one PC controller. Every other device connected must have its own unique ID equal or greater than 1: in the network cannot exist two devices with the same ID.

In order to correctly assign a new available ID to each device for working properly in a Pronet AX network, follow these instructions:

1. Switch off all the devices.
2. Connect them correctly to the network cables.
3. "TERMINATE" the end device in the network connection.
4. Switch on the first device keep pressed "PRESET" button on the control panel.
5. Leaving the previous device switched on, repeat the previous operation on the next device, until the latest device is turned on.

The "Assign ID" procedure for a device makes the internal network controller to perform two operations: reset the current ID; search the first free ID in the network, starting from ID=1. If no other devices are connected (and powered on), the controller assume ID=1, that is the first free ID, otherwise it searches the next one left free.

These operations ensure that every device has it's own unique ID, if you need to add a new device to the network you simply repeat the operation of step 4. Every device maintains its ID also when it is turned-off, because the identifier is stored in the internal memory and it is cleared only by another "Assign ID" step, as explained above.



With the network made always of the same devices the assigning ID procedure must be executed only the first time the system is turned on.

For more detailed instruction about PRONET see the PRONET AX USER'S MANUAL included with the software.

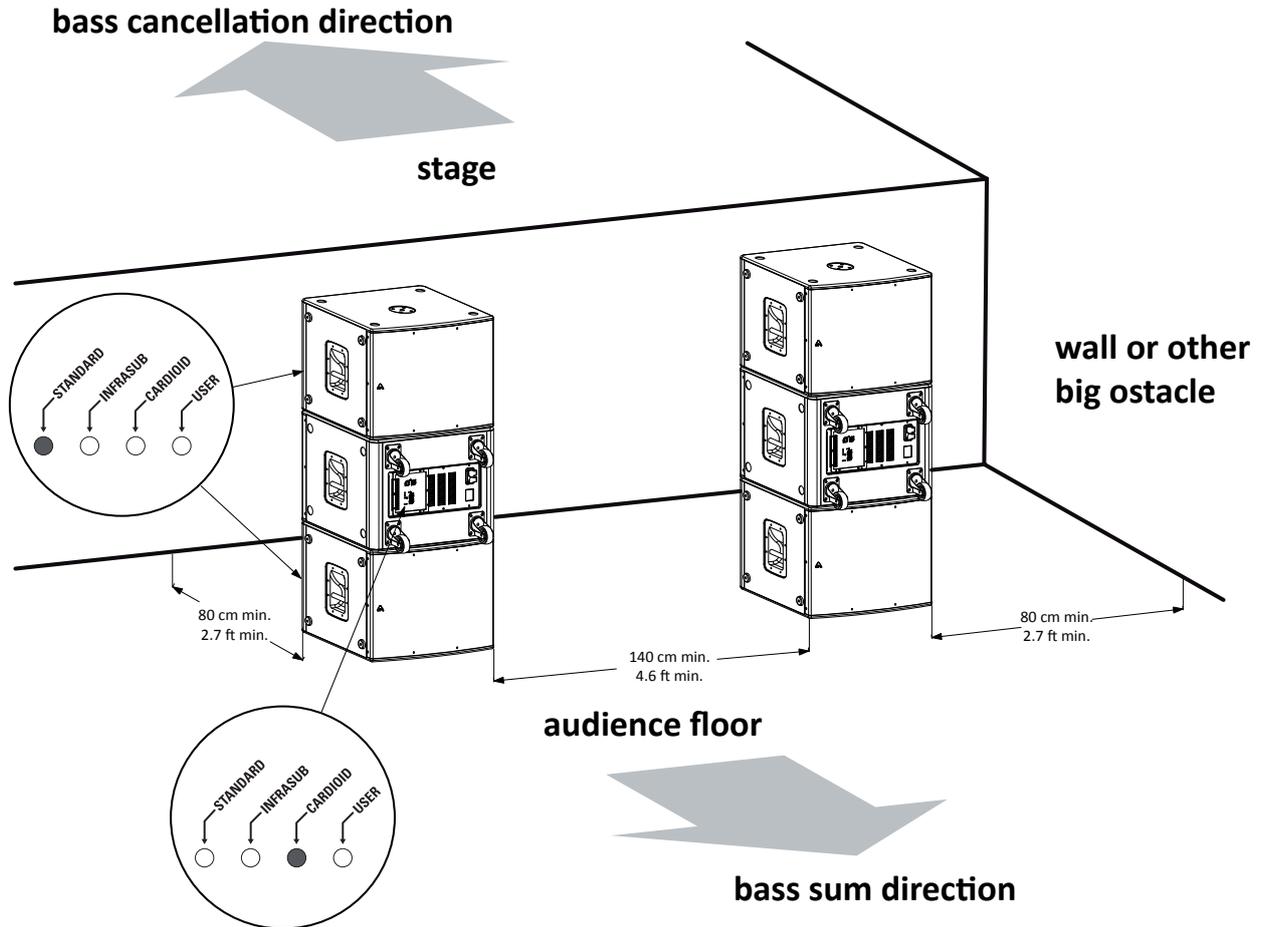


CARDIOID PRESET

The cardioid preset must be used in a sub array of three SW18AV2. Two boxes must be oriented towards the audience and one must be turned in the opposite direction (typically the box in the centre of the array). The bottom and the top boxes must have the STANDARD PRESET, the box in the middle must have the CARDIOID PRESET. The audio signal sent to all boxes is the same.

The CARDIOID PRESET has the same response of the STANDARD PRESET, but to obtain the maximum cancellation on the back side of the array it has the phase inverted and a proper level and delay setting.

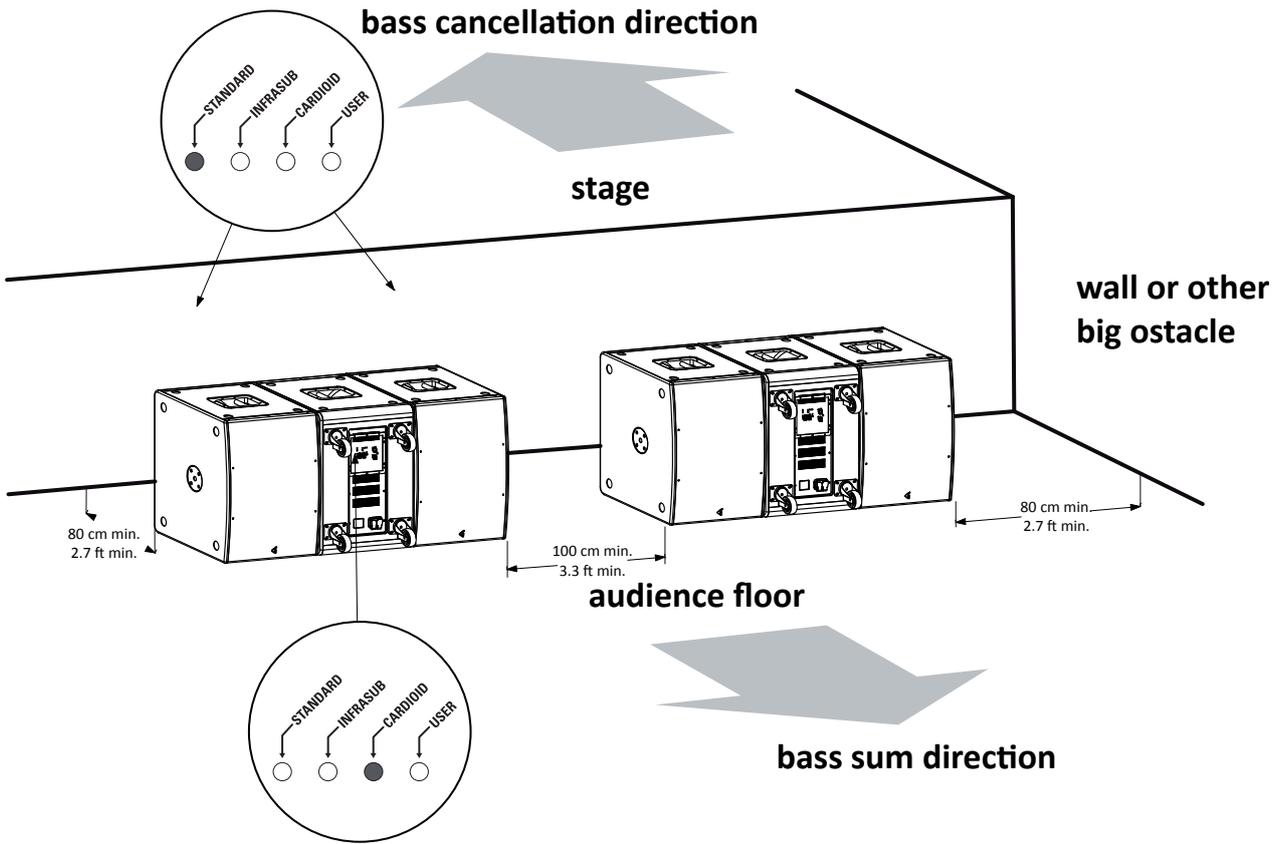
The figure below shows two typical displacement of the array. The first with all the boxes in horizontal position for a total height of 1500 mm and a width of 650 mm. The second one with all the boxes in vertical position for a total height of 650 mm and a width of 1500 mm.



NOTES:

When placing the cardioid array keep a distance to walls or other obstacles of at least 80 cm (2.6 ft) in order not to affect the radiation of the reversed cabinet.

When placing multiple cardioid arrays keep a distance between them of at least 140 cm (4.6 ft) for vertical placement, or 100 cm (3.3 ft) for horizontal placement, in order to maximize the combined radiation of whole arrays.





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