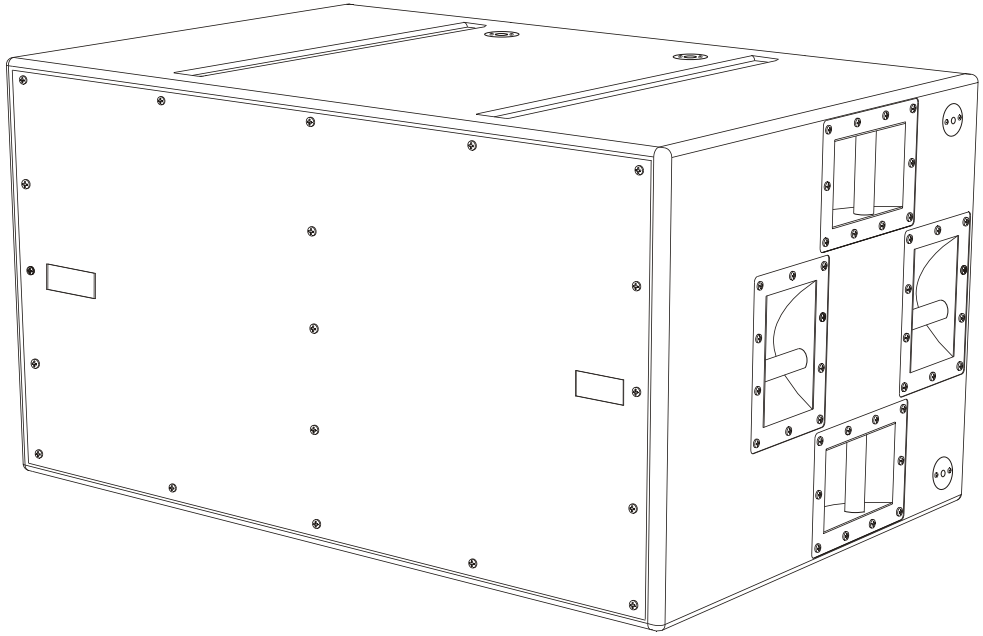
S30N

ACTIVE BASSREFLEX-HORN SUBWOOFER



A.E.B. INDUSTRIALE s.r.l.
Via Brodolini, 8 - 40056 Crespellano (Bo) - ITALIA
Tel. + 39 051 969870 - Fax. + 39 051 969725
Internet: www.dbtechnologies.com
E-mail: info@dbtechnologies-aeb.com

MANUALE d'USO - Sezione 1
USER MANUAL - Section 1
BEDIENUNGSANLEITUNG - Abschnitt 1
CARACTERISTIQUES TECHNIQUES - Section 1

CE Made in Italy

COD. 420120182A Rev 5.0

dB TECHNOLOGIES
THE SOUND OF EXPERIENCE

DESCRIPTION

The DVA S30N is equipped with two high efficiency amplifiers DIGIPRO 1500S of DIGIPRO® G2 series, which delivers 1500W (3000W in total).

The power supply circuits of the DIGIPRO® G2 amplifier has been conceived to work in full-range mode; thanks to the SMPS (Switched-Mode Power Supplies) technology with PFC (Power Factor Correction) the operation with supply voltages between 100 Vac and 240Vac is guaranteed by ensuring the same sound performances even with floating and non-stabilized power supply systems.

The digital preamplifier with DSP (Digital Signal Processing) controls the audio crossover of the acoustic components, the frequency response and the limiter.

The DVA S30N is a subwoofer in reflex configuration, is equipped with two 18" Woofer, mounted on two panels in "V" position which creating an horn, increases the sound pressure and can reach long distances.

DVA Network

DVA S30N is equipped with proprietary network interface, called RDNET, for PC interface through a device (RDNET control).
For this purpose, a proprietary communication protocol has been developed for receiving and sending data; this connection permits real-time monitoring of the diffuser parameters, such as output power, amplifier temperature, limiter status, etc...
It is also possible to select various equalizations or create new ones, set the desired volume levels using the specific plug-in.



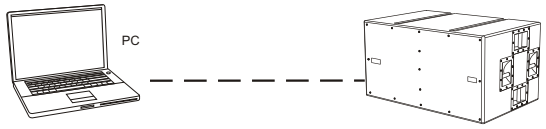
It is recommended to download DVA Network free software directly from dB Technologies (www.dbtechnologies.com) in the special section «Software & Controller»

DVA USB Manager

The firmware of the amplifier module can be updated via the USB port.
To make this update possible and simple, a dedicated program has been developed.



It is recommended to download DVA USB Manager free software directly from dB Technologies (www.dbtechnologies.com) in the special section «Software & Controller»



DVA Composer Acoustical Simulation and aiming for DVA Systems

DVA Composer is a 2D software for aiming and simulating acoustical response of all line arrays and Subwoofers from DVA Series.
The software allows you to set up a stereo system composed by tops and subs, and simulates separately the acoustical response of both.
DVA Composer also gives to the user all the information about phase alignment between flown systems and ground stacked subwoofers, as well as it suggests an optimized aiming of the line arrays modules and their suggested EQ presets, in order to guarantee maximum performances even for non-expert customers.



It is recommended to download DVA_Composer free software directly from dB Technologies (www.dbtechnologies.com) in the special section «Software & Controller»

CONTROLS AND FUNCTIONS (Ref. Page 1 1)

"Balanced Audio" section

1) " INPUT" INPUT CONNECTOR
Balanced input at line level. It is able to accept "XLR" sockets.

2) "LINK" OUTPUT CONNECTOR
The "XLR" connector connected in parallel with input (1) can be used to send the input audio signal to another amplified speaker.

"Status" section

3) "LIMITER" INDICATOR LIGHT
This indicator comes on red to indicate that the internal limiter circuit has tripped. This prevents amplifier distortion and protects the speakers against overloads.

⚠ Always avoid operating conditions where the system works for long periods of time with LED flashes or it is always ON

4) "SIGNAL" INDICATOR LIGHT
This indicator comes on green to indicate the presence of an input signal to a level higher than-20dBu.

5) "MUTE/PROT" INDICATOR LIGHT
This yellow indicator indicates amplifier status. In normal operating conditions, the LED is off; if it flashes or is always on, refer to the diagnostics table to check amplifier status.

6) "READY" INDICATOR LIGHT
This indicator comes on green to indicate that the main power voltage is correct. In normal operating conditions, the LED is on; if it flashes or is off, refer to the diagnostics table to check amplifier status.

"Input control " section

7) "INPUT SENS" INPUT SENSITIVITY CONTROL
This control regulates the sensitivity of the signal amplifier input.
This control does not affect the "LINK" (2) output level.

"Xover Out " section

8) OUTPUT CONNECTOR
Internal crossover audio balanced output, by XLR connector. The signal from this output can be sent to any other amplified speaker.
The crossover frequency can be selected by means "Xover Frequency" switch (9).

9) "Xover Frequency selection 24dB/Oct" SELECTOR
This selector permits selection of crossover frequency from 75Hz to 120Hz (step 5Hz) with a slope of 24dB/Oct.
The frequency choice depends to the reproduction desired and from system configuration.

10) "Remote Preset Active" INDICATION LIGHT
When the amplifier is remotely controlled via RDNET, this yellow indicator indicates the exclusion of the below commands:
Volume (7)
Phase (11)
Xover Frequency selection (9)
Delay (12)

“SUB Phase/Delay” section

11) “PHASE ” SWITCH
This switch permits 180° rotation of the audio signal reproduced by subwoofer. Rotation makes for easier optimization of low-frequency reproduction even in the most difficult installation situations. After completing installation, reproduce a track of music and adjust the switch to obtain the best low-frequency sound.
This function it is used also for cardioid configuration.

12) "DELAY” CONTROL
This control allows to delay the sound signal reproduced by the subwoofer. This circuit allows sound-alignment between line array and sub by balancing the various positions.
This control can also be used to create cardioid configuration systems. The cardioid configuration provides a remarkable attenuation of the low frequencies radiated by the rear side of the subs, without changing the direct radiated signal on the front side. This configuration needs at least 3 subwoofers (two with front radiation and one with rear radiation).

“RDNET " section

13) INPUT CONNECTOR "DATA INPUT”
RJ45 connector 'data input.

14) OUTPUT CONNECTOR "DATA INPUT”
RJ45 connector 'data output for cascading connections.

15) “LINK” INDICATION LIGHT
This green indicator turns on only when the amplifier has recognized and is connected with the main RDNET unit via the computer.

16) “ACTIVE” INDICATOR LIGHT
This yellow indicator flashes when there is an active data transmission between RDNET and the amplifier module.

“DSP UP-grade " section

17) “Service Data USB” Connector
Via this USB connector, it is possible to update the firmware of the DVA S30n amplifier module using the computer and a dedicated program.

18) "MAINS INPUT" POWER SOCKET
For connecting the power cable.
The connector used for mains connection is a POWER CON® (blue)

19) COOLING GRILLE
These grilles permit cooling the amplifier during operation.
Do not block accesses and clean the grilles whenever necessary to ensure correct air circulation.

EMI CLASSIFICATION

According to the standards EN 55103 this equipment is designed and suitable to operate in E5 Electromagnetic environment.

CHARACTERISTICS AND PROTECTION

Front Grille
The speakers’s components in the box are protected by 1.5mm metal steel grille covered by foam on backside.

Cooling
Thermal control is managed by the main microprocessor that interacts with the local microprocessors (amplifiers and power supply) and communicates the data to the DSP for any corrections.
If the amplifier module heats up excessively, the volume is gradually reduced step wise to 0.1dB until the module is thermally stabilised.
The volume is automatically restored when the normal operating temperature is reached.

Failure indications and safeties
The microprocessor is able to signal three different kinds of failure by flashing the “READY”, “MUTE/PROT” e “LIMIT”
The three types of failure are:

1) **WARNING:** a non severe error or auto-ripristinate malfunction is detected and the performance of the speaker is not limited
2) **LIMITATION:** an error is detected and diffuser performance is limited. The sound level is reduced or one or more amplifiers are disabled.
This state partially influences the correct functioning of the diffuser.
If the problem persists the next time the module is turned on, contact the support centre for assistance.
3) **FAILURE:** a severe malfunction is detected. The speaker switches to “mute”.

If the case of a malfunction, before contacting the support centre, try to turn the module off and on to check if the problem still exists.

Connecting to the mains supply
Each active speaker features its own power cable. Connection is done by a Neutrik POWER CON® (blue) model which permits easy and fast connection to the speaker as well as being an excellent locking system.

The same connector serves as a switch to turn ON and OFF the active loudspeaker by turning the connector to the left (OFF) or right (ON).

The active speaker must be connected to a power supply able to deliver the maximum required power.

LOUDSPEAKER INSTALLATION

WARNING
Make sure that the loudspeaker is securely installed in a stable position to avoid any injuries or damages to persons or property.

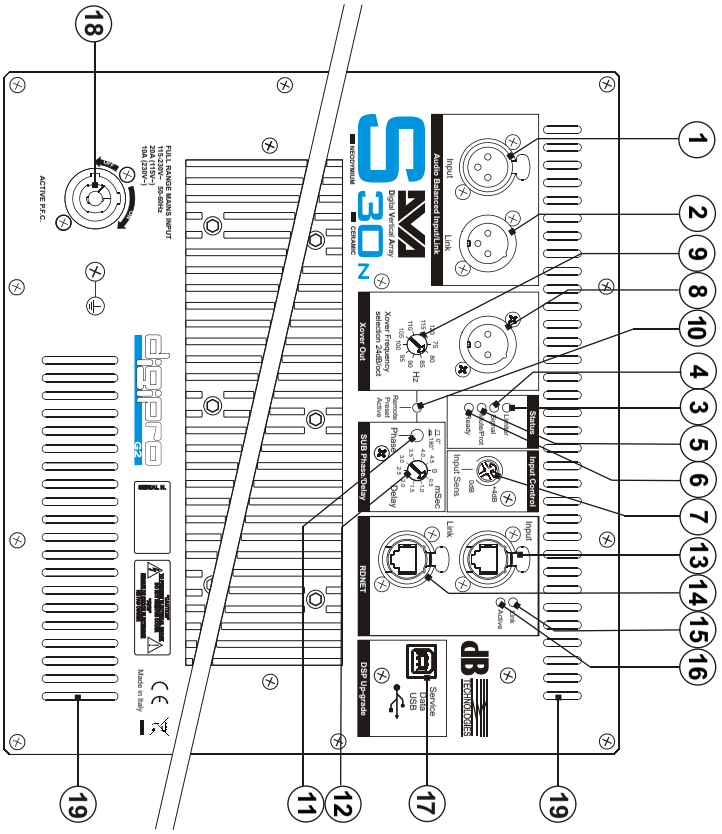
For safety reasons do not place one loudspeaker on top of another without proper fastening systems.
If you use the loudspeakers outdoors avoid places that are exposed to bad weather.

The loudspeaker is supplied by the manufacturer company for use in support.

WARNING
Never use the handle to hang the speaker!

TECHNICAL SPECIFICATION

System	Active 2-Amps
Type of amplifier	Digital - Class D (DIGIPRO G2 technology)
RMS power	3000W (1500 W + 1500 W)
Musical power	6000W
Frequency response (+/-3dB)	30-120Hz
Crossover LF-MF (Low-Mid)	75 - 120Hz (5Hz steps) selectable
Sound pressure (SPL)	141dB peak
Component parts	2 woofer 18" -RCF 4"
coil	
Input sensitivity nominal	0dBu
Input impendence Balanced	20Kohm
Unbalanced	10Kohm
Power supply	Full range 115Vac -230Vac, 50-60Hz con PFC
Inrush Current	32,96 A
DSP	Analog Device 56 bits
Audio conversion	24 bit / 96kHz
Volume control	Digital
Box material	Birch plywood, black painted orange peel
Housing shape	Rectangular
Handle	4 x side
Front grille	Performed sheet 1.5mm with internal foam
Dimension (WxHxD)	1100x720x580mm
Weight	75Kg (neodimium cones) 83Kg (ceramic cones)



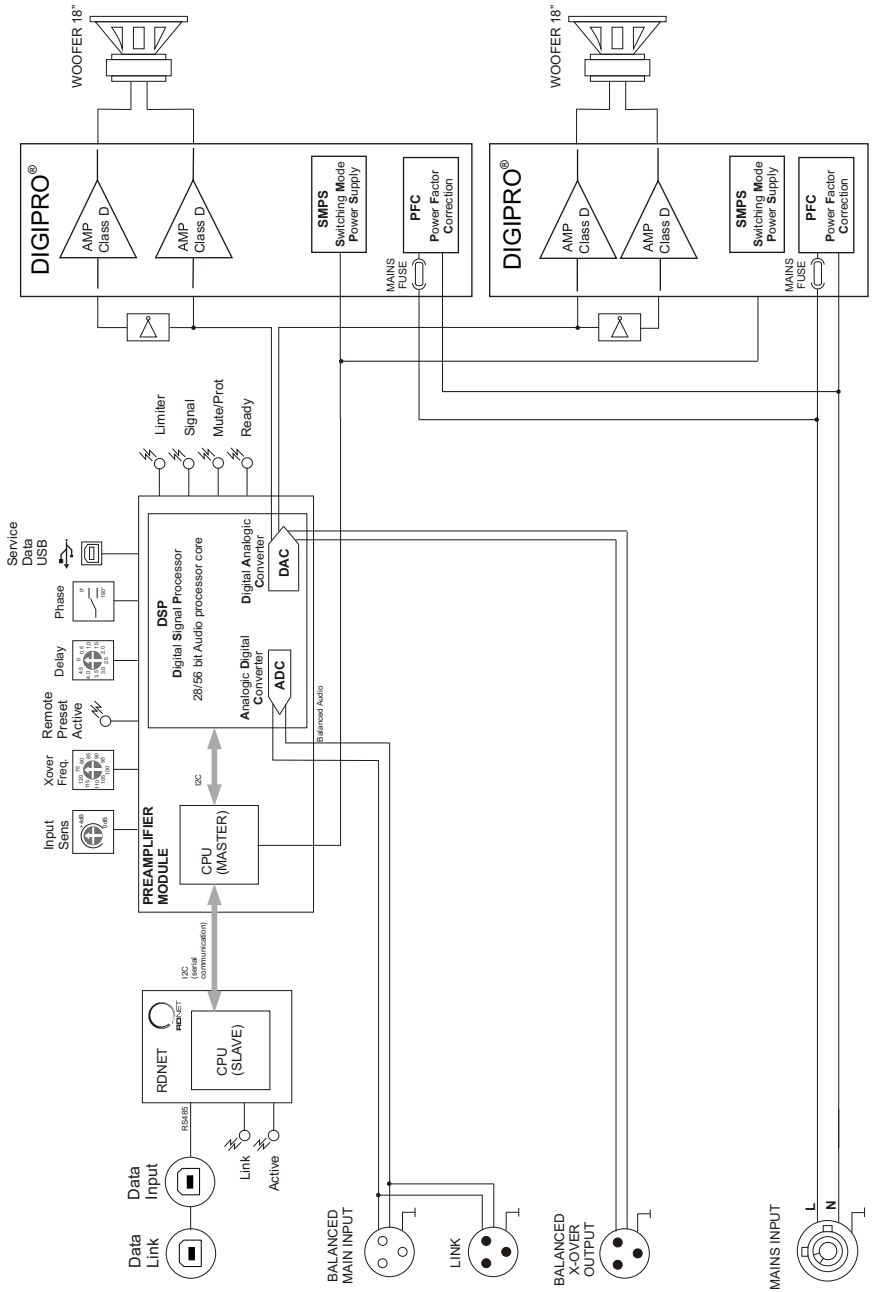
DIAGNOSTICS TABLE

MODULE STATUS	LED «READY»	LED «MUTE/PROT»	LED «SIGNAL»	LED «LIMIT»	MODULE FUNCTIONS
Power ON	OFF	ON for 5 sec.	OFF	OFF	Audio MUTED Initialization of the amplifier module
Normal use	ON	OFF	Normal operation	Normal operation	Audio ACTIVE Module initialization complete and correct
Partial fault	ON	Cyclic flashing (3 or more quick flashes)	Normal operation	Normal operation	Audio ACTIVE The module has detected a partial anomaly and remains active with limited functions
Total fault	OFF	ON	OFF	Cyclic flashing	Audio MUTED The module has detected a serious anomaly and is in protected mode
Amplifier temperature management:					
First thermal threshold	ON	Cyclic flashing (1 slow flashes)	Normal operation	Normal operation	Audio ACTIVE The amplifier module begins a gradual decrease of the volume in 0.1dBm steps to compensate 'temperature increase up to a maximum reduction of 3dBm.
Second thermal threshold	ON	Cyclic flashing (2 quick flashes)	Normal operation	Normal operation	Audio ACTIVE The amplifier module reduces the volume further 3dBm always in 0.1dBm steps up to a maximum reduction of 6dBm respect original volume.

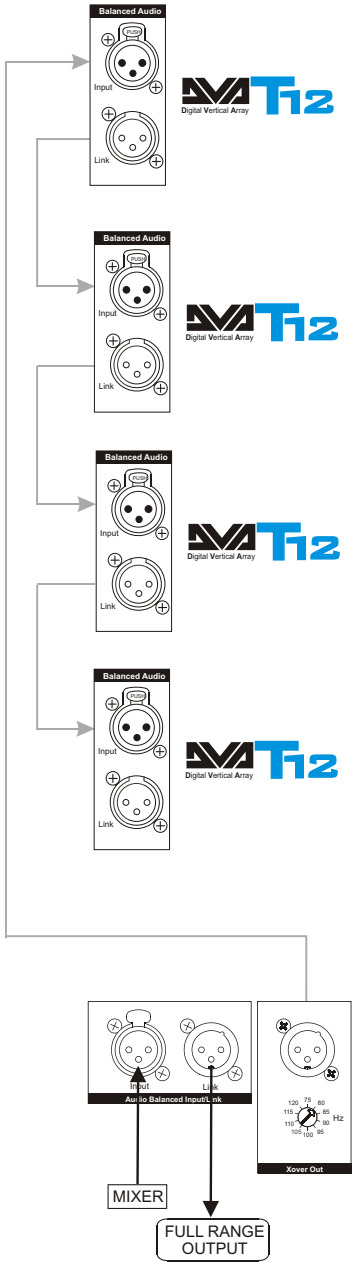
NB The temperatures shown on the plug-in RDnet software refer to the internal temperature of the power semiconductors. These temperatures are not displayed the temperatures of accessible parts user

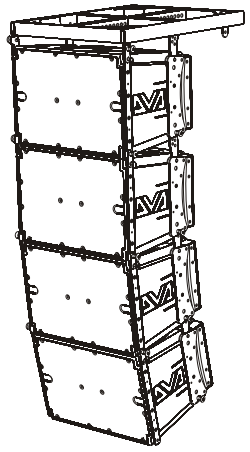
MODULE STATUS	LED «Remote Preset Active»	LED «LINK»	LED «ACTIVE»	MODULE FUNCTIONS
RDNET not active	OFF	OFF	OFF	The module is functioning normally. The volume (INPUT SENS) and the rotary switch (DSP Preset) are active
RDNET connect	ON	ON	Cyclic flashing	The amplifier module is remotely controlled by RDNET. The volume (INPUT SENS) and the rotary switch (DSP Preset) are bypassed
Equalization «USER Eq» (rotary switch «DSP Preset» set to 9)	Cyclic flashing	OFF	OFF	The module functions normally. The equalization saved by means of RDNET is being used.

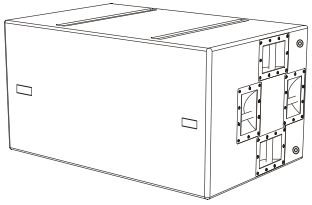
SCHEMA A BLOCCHI
BLOCK DIAGRAM
BLOCKSCHALTBILD
DIAGRAMA EM BLOQUES



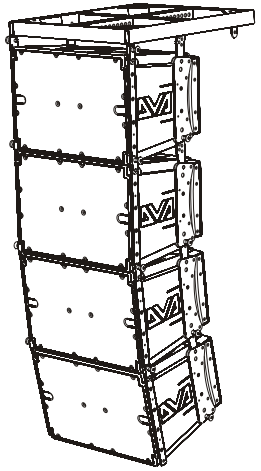
COLLEGAMENTI
CABLE CONNECTIONS
VERKABELUNG
CABLAGE

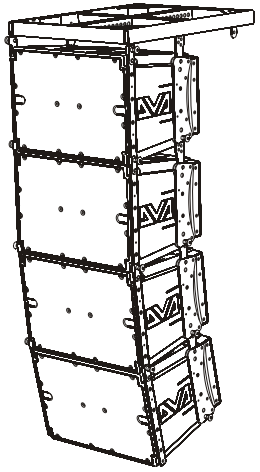


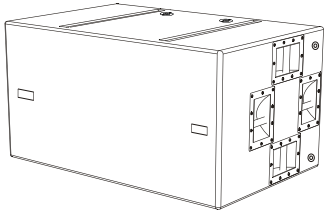




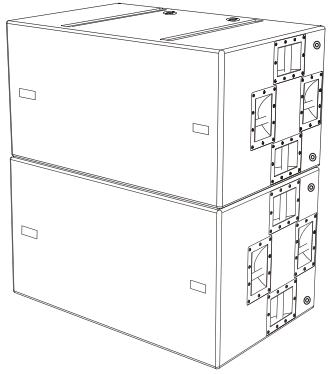
INSTALLAZIONE
INSTALLATION
INSTALLATIONEN
INSTALLATIONS



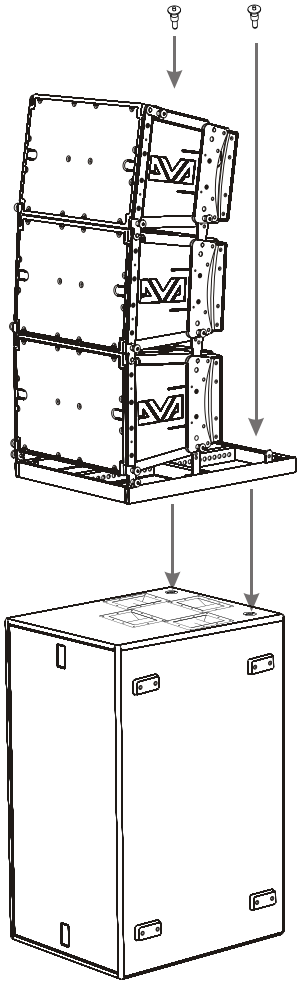


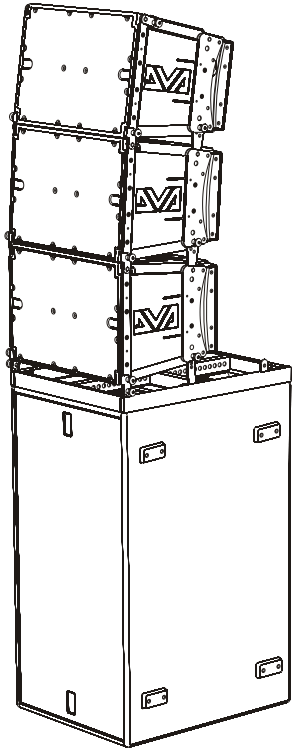


Utilizzo in appoggio
Supported use
Anwendung mit Aufstützung
Utilisation en appui

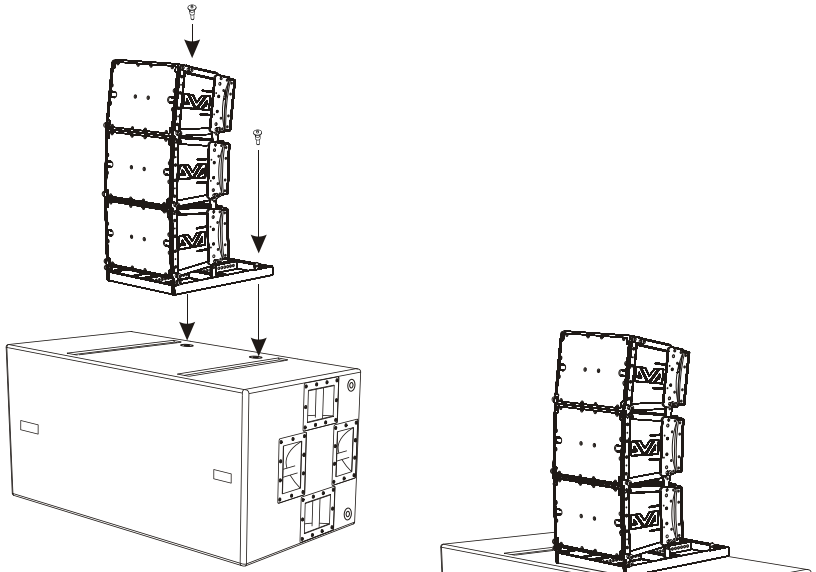


Impilato
Stacked
Aufgesetzt
Empilée



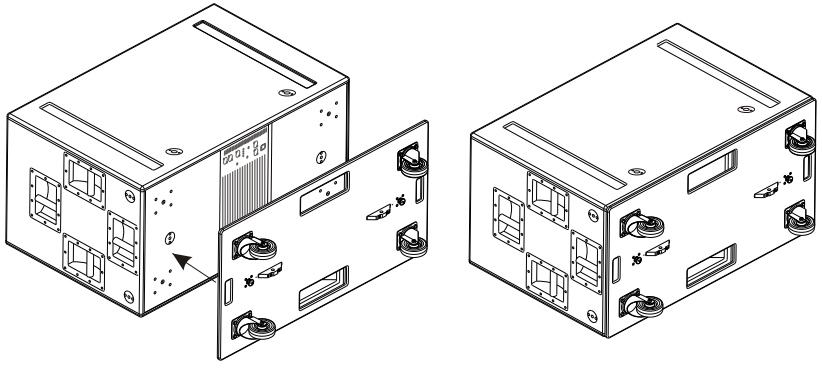


Utilizzo in appoggio verticale (DVA T4/T12 montaggio “Ground stacking”)
Supported use (DVA T4/T12 “Ground stacking” assembling)
Anwendung mit Aufstützung (DVA T4 T12 “Ground stacking” Zusammenbauen)
Utilisation en appui (DVA T4/T12 “Ground stacking” installation)

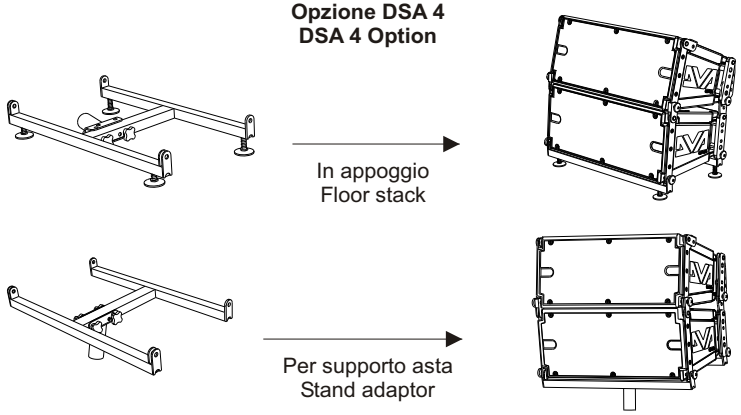


Utilizzo in appoggio verticale (DVA T4/T12 montaggio “Ground stacking”)
Supported use (DVA T4/T12 “Ground stacking” assembling)
Anwendung mit Aufstützung (DVA T4 T12 “Ground stacking” Zusammenbauen)
Utilisation en appui (DVA T4/T12 “Ground stacking” installation)

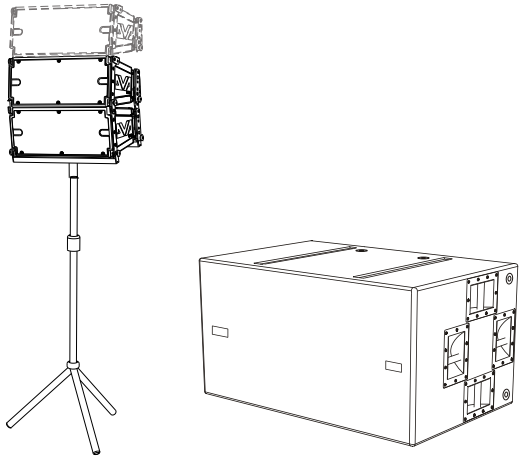
Opzione DVA DOLLY
DVA DOLLY Option



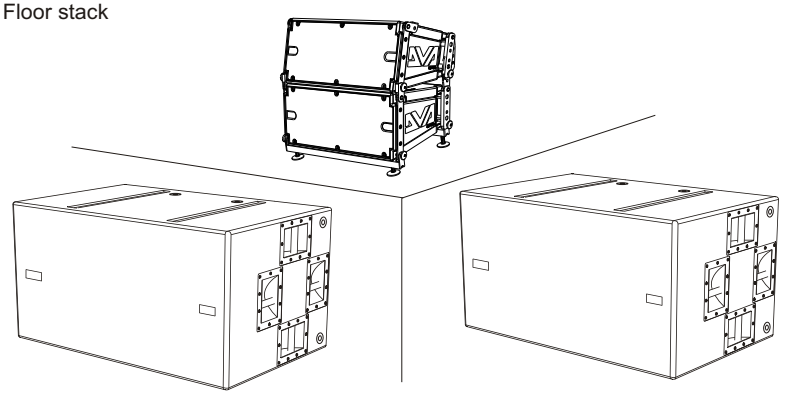
Opzione DSA 4
DSA 4 Option



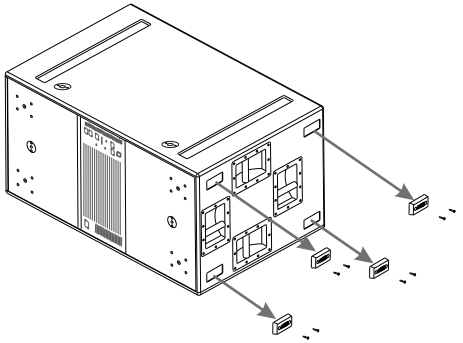
Per supporto asta
Stand adaptor

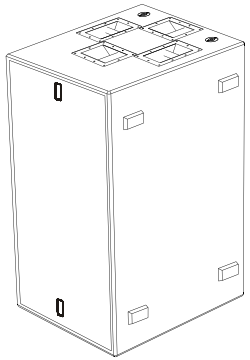


In appoggio
Floor stack



Nota: E' possibile montare 4 piedi in gomma sul fianco per utilizzo in appoggio (in dotazione)
Note: It is possible to mount 4 rubber feet on the side for bookshelf use (provided)
Anmerkung: Es ist moglich, 4 Gummifuße auf die Seite fur die Verwendung mit Stutze zu montieren (die Fuße werden von der Baufirma geliefert)
Note: Il est possible de monter quatre pieds caoutchouc sur le coté puor une utilisation en appui (en dotation)



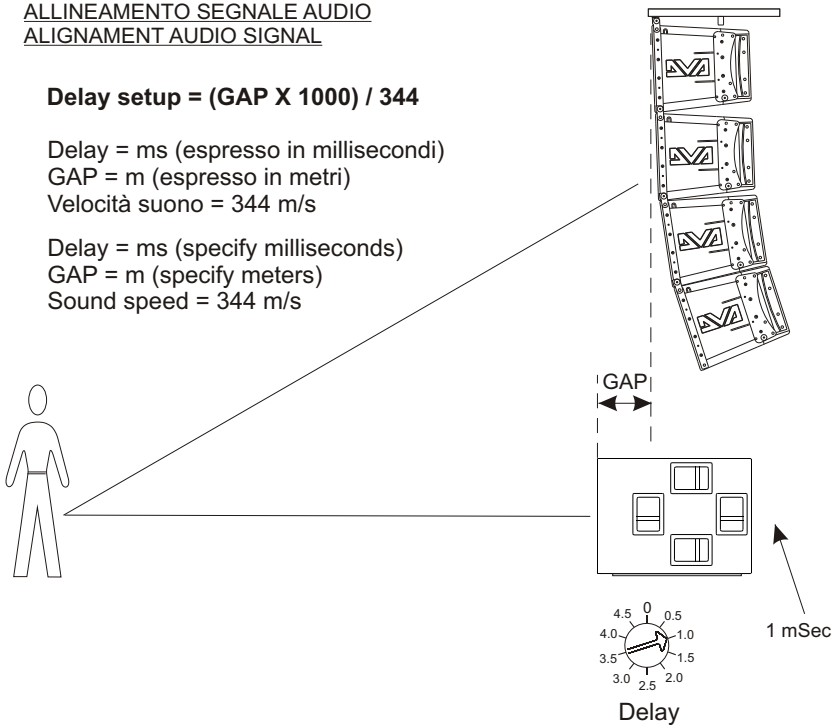


ALLINEAMENTO SEGNALE AUDIO
ALIGNAMENT AUDIO SIGNAL

Delay setup = (GAP X 1000) / 344

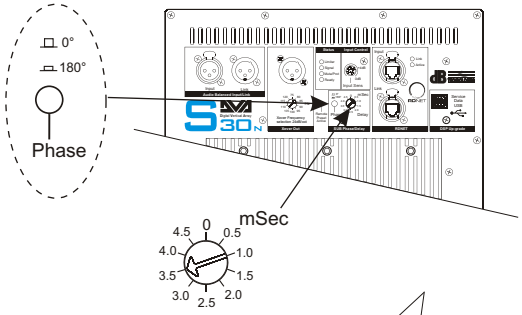
Delay = ms (espresso in millisecondi)
GAP = m (espresso in metri)
Velocità suono = 344 m/s

Delay = ms (specify milliseconds)
GAP = m (specify meters)
Sound speed = 344 m/s

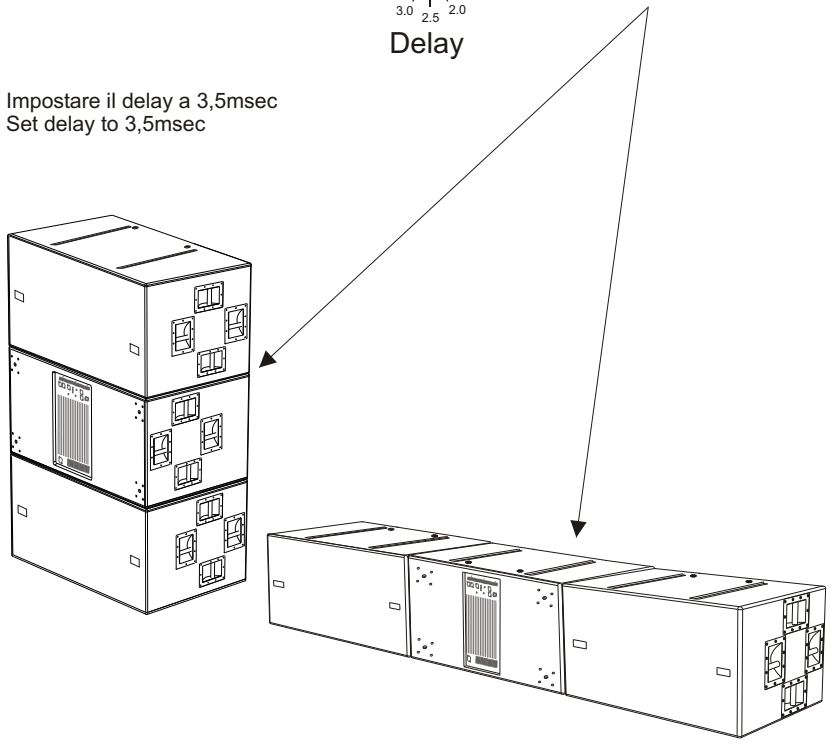


CONFIGURAZIONE CARDIOIDE
CARDIOID CONFIGURATION

Ruotare la fase di 180°
Rotate 180° phase



Impostare il delay a 3,5msec
Set delay to 3,5msec



ISTRUZIONI DI SICUREZZA PER ACCESSORI / SAFETY INSTRUCTIONS FOR ACCESSORIES
ZUBEHÖR SICHERHEITSHINWEISE / INSTRUCTIONS DE SÉCURITÉ POUR LES ACCESSOIRES

Contattare dB Technologies per gli accessori da utilizzare a corredo.
Si declina ogni responsabilità da un utilizzo inappropriato degli accessori o di dispositivi aggiuntivi non idonei allo scopo.

Contact dB Technologies for accessories to be used with speakers.
Will not accept any responsibilty when inappropriate accessories or not suitable additional devices are used.

Kontaktieren sie dBTechnologies für passendes Lautsprecherzubehör.
Falls unpassendes Zubehör verwendet wird, wird jegliche Haftung ausgeschlossen.

Contact dBTechnologies pour les accessoires à utiliser avec la machine.
N'accepterons pas toutes les responsabilités lorsque des accessoires inappropriés ou ne conviennent pas à des dispositifs supplémentaires sont utilisés.