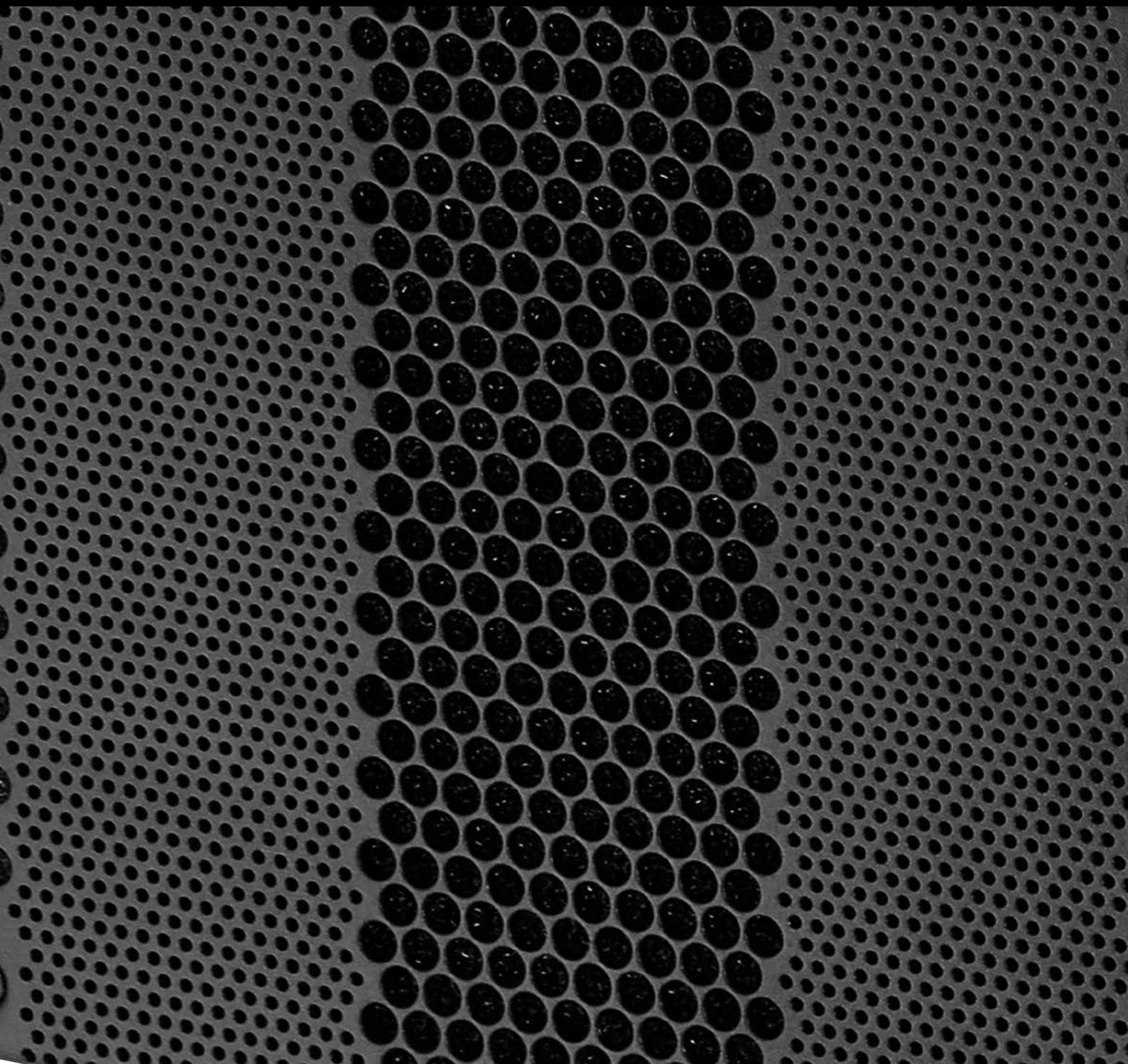
T

T-Series



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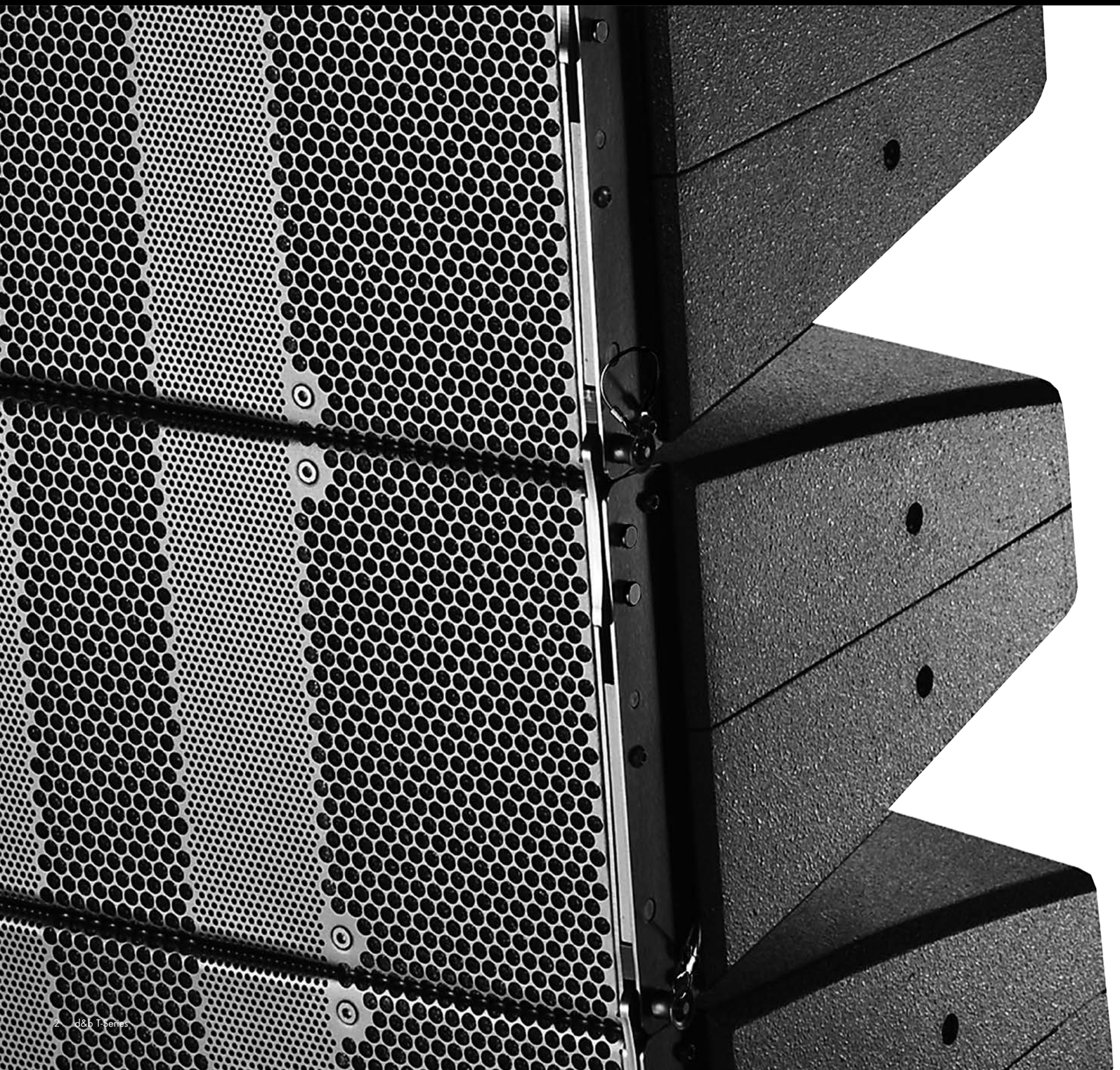
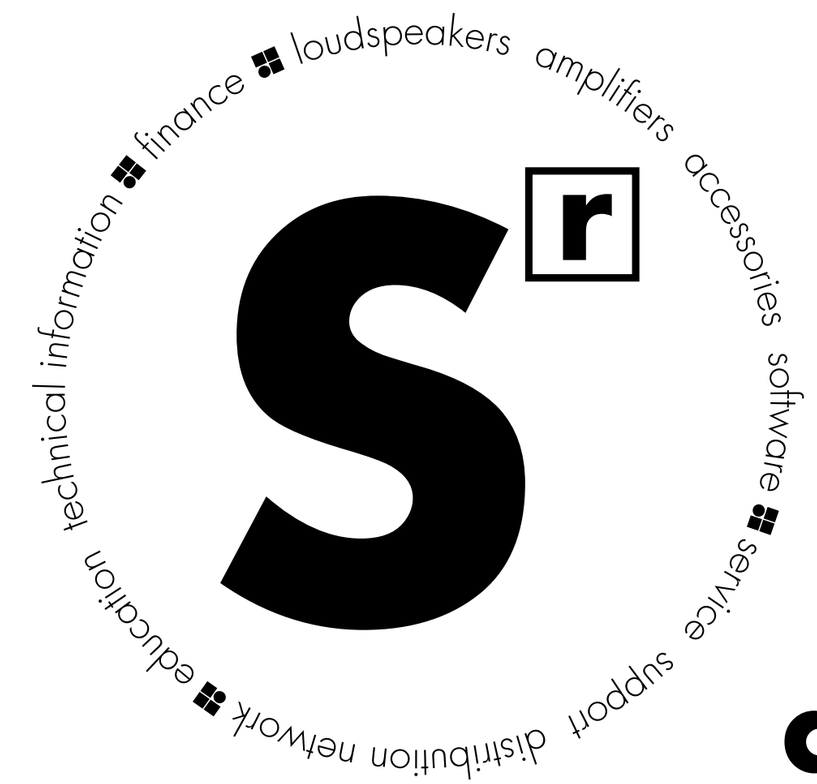
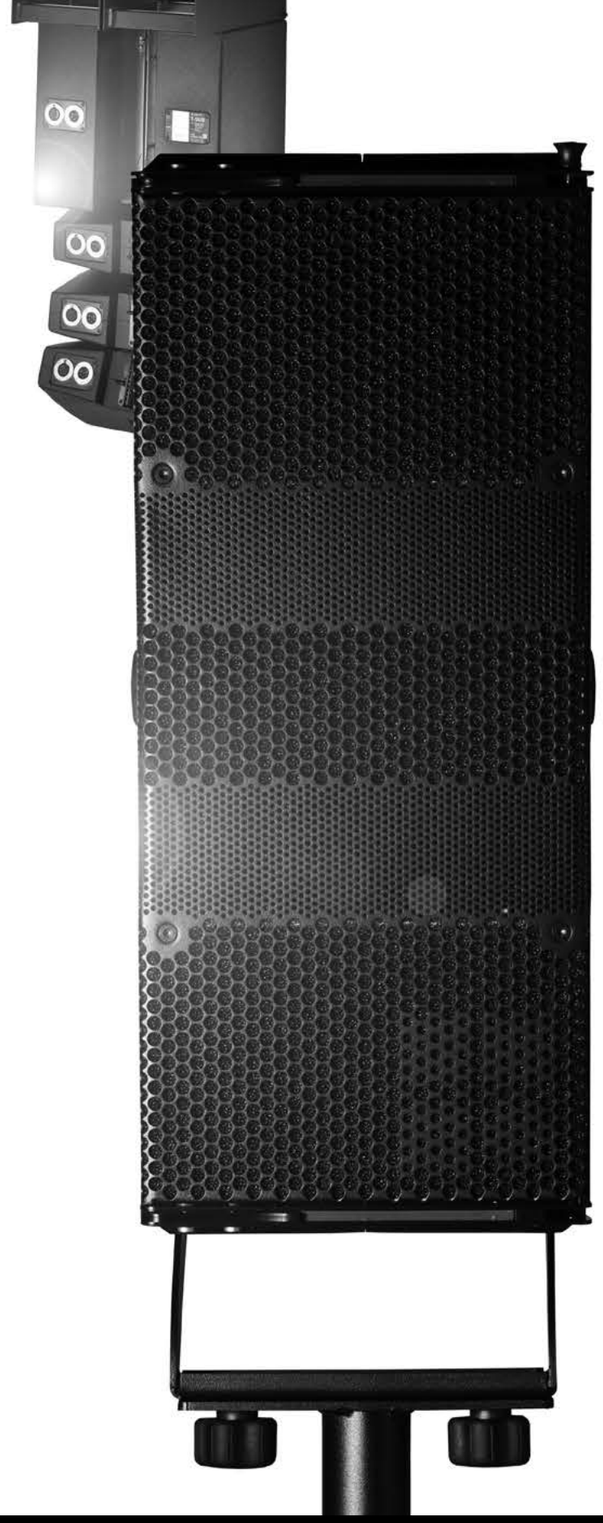




d&b System reality

As the name implies a d&b audiotechnik system is not just a loudspeaker. Nor is it merely a sum of the components: loudspeakers, amplifiers, accessories and software. Right from the outset the d&b audiotechnik approach was to build integrated sound reinforcement systems that actually are more than the combination of parts: an entirety where each fits all. Every element is tightly specified, precisely aligned and carefully integrated to achieve maximum efficiency. For ease of use, all the user-definable parameters are integrated, allowing the possibility of adjustment, either via remote control surfaces or directly on the amplifiers. Neutral sound characteristics leave the user all the freedom needed to realise whatever the brief. At the same time d&b offers integrated finance, service and support, a knowledgeable distribution network, education and training as well as technical information, so the same optimal acoustic result is achieved consistently by every system anywhere, at any time. In reality: the d&b System reality.



The **T-Series** offers two different loudspeaker technologies in one package delivering considerable performance as the smallest d&b line array and with a twist transforming into a stand-alone point source system. A fusion of techniques is used to deliver exemplary directivity control for situations where gain before feedback is an absolute requirement. These encompass dipolar low frequency driver arrangements, high excursion drivers and a unique combination of rotatable horn and acoustic lens. The broad application scope of the T-Series ranges from small to medium sized applications. The unobtrusive visual design, compact dimensions, high power and exemplary directivity performance makes the T-Series loudspeakers a good choice in many theatres, musicals, conference and presentation situations, live television and orchestral shows. The **T loudspeakers** integrate specially designed unobtrusive rigging and mounting allowing quick and simple deployment in changing environments with the clear perspective to provide mobile, flexible, configurable sound solutions. The **Ti loudspeakers** differ only in cabinet construction and mounting hardware. They are intended for permanently installed performance spaces where the specification is rider driven by the artist or mix engineer's preferences. The Ti cabinets and mounting hardware are mechanically adapted for installation use, are weather protected for climatically hostile environments and can be colour matched to interior designs.

The T-Series

The 2-way passive **T10** loudspeaker may be deployed in multiples as line array that maintains horizontal constant directivity down to approximately 600 Hz or as a high directivity point source loudspeaker. Accurate control of horizontal directivity is further enhanced by a large frequency overlap through the crossover range, while adaption for line source or point source orientation is achieved without the use of any tools. The T10 HF driver is fitted to a waveguide horn producing vertical line source directivity. Rotation of the horn by 90° produces an accurate point source dispersion transforming a vertically oriented T10 into a stand-alone full range loudspeaker. When the T10 is deployed upright as a point source, the vertical directivity control extends approximately one octave lower than similarly sized biaxial loudspeakers.
The installation specific Ti10 loudspeakers share the same characteristics, with different versions designed for varied applications: the **Ti10L** loudspeaker is used in multiples as elements of line arrays and incorporates appropriate rigging, whilst the **Ti10P** is used as a point source standalone loudspeaker without the line array hardware.

The **T** and **Ti subwoofers** are actively driven bass-reflex subwoofers utilizing a long excursion 15" neodymium driver, sharing the same width and integrated rigging fittings as the T10 and Ti10L respectively. They are used to increase the low frequency headroom and extend the bandwidth of a T10 and Ti10L column down to 47 Hz.
The **B4-SUB** is intended for use in mobile applications. It's a compact high performance cardioid subwoofer utilizing two long excursion neodymium drivers in an integrated cardioid setup to avoid unwanted energy behind the system. This passive cardioid design is driven by a single amplifier channel and intended for ground stacked setups.

T10 loudspeaker in line source orientation

T10 loudspeaker in point source orientation

Ti10L loudspeaker

Ti10P loudspeaker

T subwoofer

Ti subwoofer

B4 subwoofer

The d&b software offering aides the entire system setup process, from the simulation and planning of the loudspeaker systems, to the remote control and monitoring of the system functions during the event, followed by service functionality to verify system performance prior to de-rigging. The **ArrayCalc** simulation software allows the virtual optimization of loudspeaker line arrays, point source and column loudspeakers as well as subwoofers and their adjustment to venue conditions. Using the R1 export function, a project file containing the simulation data, including the respective amplifier settings is generated for deployment in the **R1** Remote control software. R1 then feeds the settings to the amplifiers from a central location to allow rapid verification and fine adjustment on site. Service functions enable firmware updates of the amplifiers as and when these are available.

The d&b **D6** and **D12** dual channel as well as the **D80** four channel amplifiers realize the complete system and incorporate d&b loudspeaker specific configuration information. They provide three different power ranges and have analog and digital signal inputs and links. These devices are specially designed and manufactured by d&b utilizing Digital Signal Processing and include switchable functions for precisely tailoring system response for a wide variety of applications. Delay capabilities and equalization on each channel of every amplifier reduce the need for external processing devices, with user definable 4-band parametric EQ for the D6 and D12 compared to the two 16-band equalizers incorporated into the D80.

D6 amplifier

D12 amplifier

D80 amplifier

The T10 loudspeaker

T10 loudspeaker

The T10 cabinet is a passive 2-way design that houses 2 x 6.5" drivers, a 1.4" exit HF compression driver and can be either used as a line source or high directivity point source loudspeaker. The very compact loudspeaker design is a unique combination of a rotatable waveguide with horn and an acoustic lens. The horn can easily be rotated from outside the loudspeaker without tools or removing the front grill. This is achieved through apertures at the cabinet sides which allow rotation to both the line and point source positions. The T10 provides a vertical line source with a 90° horizontal dispersion that is maintained down to approximately 600 Hz, whilst the integrated lens in the front grill widens the HF dispersion in line array mode to 105°. When the loudspeaker is used upright as a point source, the lens curves the wave front of the line source providing a 90° x 35° dispersion pattern. The two 6.5" neodymium LF drivers are positioned in a dipolar arrangement providing an exceptional dispersion control even at lower frequencies.

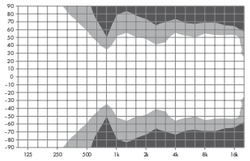
The T10 cabinet is constructed from polyurethane integral hard foam with an impact resistant finish and has integrated line array rigging hardware. The front of the loudspeaker cabinet is protected by a rigid metal grill backed by an acoustically transparent foam.

System data

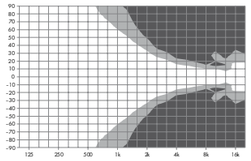
Frequency response (–5 dB standard)	68 Hz - 18 kHz
Frequency response (–5 dB CUT mode)	120 Hz - 18 kHz
Max. sound pressure (Line/Arc setup, 1 m, free field)[1]	
with D6	129 dB
with D12	132 dB
with D80	132 dB
Max. sound pressure (PS setup, 1 m, free field)[1]	
with D6	127 dB
with D12	130 dB
with D80	130 dB
Input level (100 dB SPL/1 m)	–13 dBu

Loudspeaker data

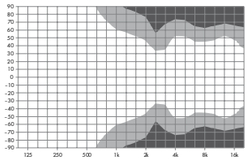
Nominal impedance	16 ohms
Power handling capacity (RMS/peak 10 msec)	200/800 W
Nominal dispersion angle (line source, horizontal)	105°
Nominal dispersion angle (point source, h x v)	90° x 35°
Components	2 x 6.5" driver with neodymium magnet
	1.4" exit compression driver on rotatable waveguide
	passive crossover network
Connections	2 x NLT4 F/M
	optional 2 x EP5 or 2 x NL4
Weight	11kg (24 lb)



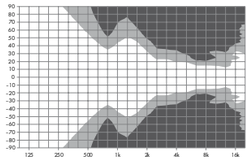
T10 horizontal dispersion characteristics, line source[2]



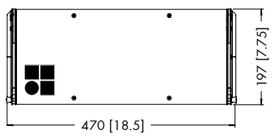
T10 vertical dispersion characteristics, line source[2]



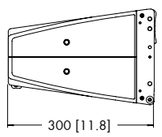
T10 horizontal dispersion characteristics, point source[2]



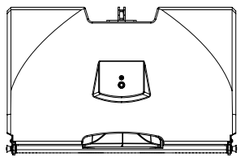
T10 vertical dispersion characteristics, point source[2]



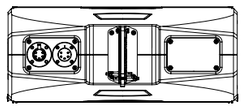
Front view



Side view



Top view



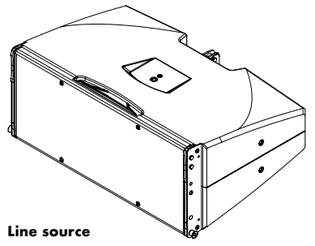
Rear view

T10 cabinet dimensions in mm [inch]

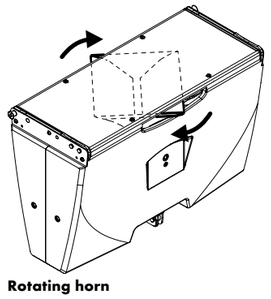
1 Broadband measurement, pink noise, crest factor 4, peak measurement, linear weighting
2 Dispersion angle vs frequency plotted using lines of equal sound pressure (isobars) at –6 dB and –12 dB

The T10 electroacoustic concept

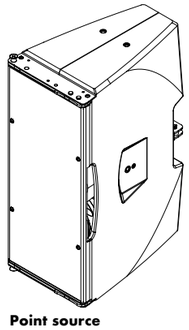
The unique combination of a rotatable waveguide with horn and an acoustic lens enables T10 to transform from line source to point source mode easily from outside without tools or removing the front grill. This provides a vertical line source with a 90° horizontal dispersion, whilst the integrated lens in the front grill widens the HF dispersion in line source mode to 105°. When the loudspeaker is used upright as a point source, the lens curves the wave front of the line source providing a 90° x 35° dispersion pattern.



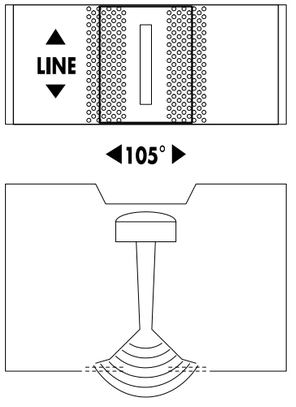
Line source



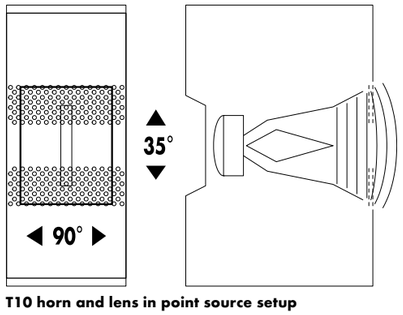
Rotating horn



Point source



T10 horn and lens in line source setup



T10 horn and lens in point source setup

The Ti10L loudspeaker

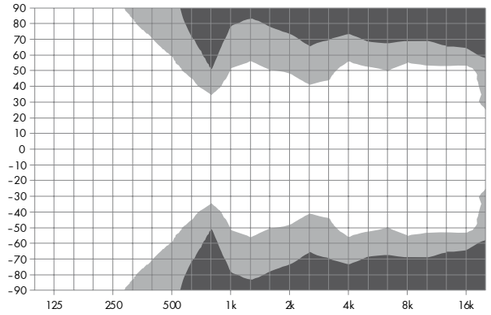
Ti10L loudspeaker
The Ti10L loudspeaker is the installation version of the T10 for deployment as a line array loudspeaker. Road and installation versions differ only in the rigging hardware.
The Ti10L cabinet is a passive 2-way design that houses 2 x 6.5" drivers and a 1.4" exit HF compression driver. The very compact loudspeaker design is a unique combination of a rotatable waveguide with horn and an acoustic lens. It provides a vertical line source with a 90° horizontal dispersion that is maintained down to approximately 600 Hz, whilst the integrated lens in the front grill widens the HF dispersion in line array mode to 105°.
The two 6.5" neodymium LF drivers are positioned in a dipolar arrangement providing an exceptional directivity control even at lower frequencies.
The Ti10L cabinet is constructed from polyurethane integral hard foam with an impact resistant finish and has integrated line array rigging hardware which, once deployed is fundamentally invisible when viewed from the front. The front of the loudspeaker cabinet is protected by a rigid metal grill backed by an acoustically transparent foam.

System data

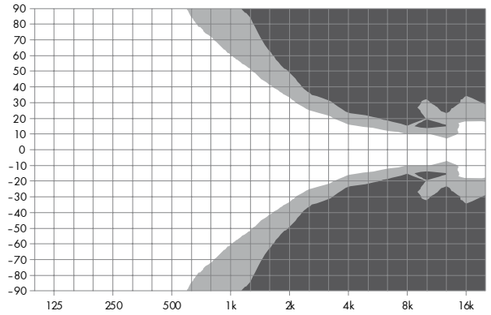
Frequency response (–5 dB standard) ..... 68 Hz - 18 kHz
Frequency response (–5 dB CUT mode) ..... 120 Hz - 18 kHz
Max. sound pressure (1 m, free field)[1] .....
with D6 ..... 129 dB
with D12 ..... 132 dB
with D80 ..... 132 dB
Input level (100 dB SPL/1 m) ..... –13 dBu

Loudspeaker data

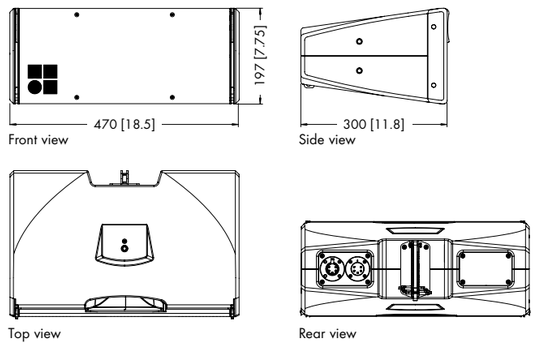
Nominal impedance ..... 16 ohms
Power handling capacity (RMS/peak 10 msec) ..... 200/800 W
Nominal dispersion angle (h) ..... 105°
Components ..... 2 x 6.5" driver with neodymium magnet
..... 1.4" exit compression driver on rotatable waveguide
..... passive crossover network
Connections ..... 2 x NL4
Weight ..... 11 kg (24 lb)



Ti10L horizontal dispersion characteristics[2]



Ti10L vertical dispersion characteristics[2]



Ti10L cabinet dimensions in mm [inch]

1 Broadband measurement, pink noise, crest factor 4, peak measurement, linear weighting
2 Dispersion angle vs frequency plotted using lines of equal sound pressure (isobars) at –6 dB and –12 dB

The Ti10P loudspeaker

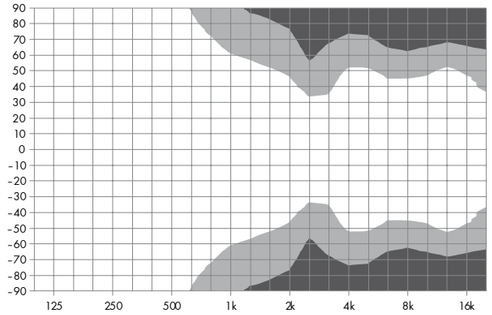
Ti10P loudspeaker
The Ti10P loudspeaker is the installation version of the T10 for deployment as a point source loudspeaker. Road and installation versions differ only in the mounting hardware.
The Ti10P cabinet is a passive 2-way design that houses 2 x 6.5" drivers, a 1.4" exit HF compression driver and can be used either in horizontal or vertical orientation. The very compact loudspeaker design is a unique combination of a rotatable waveguide with horn and an acoustic lens. The horn can easily be rotated from outside the loudspeaker without tools or removing the front grill. This is achieved through apertures at the cabinet sides which allow rotation to both vertical or horizontal setup. It provides a vertical line source with a 90° horizontal dispersion that is maintained down to approximately 600 Hz, whilst the integrated lens in the front grill widens the HF dispersion in horizontal setup to 105°. When the loudspeaker is used upright, the lens curves the wave front of the line source providing a 90° x 35° dispersion pattern.
The two 6.5" neodymium LF drivers are positioned in a dipolar arrangement providing exceptional directivity control even at lower frequencies.
The Ti10P cabinet is constructed from polyurethane integral hard foam with an impact resistant finish and has integrated threads for attaching installation hardware. The front of the loudspeaker cabinet is protected by a rigid metal grill backed by an acoustically transparent foam.

System data

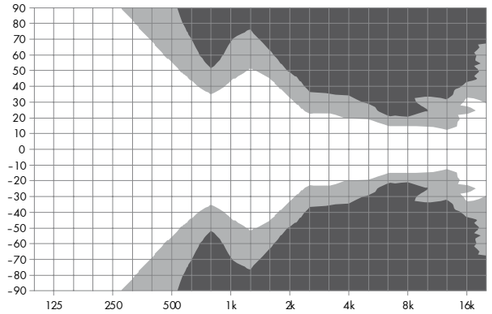
Frequency response (–5 dB standard) ..... 68 Hz - 18 kHz
Frequency response (–5 dB CUT mode) ..... 120 Hz - 18 kHz
Max. sound pressure (1 m, free field)[1] .....
with D6 ..... 127 dB
with D12 ..... 130 dB
with D80 ..... 130 dB
Input level (100 dB SPL/1 m) ..... –13 dBu

Loudspeaker data

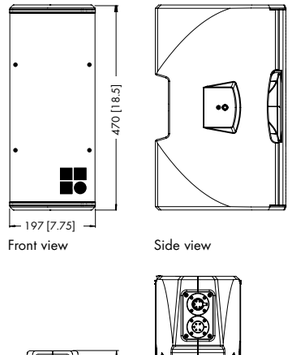
Nominal impedance ..... 16 ohms
Power handling capacity (RMS/peak 10 msec) ..... 200/800 W
Nominal dispersion angle (h x v) ..... 90° x 35°
Components ..... 2 x 6.5" driver with neodymium magnet
..... 1.4" exit compression driver on rotatable waveguide
..... passive crossover network
Connections ..... 2 x NL4
Weight ..... 10 kg (23 lb)



Ti10P horizontal dispersion characteristics[2]



Ti10P vertical dispersion characteristics[2]



Ti10P cabinet dimensions in mm [inch]

1 Broadband measurement, pink noise, crest factor 4, peak measurement, linear weighting
2 Dispersion angle vs frequency plotted using lines of equal sound pressure (isobars) at –6 dB and –12 dB

The T and Ti subwoofers

T and Ti subwoofers

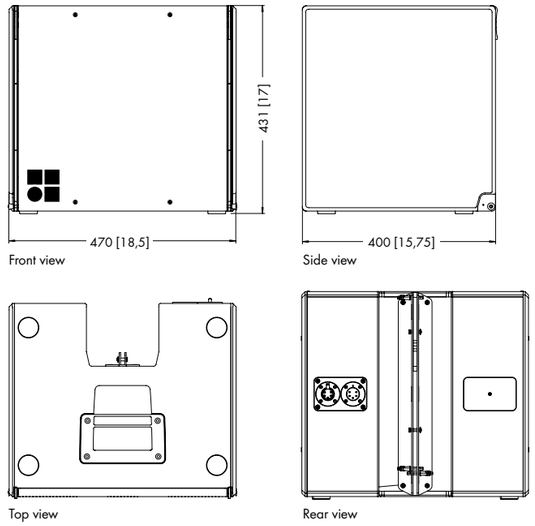
The T and Ti-SUB are actively driven bass-reflex designs housing a long excursion 15" driver with a neodymium magnet. They can be used to supplement the LF headroom of the T and Ti loudspeakers in various combinations, ground stacked or flown, either integrated on top of an array or as a separate column. They can also supplement the T10 and Ti10 loudspeakers respectively in ground stacked applications where the SUBs can mechanically support them.
The cabinets are mechanically connected using rigging links on both sides of the cabinet front which slide out when needed, and with a central splay link at the rear of the cabinet. All necessary rigging components are mounted to the cabinet. The T and Ti-SUB cabinets are constructed from marine plywood and have an impact resistant paint finish. The T-SUB cabinet has a handle mounted in the top panel. The front of the loudspeaker cabinets are protected by a rigid metal grill in front of an acoustically transparent foam.

System data

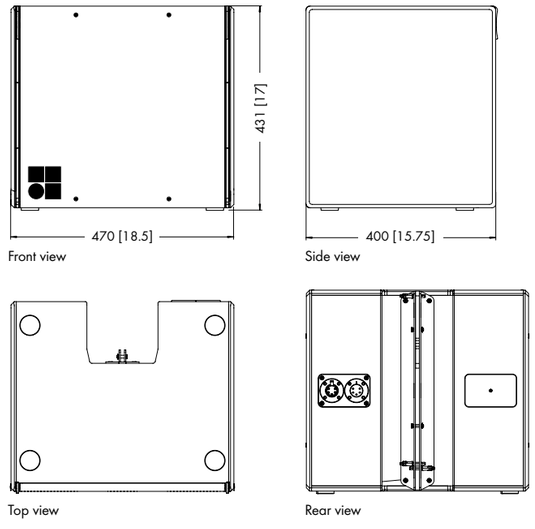
Frequency response (–5 dB standard).....47 - 140 Hz
Frequency response (–5 dB 100 Hz mode).....47 - 100 Hz
Max. sound pressure (single cabinet, 1 m, free field)[1] .....
with D6.....127 dB
with D12 .....130 dB
with D80 .....130 dB

Loudspeaker data

Nominal impedance.....8 ohms
Power handling capacity (RMS/peak 10 msec).... 300/1600 W
Components..... 15" driver with neodymium magnet
Connections T-SUB ..... 2 x NLT4 F/M
..... optional 2 x EP5 or 2 x NL4
Connections Ti-SUB .....2 x NL4
Weight..... 17 kg (37 lb)



T-SUB cabinet dimensions in mm (inch)



Ti-SUB cabinet dimensions in mm (inch)

[1] Broadband measurement, pink noise, crest factor 4, peak measurement, linear weighting

The B4 subwoofer

B4 subwoofer

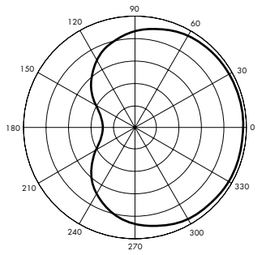
The B4-SUB is an actively driven cardioid subwoofer powered by a single amplifier channel. It houses two long excursion neodymium drivers in an integrated cardioid setup: a 15" driver in a bass-reflex design facing to the front and a 12" driver in a two chamber bandpass design radiating to the rear. The cardioid dispersion pattern resulting from this arrangement avoids unwanted energy behind the system that greatly reduces the excitation of the reverberant field at low frequencies and provides the greatest accuracy of low frequency reproduction. The B4 subwoofer can only be used in a ground stacked configuration.
The B4-SUB cabinet is constructed from marine plywood and has an impact and Weather Resistant paint finish and a pair of handles. An M20 threaded flange in the top panel accepts the d&b Loudspeaker stand winder M20. The front of the loudspeaker cabinet is protected by a rigid metal grill in front of an acoustically transparent foam. Two runners extend from the rear to the front panel of the cabinet protecting the bottom panel against scratching. Two correspondingly shaped recesses are incorporated in the top panel of each cabinet that accept these runners to prevent cabinet movement when stacked. Mounted on the rear panel are four heavy duty wheels.

System data

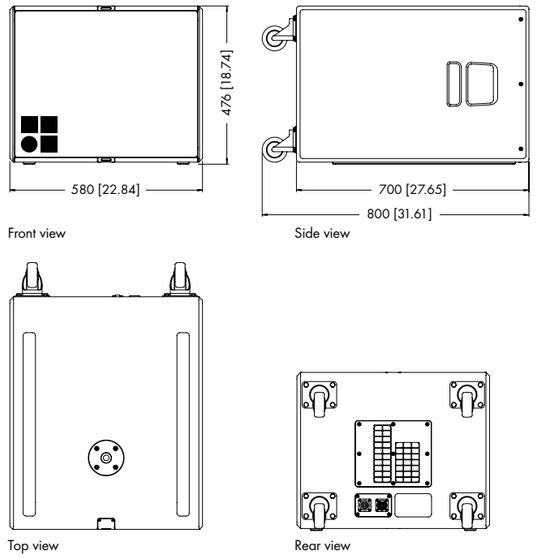
Frequency response (–5 dB standard).....40 -150 Hz
Frequency response (–5 dB 100 Hz mode).....40 -100 Hz
Max. sound pressure (1 m, free field)[1] .....
with D6.....128 dB
with D12 .....131 dB
with D80 .....131 dB

Loudspeaker data

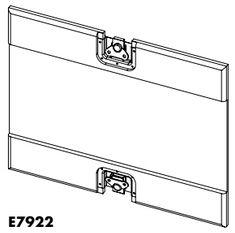
Nominal impedance.....6 ohms
Power handling capacity (RMS/peak 10 msec) .....500/2000 W
Components.....
Front/Rear..... 15"/12" driver
Connections ..... 2 x NLT4 F/M
..... optional 2 x EP5 or 2 x NL4
Weight.....44 kg (97 lb)



Cardioid polar pattern



B4-SUB cabinet dimensions in mm (inch)

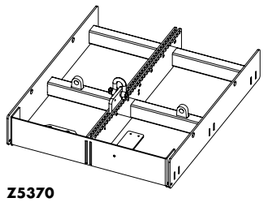


E7922
B4-SUB Wooden lid

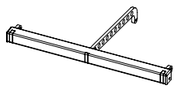
[1] Broadband measurement, pink noise, crest factor 4, peak measurement, linear weighting

The T-Series rigging and mounting accessories

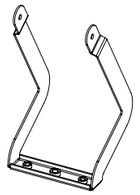
Safety approval
d&b loudspeakers and accessories are designed for setup and use within situations requiring compliance with the provisions and directives of BGV C1 Rule for the Prevention of Accidents.



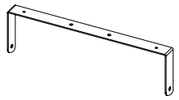
Z5370
T Flying frame
2 x Z5160 Q load adapter supplied with each T Flying frame



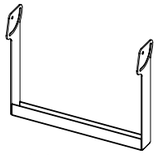
Z5374
Ti Flying bar



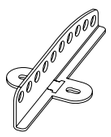
Z5371
T Flying bracket



Z5372
T Horizontal bracket

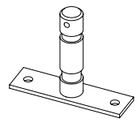


Z5373
T Cluster bracket
for up to 3 x T10/Ti10L

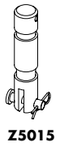


Z5354
E8/E12 Flying adapter

Z5355
E8/E12 Flying adapter link

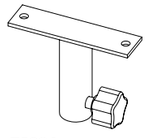


Z5010
TV spigot with fixing plate

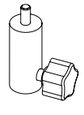


Z5015
TV spigot for
Flying adapter 02

Z5029
TV spigot M10

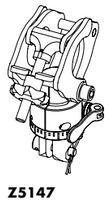


Z5024
Loudspeaker stand adapter



Z5034
Stand adapter M10

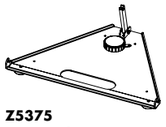
Z5012
Pipe clamp for TV spigot
For a tube diameter up to 70 mm/2.75″



Z5147
Rota clamp
WLL: 500 kg/1100 lb;
for a tube diameter up to 51 mm/2″

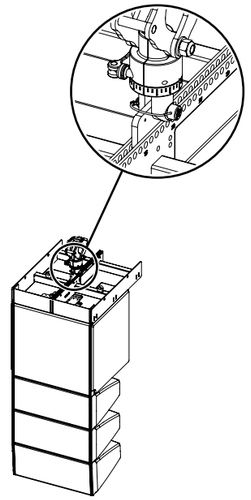
Z5155
Q Hoist
connector chain

E6507
1t Shackle

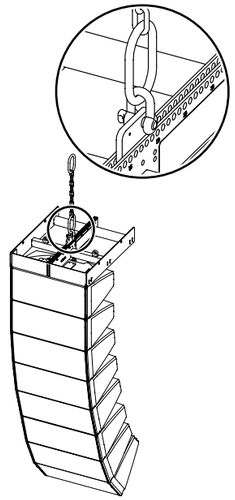


Z5375
T Base plate
for T10 with B4 and Q-SUB only

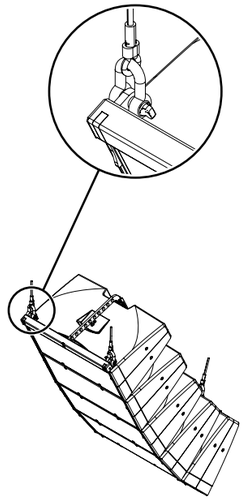
The T-Series rigging and mounting examples



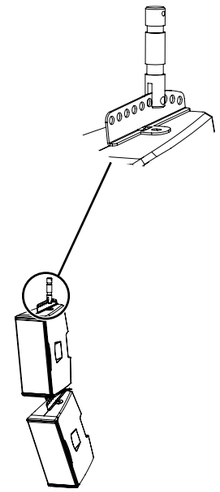
T10/T-SUB or Ti10L/Ti-SUB
line array with
Z5370 T Flying frame
Z5147 Rota clamp



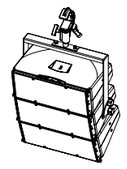
T10 or Ti10L line array with
Z5370 T Flying frame
Z5155 Q Hoist connector chain
E6507 1t Shackle



Ti10L line array with
Z5374 Ti Flying bar
E6507 1t Shackle

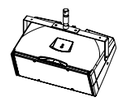


T10 point source or Ti10P
as vertical array with
Z5354 E8/E12 Flying adapter
Z5355 E8/E12 Flying adapter link
Z5015 TV spigot 02

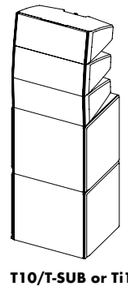


3 x T10 or Ti10L line array with
Z5373 T Cluster bracket
Z5010 TV spigot with fixing plate
Z5012 Pipe clamp for TV spigot

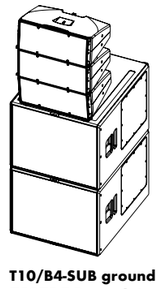
T10 point source or Ti10P with
Z5371 T Flying bracket
Z5010 TV spigot with fixing plate
Z5012 Pipe clamp for TV spigot



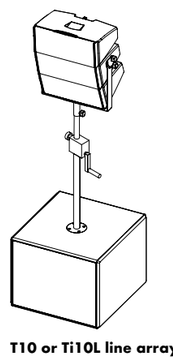
T10 point source or Ti10P with
Z5372 T Horizontal bracket
Z5010 TV spigot with fixing plate



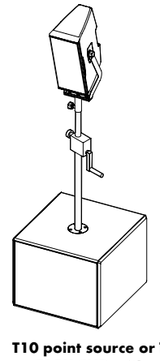
T10/T-SUB or Ti10L/Ti-SUB
ground stack



T10/B4-SUB ground stack with
Z5375 T Base plate



T10 or Ti10L line array
on Q-SUB with
Z5373 T Cluster bracket
Z5013 Loudspeaker stand winder M20
Z5024 Loudspeaker stand adapter



T10 point source or Ti10P
on E15X-SUB with
Z5371 T Flying bracket
Z5013 Loudspeaker stand winder M20
Z5024 Loudspeaker stand adapter

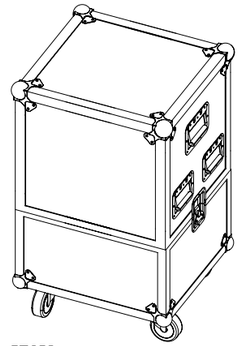
The Ti Weather Resistant and Special Colour options

The Weather Resistant and Special Colour options are only available to order with the Ti version cabinets.

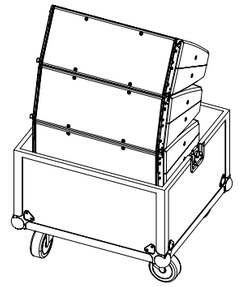
Weather Resistant (WR) option
The WR option enables operation of loudspeakers in changing ambient conditions, however it is not intended to enable permanent, unprotected operation of loudspeakers outdoors. Cabinets being used outdoors even with the WR option should always be aimed either horizontally or with a downward tilt. An additional cover should be positioned over the loudspeakers.
Ti loudspeakers with the Weather Resistant option are supplied with a fixed cable. Cable type H-07-RN-F 2 x 2.5 mm^2/AWG 13 with a length of 5.5 m (18 ft) as standard or length as required.

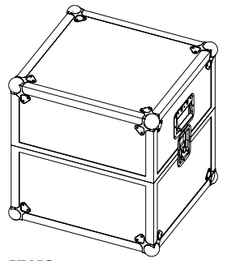
Special Colour (SC) option
The paint finish of all loudspeaker cabinets and most accessories can be executed in almost all RAL colours in accordance with the RAL colour table. Items such as chains, fixing screws, shackles, eyebolts and screws are not painted. Other paint finishes such as metallic are available on request. The acoustically transparent foam fitted behind the rigid metal grill is also painted with the requested RAL colour.

The T-Series cases

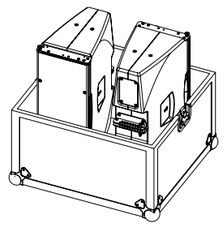


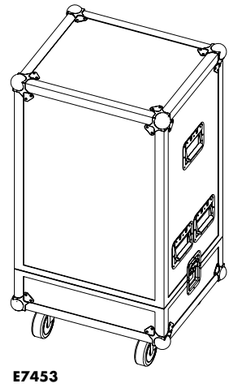
E7451
Touring case 4 x T10



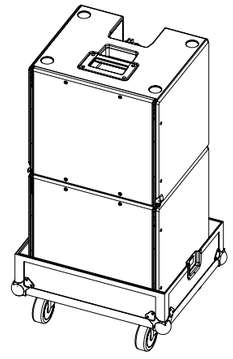


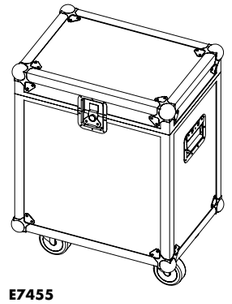
E7452
Touring case 2 x T10



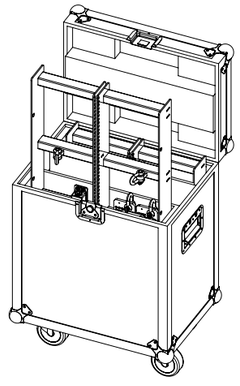


E7453
Touring case 2 x T-SUB





E7455
Touring case 2 x T Flying frame



The d&b ArrayCalc simulation software

The d&b ArrayCalc simulation software is the simulation tool for d&b line arrays, column and point source loudspeakers as well as subwoofers. This is a comprehensive toolbox for all tasks associated with acoustic design, performance prediction, alignment, rigging and safety parameters. For safety reasons d&b line arrays must be designed using the d&b ArrayCalc simulation software.

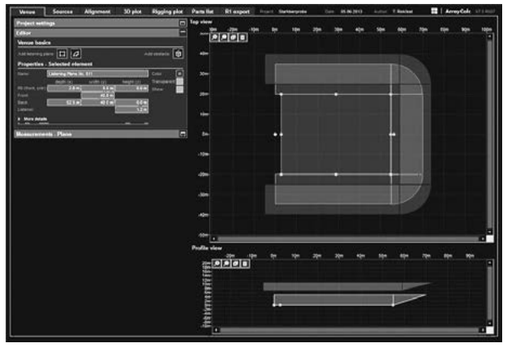
d&b ArrayCalc is available as a native stand-alone application for both Microsoft Windows[1] (Win7 or higher) and Mac OS X[2] (10.6 or higher) operating systems. In combination with the d&b Remote network, this can significantly reduce setup and tuning time in mobile applications, and allows for precise initial simulations when planning installations.

Listening planes in three dimensions can be defined, creating a representation of the audience areas in a given venue. This includes areas such as typical listening planes, arenas, balconies, side stalls, and in the round. Special functions assist in obtaining accurate dimensions with laser distance finders and inclinometers.

Acoustic obstacles, such as arena video score boards can be added to a model.

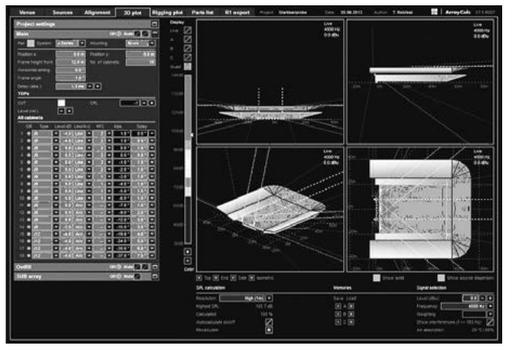
The ArrayCalc R1 export function produces a project file for the R1 Remote control software. Complete details of the system simulated in ArrayCalc are generated, including loudspeakers, amplifiers, remote IDs, groups and all configuration information. This workflow sequence removes the need to manually transfer data from one software program to the other. EASE and DXF data export capabilities are also available.

Further information is provided in the d&b Amplifier and Software brochure which is available for download at www.dbaudio.com.



Venue editor

Sources, array



3D Plot quad

The d&b Remote network

The remote control capability of the d&b Remote network enables central control and monitoring of a complete d&b loudspeaker system from anywhere in the network, be it from a computer in the control room, at the mix position, or on a wireless tablet in the auditorium. This central access to all functions through the d&b Remote network, to controls as well as detailed system and device diagnostics information, unlocks the full potential of the d&b system approach. In a typical user workflow, the d&b Remote network takes settings optimized in the ArrayCalc simulation software and applies these to all the amplifiers within the network. The importation of settings from ArrayCalc allows the system configuration to be quickly accomplished, providing more time for verification and fine tuning.

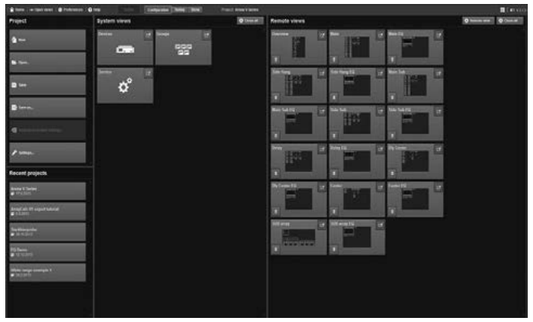
All features, functions and controls available on the front panel of d&b amplifiers may be remotely controlled and/or monitored using R1 Remote control software. This allows each channel of the amplifier to be controlled and enables the creation of groups of loudspeakers. When grouped together, a button or fader can control the overall system level, zone level, equalization and delay, power ON/OFF, MUTE, as well as loudspeaker specific function switches such as CUT/HFA/HFC and CPL. An offline mode is provided for preparation in advance of an event, without the amplifiers being present or connected.

For mobile applications, d&b System check verifies that the system performs within a predefined condition. Extensive facilities for storing and recalling system settings are provided allowing these to be repeated, as and when required. Project files can be easily adjusted for use with a different set of equipment at another location.

In installation projects system integrators can configure the d&b Remote network to offer access to different levels of control, tailored to the operational demands. For example, power ON/OFF for daily use, or more complex functionality for detailed control. Password protection is available to restrict access. Input and Load monitoring allow installation operators to ensure optimum performance at all times.

R1 Remote control software enables d&b amplifiers to be remotely controlled using both Ethernet and CAN-Bus in parallel. The software is optimized for use with touch screen, mouse and keyboard and runs on both Microsoft Windows[1] (Win7 or higher) and Mac OS X[2] (10.6 or higher) operating systems.

Further information is provided in the d&b Amplifier and Software brochure which is available for download at www.dbaudio.com.



Home

Remote in Configuration mode

Open views

1 Microsoft Windows is a registered trademark or trademark of Microsoft Corporation in the United States and/or other countries

2 Mac OS is a trademark of Apple Inc., registered in the U.S. and other countries

The D6, D12 and D80 amplifiers

Two decades have passed since d&b embarked on integrating Digital Signal Processing (DSP) into power amplifiers. It is over ten years since all d&b amplifiers used this technology and included analog and digital signal inputs, extensive loudspeaker control, configuration and protection functions, user definable equalization, delay and the all embracing remote control functionality as standard.

The d&b amplifiers sit right at the very heart of the d&b systems, providing sophisticated control capabilities as well as the power to efficiently drive d&b loudspeakers in whatever the particular application. The amplifiers are developed and manufactured by d&b and incorporate loudspeaker specific setups. Sophisticated protection circuits modelling thermal and mechanical driver behaviour are provided, resulting in the sustained reliability of d&b systems. Switchable functions for precisely tailoring system response in a wide variety of applications are also included, integrating complete loudspeaker system management into the amplifier. The digital elements are specified and constructed to achieve outstanding audio performance while maintaining a very low latency of 0.3 msec The amplifiers are designed specifically for use with d&b loudspeakers, have remote control, monitoring capabilities and switch mode power supplies. To simplify configuration, the output mode of the amplifier can be configured as Dual Channel, Mix TOP/SUB or 2-Way Active modes depending on the application. The user definable equalization and delay functions incorporated in each channel of all d&b amplifiers are intended for tuning in applications such as infills, frontfills or under balcony delays, without the need for external processors. A signal generator offering pink noise or a sine wave program is also incorporated for test and alignment purposes.

d&b amplifiers[1] contain functions to allow system status monitoring and protection features, increasing the longevity of d&b systems. They provide the d&b System check function, which is designed to verify the system performs within a predefined condition; this can be used to report the system condition after a show. Input monitoring can detect incoming pilot tones to verify the integrity of the signal path to the amplifier, while the Load monitoring function determines the status of the loudspeaker impedance. Both d&b System check and Load monitoring can determine the status of an LF or HF driver in systems with multiple elements, even if these are crossed over passively. Automatic and continuous impedance monitoring, along with Input monitoring are designed for incorporation in applications specified to the requirements of International Standard IEC 60849 'Sound Systems for Emergency Purposes'.

d&b amplifiers feature two control interfaces. Firstly, the front panel rotary encoder, combined with the display, provides full access to settings and functions. Secondly, by utilizing the d&b Remote network, the amplifiers can be remotely controlled and monitored from a virtual centre. Every amplifier channel can be assigned a unique channel and device name to simplify identification. The Wink function, which can be enabled remotely, flashes the display backlight to clearly identify specific amplifiers in a system. An integrated password protected LOCK function prevents unauthorized changes.

A powerCON[2] mains connector socket is fitted on the rear panel. The switch mode power supply of each amplifier incorporates mains overvoltage protection, inrush current limiting and loudspeaker protection at start up. Temperature and signal controlled fans cool the internal assemblies. d&b amplifiers offer analog and digital AES/EBU signal inputs, with link outputs for each channel. The AES/EBU link output carries a refreshed signal, while a power fail relay is incorporated to prevent interruption of the signal chain, in the event of a power failure.

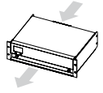
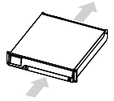
The D12 amplifier incorporates d&b SenseDrive for accurate control of LF drivers in d&b loudspeakers driven 2-Way Active or in actively driven d&b subwoofers. When the D12 is fitted with EP5 connectors and appropriate 5-wire cabling, d&b SenseDrive can be used resulting in an extremely precise bass performance even at high levels. The LoadMatch function integrated within the D80 amplifier enables the electrical compensation of loudspeaker cable properties, without the need for an extra conductor. This results in an increased accuracy of audio reproduction over a bandwidth of up to 20 kHz preserving the tonal balance when cable lengths of up to 70 m (230 ft) are used.

Firmware updates containing new loudspeaker configurations or additional functions can be loaded to the amplifiers via the d&b Remote network.

1 At the time of print, certain functions required within applications specified to achieve compliance with IEC 60849 such as Input and Load monitoring are not implemented in the D80 amplifier, please contact your distributor for further information

2 powerCON® is a registered trademark of the Neutrik AG, Liechtenstein

Comparison of the D6, D12 and D80 amplifiers

	D6	D12	D80
User interface	Encoder/LC display	Encoder/LC display	Encoder/colour TFT touchscreen
Output channels	2	2	4
Input channels	2 AES or analog	2 AES or analog	4 AES or analog
Latency	0.3 msec	0.3 msec	0.3 msec
User equalizers (per channel)	4-band	4-band	2 x 16-band
Delay	340 msec/116.9 m	340 msec/116.9 m	10 sec/3440 m
Rated output power	2 x 300 W into 8 ohms 2 x 600 W into 4 ohms (THD+N < 0.1%)	2 x 750 W into 8 ohms 2 x 1200 W into 4 ohms (THD+N < 0.1%)	4 x 2000 W into 8 ohms 4 x 4000 W into 4 ohms (THD+N < 0.5%, 12 dB crest factor)
Output routing	Dual Channel w/o B1 and B2	Dual Channel, Mix TOP/SUB 2-Way Active	Dual Channel, Mix TOP/SUB 2-Way Active
Output connectors	NL4	NL4/EP5/NL8	NL4/EP5 plus central NL8
Cable compensation	No	SenseDrive	LoadMatch
Mains voltage	One version	100/200V or 120/230V	One version
Weight (kg/lb)	8/17.6	13/28.7	19/42
Dimensions	2 RU x 19" x 353 mm	3 RU x 19" x 353 mm	2 RU x 19" x 530 mm
Remote	CAN	CAN	OCA via Ethernet/CAN
Airflow			

The operation with D6, D12 and D80 amplifiers

Arc, Line and PS (point source) mode
The Line or Arc modes are selected when the T10/Ti10L loudspeakers are used as a line array. The chosen configuration will depend on the curvature of the array. The Line configuration is selected when groups of four or more cabinets are coupled in a straight long throw array section, where the splay angles to adjacent cabinets are 0° to 2°. The Arc configuration is selected when cabinets are used in curved array sections, where the splay angles to adjacent cabinets are 3° or more. Within a typical array both amplifier configurations are used. The PS configuration is selected when the Ti10P is used in either horizontal or vertical orientation or the T10 is used as a single spherical loudspeaker.

CUT mode
Set to CUT, the cabinet low frequency level is reduced and is configured for use with d&b active subwoofers.

HFC mode
Selecting the HFC (High Frequency Compensation, Line or Arc mode only) mode compensates for loss of high frequency energy due to absorption in air when loudspeakers are used to cover far field listening positions. The HFC mode has two different settings, which should only be used for those cabinets covering the following respective distances: HFC1 for distances between 25 m (80 ft) and 50 m (160 ft), and HFC2 for distances further than 50 m (160 ft). This enables the correct sound balance between close and remote audience areas, whilst all amplifiers driving the array can be fed with the same signal.

HFA mode
Selecting HFA mode (High Frequency Attenuation, PS setup only), the HF response is rolled off. The HFA provides a natural, balanced frequency response when a unit is placed close to listeners in near field or delay use. HFA begins gradually at 1 kHz, dropping by approximately 3 dB at 10 kHz. This roll off mimics the decline in frequency response experienced when listening to a system from a distance in a typically reverberant room or auditorium.

CPL function
The CPL (Coupling) function compensates for coupling effects between closely coupled cabinets by reducing the low and mid frequency level. CPL begins gradually at 1 kHz, with the maximum attenuation below 400 Hz, providing a balanced frequency response when cabinets are used in arrays of four or more. The CPL function can be set in dB attenuation values between –9 and 0, or a positive CPL value which creates an adjustable low frequency boost around 65 Hz (0 to +5 dB).

100 Hz mode
The 100Hz mode limits the upper operating frequency of the subwoofer to 100Hz, complementing top cabinets in full range mode.

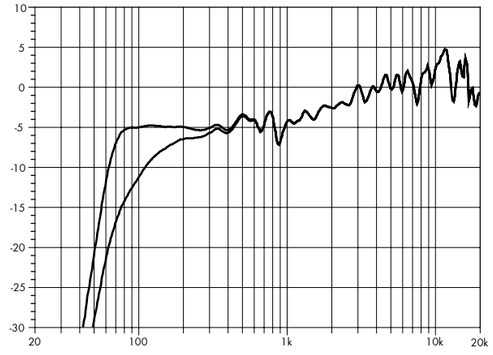
Maximum loudspeakers per D6, D12 or D80 channel

T10	Ti10L	Ti10P	T-SUB/ Ti-SUB	B4-SUB
4	4	4	2	2

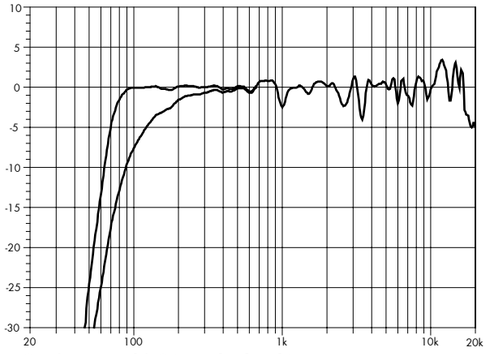
D6, D12 and D80 controller settings

	T10	Ti10L	Ti10P	T-SUB/ Ti-SUB	B4-SUB
Arc, Line	x	x			
PS	x		x		
CUT	x	x	x		
HFC	x	x			
HFA	x		x		
CPL	x	x	x		
100 Hz				x	x

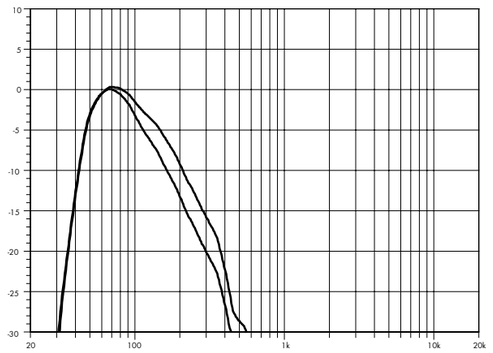
The T-Series frequency responses



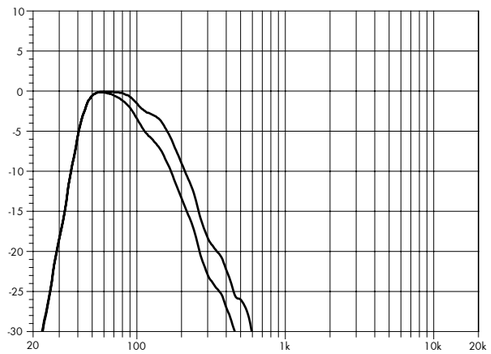
T10 line source/Ti10L standard and CUT (single cabinet)



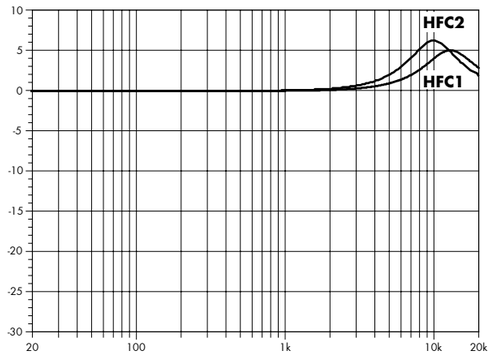
T10 point source/Ti10P standard and CUT



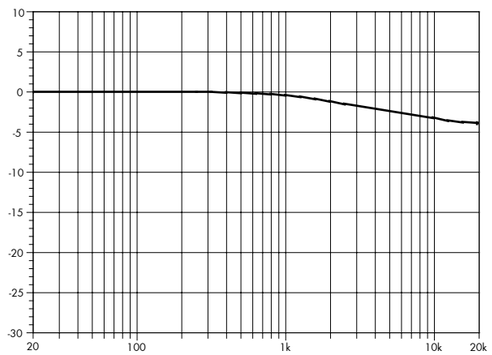
T/Ti-SUB standard and 100 Hz



B4-SUB standard and 100 Hz

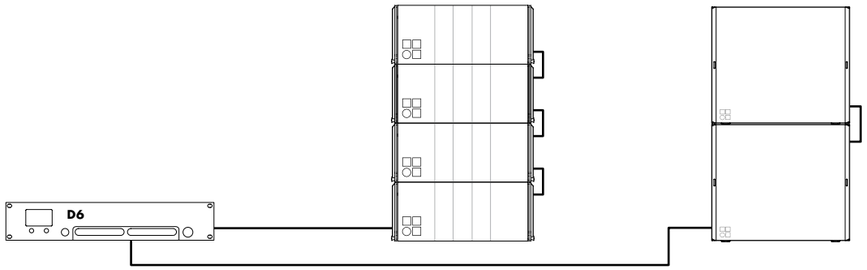


Correction of HFC

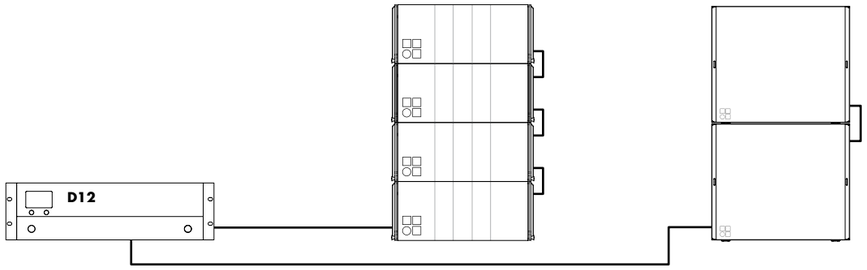


Correction of HFA

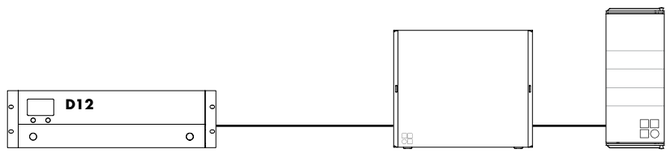
The d&b amplifier output modes



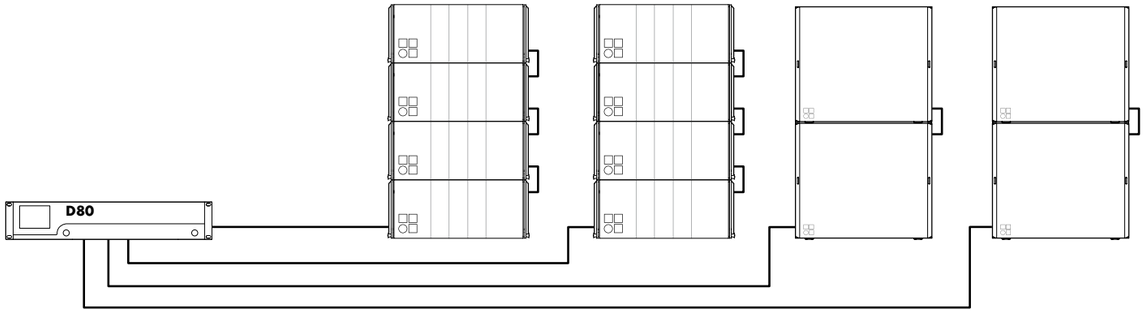
D6 amplifier in Dual Channel mode for T10, Ti10L or Ti10P and T-SUB, Ti-SUB or B4-SUB



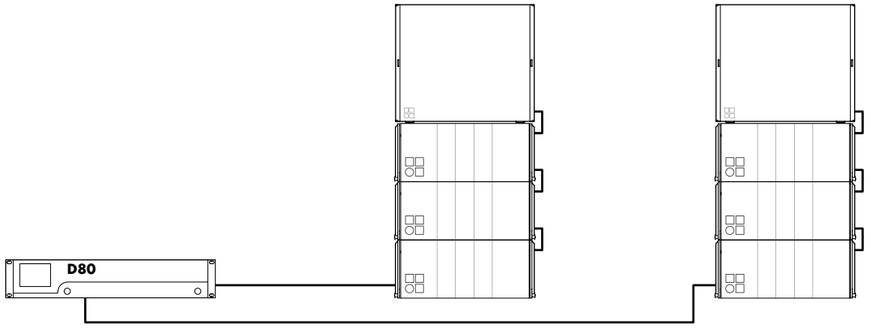
D12 amplifier in Dual Channel mode for T10, Ti10L or Ti10P and T-SUB, Ti-SUB or B4-SUB



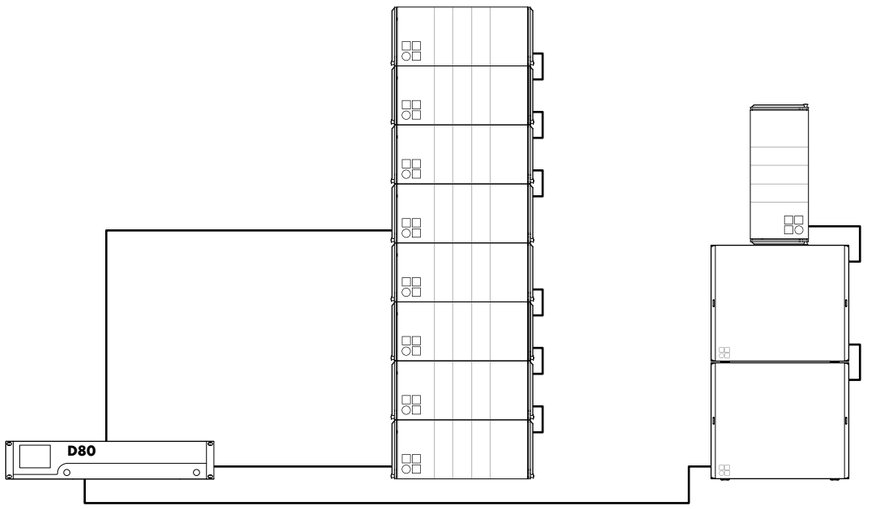
D12 amplifier in Mix TOP/SUB mode for T10, Ti10L or Ti10P and T-SUB, Ti-SUB or 4-SUB



D80 amplifier in Dual Channel mode for T10, Ti10L, Ti10P, T-SUB, Ti-SUB and B4-SUB



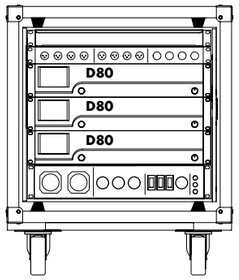
D80 amplifier in Mix TOP/SUB mode for T10, Ti10L, Ti10P, T-SUB, Ti-SUB and B4-SUB



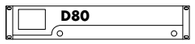
D80 amplifier in a mixed configuration of Dual Channel and Mix TOP/SUB modes for T10, Ti10L, Ti10P, T-SUB, Ti-SUB and B4-SUB

The T-Series cables and adapters

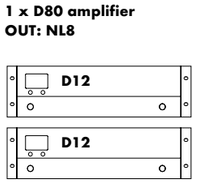
Amplifiers in Dual Channel mode



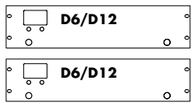
Z5330.xxx
D80 Touring rack assembly
OUT: 3 x NL8



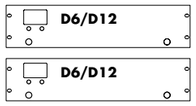
1 x D80 amplifier
OUT: NL8



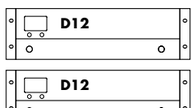
2 x D12 amplifier
OUT: EP5



2 x D6/D12 amplifier
OUT: NL4



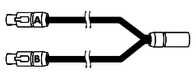
2 x D6/D12 amplifier
OUT: NL4



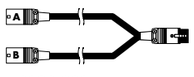
2 x D12 amplifier
OUT: EP5

Z5346.000
Adapter 4 x EP5M to NLT8M

Z5345.001
Adapter 4 x NL4 to NLT8M



Z2292.001
T Splitset NL4
Z2292.002
T Splitset NLT4 F/M



Z2292.000
T Splitset EP5

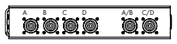
Z5343.xxx
MC8 Cable NLT8 F/M

Z5340.xxx
MC4 Cable NLT4 F/M

Z2299.xxx
MC2.5 Cable NL4

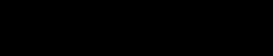
Z2297.xxx
MC4SD Cable EP5

Z5344.002
Adapter NLT8F to 4 x NLT4M

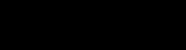


Z5347.001
Breakoutbox NLT8F/M
to 6 x NL4

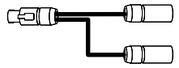
Z5344.001
Adapter NLT8F to 4 x NL4



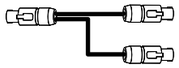
Z5344.000
Adapter NLT8F to 4 x EP5



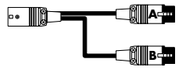
Z5347.000
Breakoutbox NLT8F/M
to 6 x EP5



Z2292.002
T Splitset NLT4 F/M



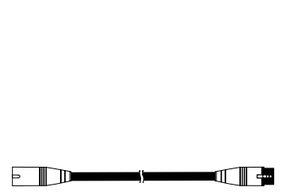
Z2292.001
T Splitset NL4



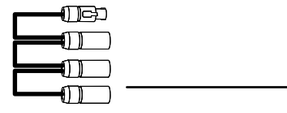
Z2292.000
T Splitset EP5

Z5340.xxx
MC4 Cable NLT4 F/M

Z2299.xxx
MC2.5 Cable NL4

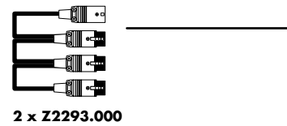


Z2297.xxx
MC4SD Cable EP5

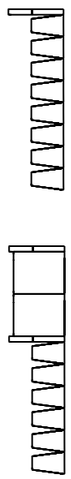


2 x Z2293.002
T Linkset NLT4 F/M

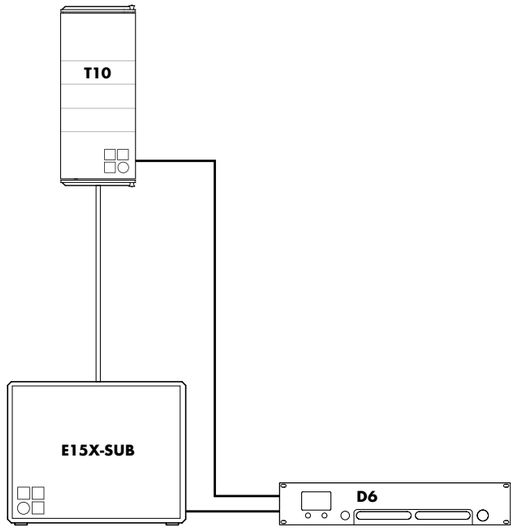
2 x Z2293.001
T Linkset NL4



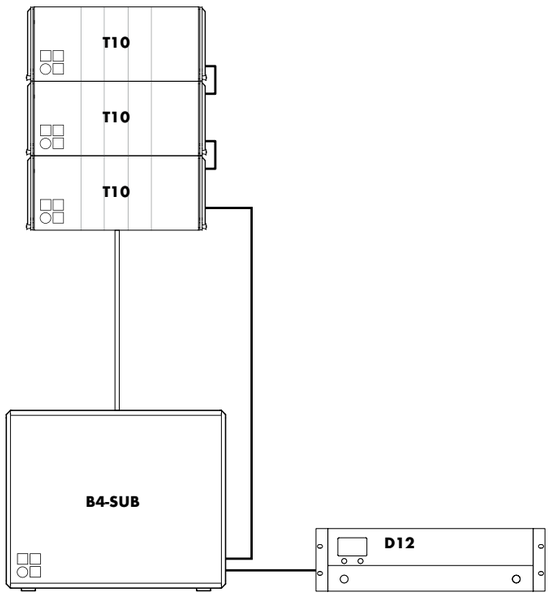
2 x Z2293.000
T Linkset EP5



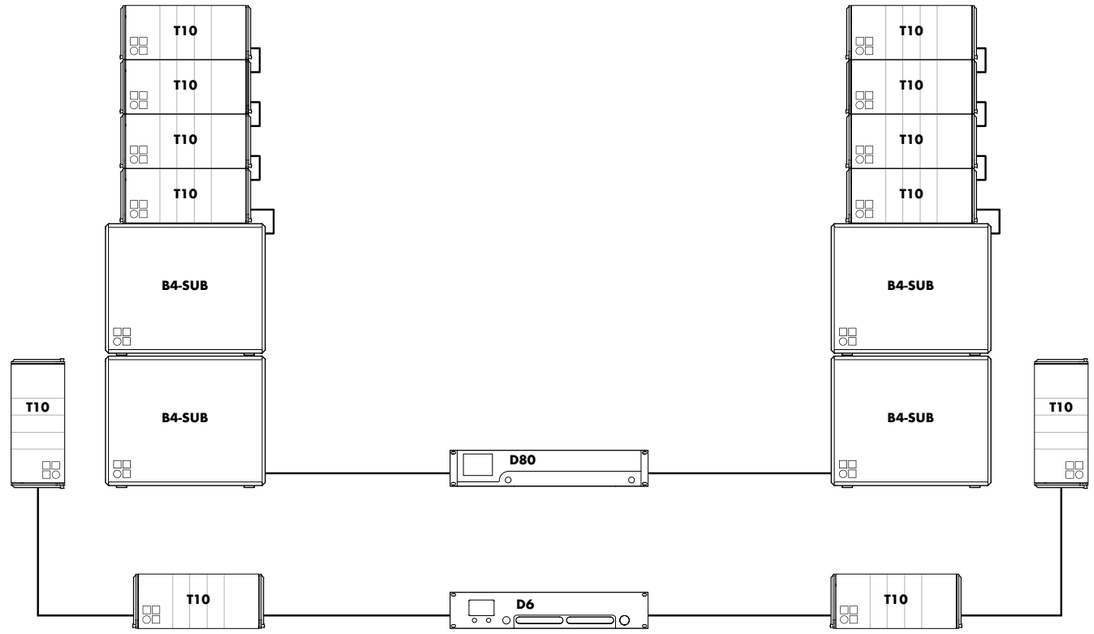
The T-Series configuration examples



T10 loudspeaker in point source orientation on a E15X-SUB with D6 amplifier[1]



T10 line array on B4-SUB with D12 amplifier[1]

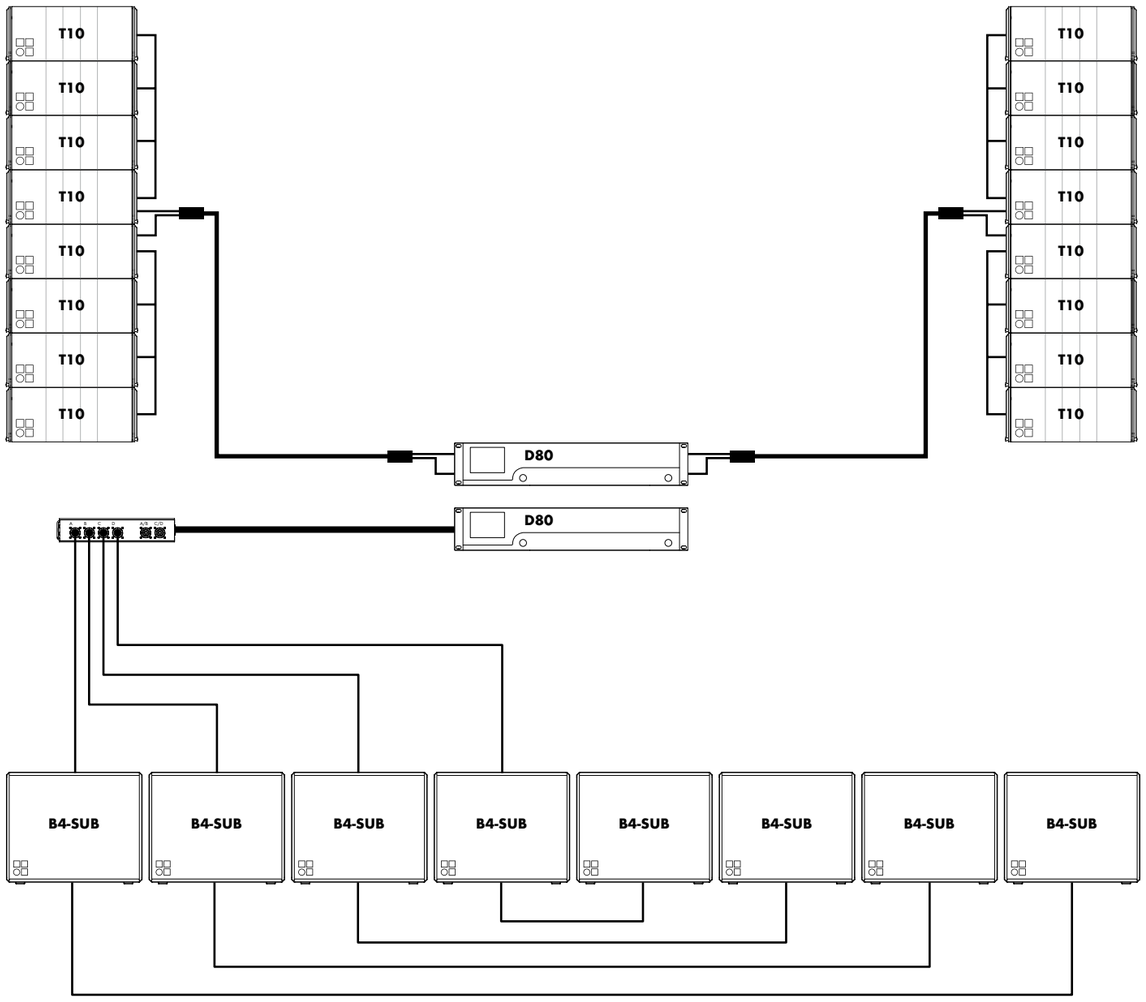


T10 line array on B4-SUB ground stacked in left/right configuration with D80 amplifier and T10 loudspeakers in point source orientation as fills with D6 amplifier[1]

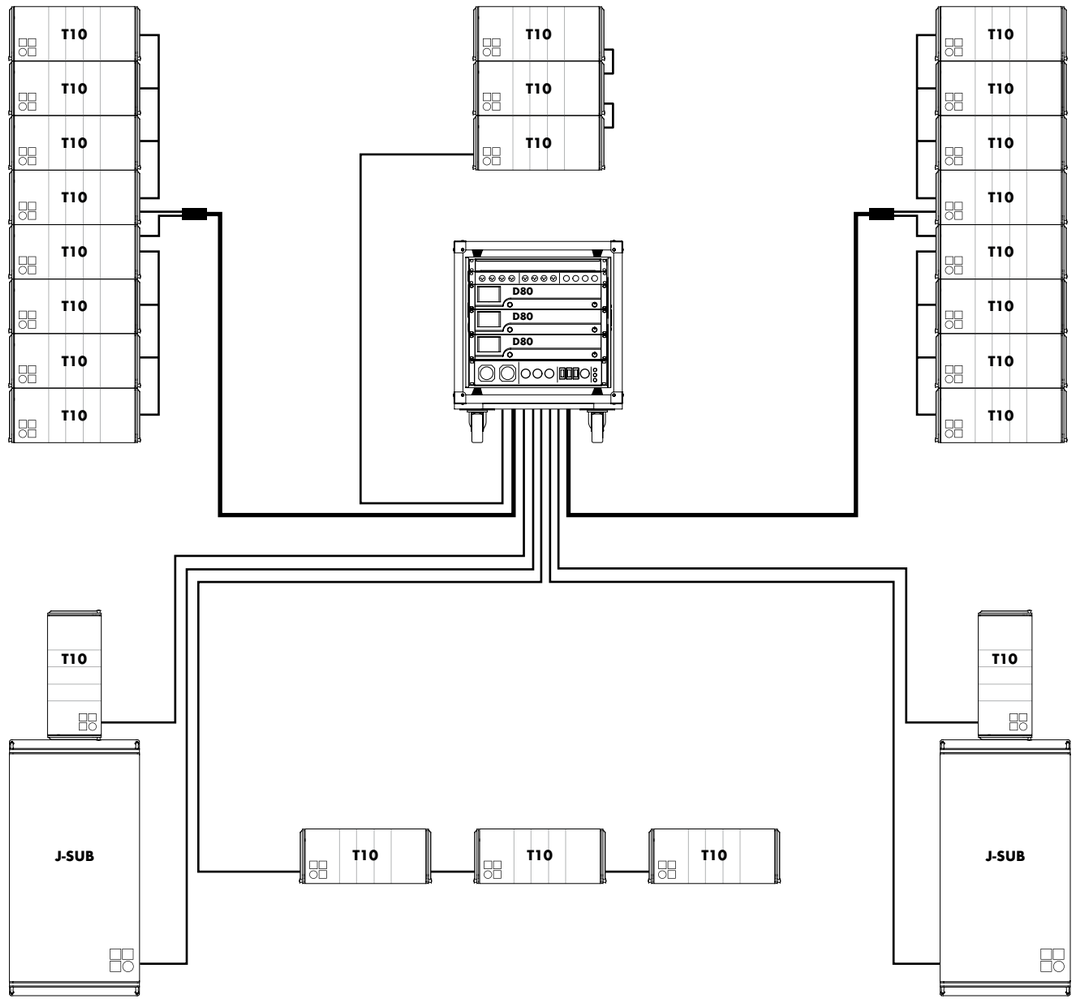
[1] These configuration examples are also valid for Ti loudspeakers

[1] These configuration examples are also valid for Ti loudspeakers

The T-Series configuration examples



T10 flown line arrays in left/right configuration and ground stacked B4-SUB array with D80 amplifiers[1]



T10 flown line arrays in left/right configuration, T10 line array as centre cluster and T10 in point source orientation as fills and J-SUBs with D80 Touring rack[1]

[1] These configuration examples are also valid for Ti loudspeakers

[1] These configuration examples are also valid for Ti loudspeakers

The T-Series product overview

T loudspeakers	Z0550.xxx	**T10 Loudspeaker**
	Z0560.xxx	**T Subwoofer**
	Z0610.xxx	**B4 Subwoofer**
Loudspeaker connector options	Zxxxx.000	**EP5** connector
	Zxxxx.001	**NL4** connector
	Zxxxx.002	**NLT4 F/M** connector
Ti loudspeakers	Z0551.001	**Ti10L Loudspeaker NL4** connector
	Z0552.001	**Ti10P Loudspeaker NL4** connector
	Z0561.001	**Ti Subwoofer NL4** connector
		WR Weather Resistant option[1]
		SC Special Colour option[2]
Loudspeaker cases	E7451.000	**Touring case 4 x T10** sleeve, wheels
	E7452.000	**Touring case 2 x T10** lid
	E7453.000	**Touring case 2 x T-SUB** sleeve, wheels
	E7455.000	**Touring case 2 x T Flying frame** lid, wheels
Lid	E7922.000	**B4-SUB Wooden lid**
Accessories	Z5370.000	**T Flying frame**[2]
	Z5374.000	**Ti Flying bar**[2]
	Z5371.000	**T Flying bracket**[2]
	Z5372.000	**T Horizontal bracket**[2]
	Z5373.000	**T Cluster bracket** 3 deep[2]
	Z5354.000	**E8/E12 Flying adapter**[2]
	Z5355.000	**E8/E12 Flying adapter link**
	Z5010.000	**TV spigot with fixing plate**
	Z5015.000	**TV spigot for Flying adapter 02**
	Z5029.000	**TV spigot M10**
	Z5009.000	**Loudspeaker stand with winder**
	Z5013.000	**Loudspeaker stand winder M20**
	Z5024.000	**Loudspeaker stand adapter**
	Z5034.000	**Stand adapter M10**
	Z5012.500	**Pipe clamp** for TV spigot
	Z5147.001	**Rota clamp**
	Z5155.000	**Q Hoist connector chain**
	E6507.000	**1t Shackle**
	Z5375.000	**T Base plate**[3]
Remote network	Z3010.000	**R1 Remote control software**[4]
	Z6118.000	**R60 USB to CAN interface**
	Z6124.000	**R70 Ethernet to CAN interface**
	Z6116.000	**RJ 45 M Terminator**
	Z6122.000	**Bopla mounting clamp**
	Z6123.000	**Bopla mounting clamp upright**

1 WR only for Ti loudspeakers, on request
2 SC only for Ti loudspeakers, on request
3 for T10 only
4 available as a download at www.dbaudio.com

Amplifiers	Z2700.xxx	**D6 Amplifier NL4**
	Z2600.xxx	**D12 Amplifier**[5]
	Z2710.xxx	**D80 Amplifier**[5]
Amplifier rack assemblies	Z5310.000	**D12 Touring rack assembly EP5**[6]
	Z5310.001	**D12 Touring rack assembly NL4**[6]
	Z5330.001	**D80 Touring rack assembly, CEE 32A 5P**[6]
	Z5330.xxx	**D80 Touring rack assembly, Nema L21-30 (120V devices)** on request[6]
Amplifier racks	E7468.000	**D80 Touring rack 2 RU, 19"** SD, shock mounted, handles, window
	E7419.000	**Touring rack 3 RU, 19"** DD, shock mounted, handles, window
	E7420.000	**Touring rack 6 RU, 19"** DD, shock mounted, handles, window, wheels
Cables	Z5343.xxx	**MC8 Cable NLT8 F/M**
	Z5346.000	**Adapter 4 x EP5M to NLT8M**
	Z5345.001	**Adapter 4 x NL4 to NLT8M**
	Z5344.002	**Adapter NLT8F to 4 x NLT4M**
	Z5344.001	**Adapter NLT8F to 4 x NL4**
	Z5344.000	**Adapter NLT8F to 4 x EP5**
	Z5347.001	**Breakoutbox NLT8 F/M to 6 x NL4**
	Z5347.000	**Breakoutbox NLT8 F/M to 6 x EP5**
	Z5340.xxx	**MC4 Cable NLT4 F/M**
	Z2299.xxx	**MC2.5 Cable NL4**
	Z2297.xxx	**MC4SD Cable EP5**
	Z2298.xxx	**MC2.5SD Cable EP5**
	Z2293.002	**T Linkset NLT4 F/M**
	Z2293.001	**T Linkset NL4**
	Z2293.000	**T Linkset EP5**
	Z2292.002	**T Splitset NLT4 F/M**
	Z2292.001	**T Splitset NL4**
	Z2292.000	**T Splitset EP5**
Misc.	Z5061.000	**Standard cabinet paint** 1 kg/2.2 lb

5 the complete list of amplifier versions is available in the d&b Amplifier and Software brochure
6 further information is available in the d&b Amplifier and Software brochure

www.dbaudio.com

d&b audiotechnik