D

Amplifiers
Software

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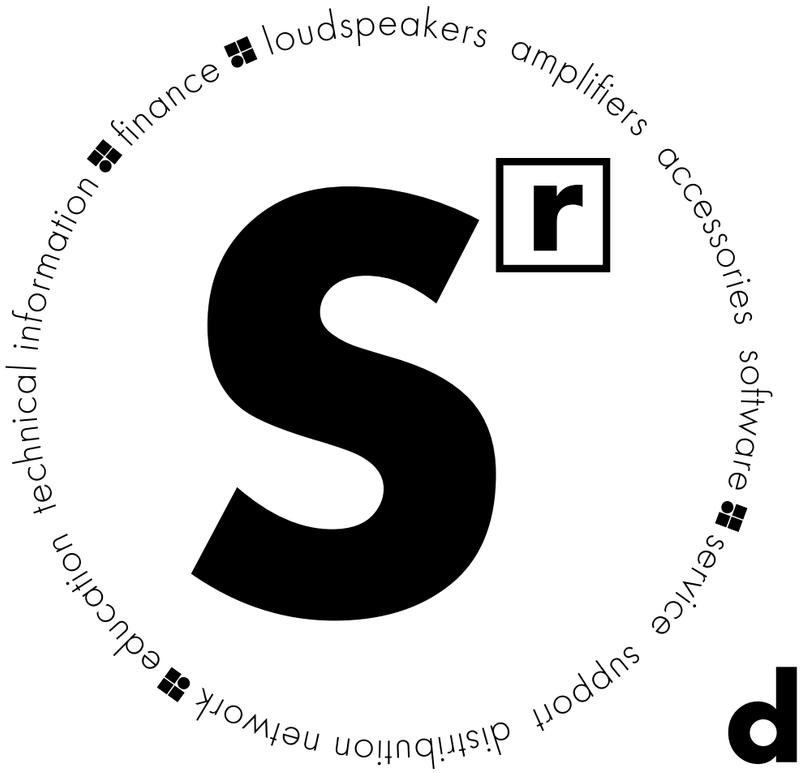
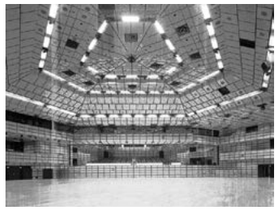


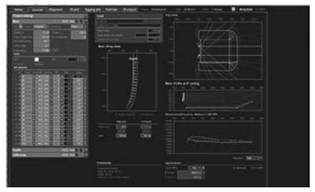
d&b System reality

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.

Application



d&b ArrayCalc simulation software



d&b R1 Remote control software

d&b amplifier

d&b loudspeakers

Venue data	System design	Simulation tool for electroacoustic design, performance prediction, alignment, rigging and safety parameters	Export of R1 project file containing amplifier settings, groups and control elements	User interface managing and controlling all features and functions of each amplifier channel or groups of amplifier channels	Fine tuning and monitoring	Configurations for all d&b loudspeakers	Amplification and protection	d&b sound

d&b workflow

The integrated d&b workflow improves efficiency all the way from the start of a project through planning and simulation to control of the final result. Venue data is used to create a model in the d&b ArrayCalc simulation software. The choice of the loudspeakers, placement, levels and configuration is also entered into this room model. The effect of the scheme can be simulated, carefully checked and optimised, until the desired performance is achieved. ArrayCalc then generates rigging plans, parts lists for the final proposal and exports the system configuration to an R1 project file. The R1 Remote control software uses this file to generate a graphical user interface for the complete system and applies all the defined settings to the amplifiers. The R1 Remote control software is used to make adjustments and monitor the system in as much detail as needed to ensure the sound is in line with the original intention.

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.

Up to fourteen flown arrays or subwoofer columns can be defined in a project file as single hangs or in pairs. A selection of d&b point source loudspeakers can also be fully integrated as well as a ground stacked SUB array consisting of up to fifty one positions. All can be freely positioned according to their intended application, for example as main hang, outfill, nearfill or delay etc. Position, orientation, coverage and aiming are displayed.

Level over distance is calculated for each source with high resolution in real time, for either band limited or broadband input signals. The comprehensive simulation precisely models the actual performance of the system, taking into account input level, all system configuration options (such as CUT, CPL, HFC or INFRA), limiter headroom and air absorption. Acoustic shadowing, whether by obstacles (if defined) or a balcony overhang is also calculated. The load status of all array rigging components is calculated accurately and displayed to determine whether a given array is within the load tolerance. Subwoofer array design is assisted by coverage and polar plot prediction. A specialized algorithm allows the user to specify subwoofer positions and a coverage angle, which is then converted into appropriate delay settings that result in the desired dispersion.

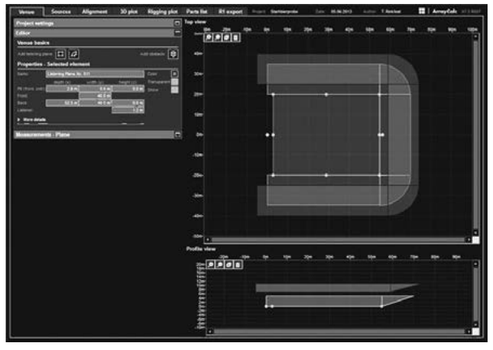
The program allows the simulation of different sources to be time aligned to one another as well as showing arrival times and Sound Pressure Levels at a freely definable reference point on one of the audience areas.

For alignment of the flown system with the ground stacked SUB array, the phase response of both the SUB array and a selectable flown source is calculated at a definable reference point. Both simulations reflect changes in delay time to the single sources in real time, greatly obviating the need for time consuming acoustic measurements to that end.

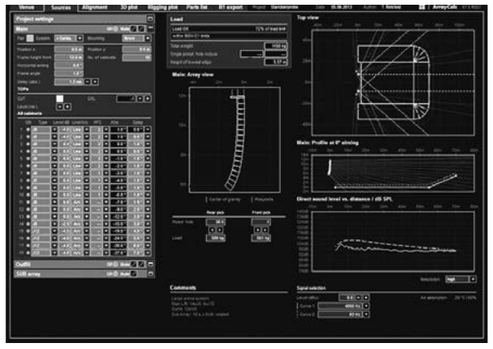
The level distribution resulting from the interaction of all active sources can be mapped onto the previously defined audience areas in a three-dimensional view, which can also be zoomed, rotated and exported as a graphics file. EASE and DXF data export capabilities are also available. Up to four different configurations and their mappings can be temporarily stored for comparison.

A comprehensive rigging plot with all necessary coordinates, dimensions and weights of arrays is generated for export and printing and a parts list, detailing all the loudspeakers and rigging components required.

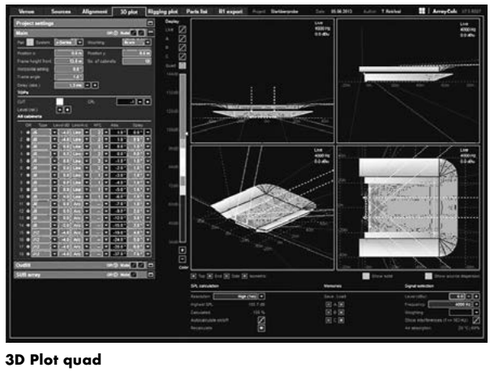
The ArrayCalc R1 export function produces a project file for the R1 Remote control software. Complete details of the system simulated in ArrayCalc are generated, including loudspeakers, amplifiers, remote IDs, groups and all configuration information. This workflow sequence removes the need to manually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



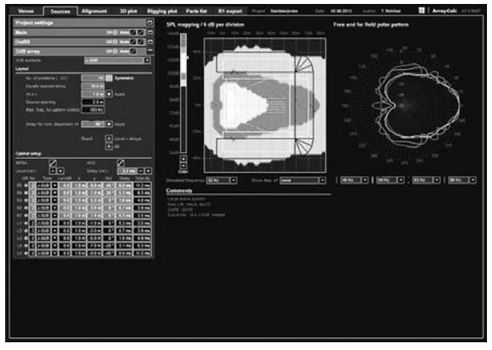
Venue editor



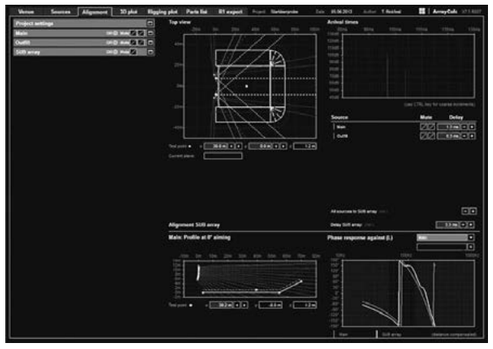
Sources, array



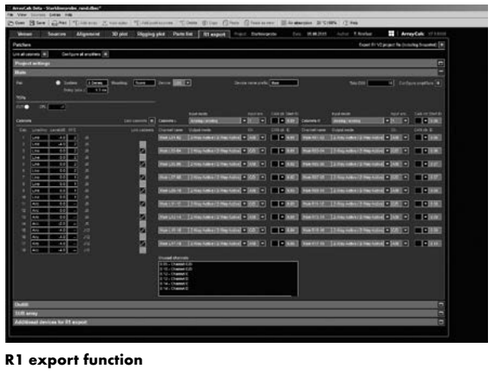
3D Plot quad



Sources, SUB array



Alignment



R1 export function

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 d&b Remote network

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 the 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 import of settings from ArrayCalc allows the system configuration to be quickly accomplished giving more time for verification and fine tuning.

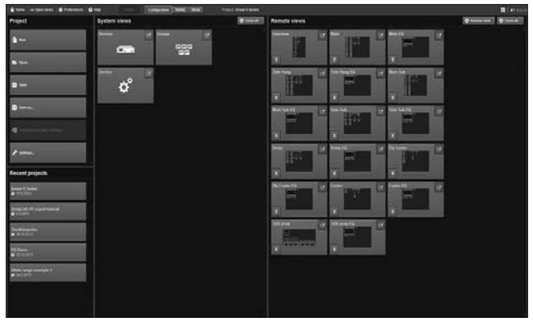
For mobile applications, d&b System check verifies that the system performs within a predefined condition. Extensive facilities for storing and recalling system settings are provided allowing these to be repeated, as and when required. It is easy to adjust project files for use with a different set of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

In installation projects system integrators can configure the remote network to offer access to different levels of control tailored to the operational demands. For example, simplified functionality like power ON/OFF for daily use and more complex functionality for detailed control in multiple system views. Password protection is available to restrict access.

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 as well as mouse and keyboard and runs on Microsoft Windows[1] (Win7 or higher) and Mac OS X[2] (10.6 or higher) operating systems.

R1 Remote control software

The R1 Remote control software provides a flexible workplace for the d&b user. All features, functions and controls are accessible via the front panel of d&b amplifiers, which can be remotely controlled and/or monitored using R1. It allows control of each channel of the amplifier 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 creation and simulation of the application in advance of an event without the need for amplifiers being present or connected. A home button is available in every view of the software, which leads the user back to the home view from where there is direct access to all views. Each user definable Remote view can be populated with control functions of the system and can be optimized for different screen resolutions, either for large monitors or for smaller tablet devices.



Home

Remote in Configuration mode

Open views

Equalizer

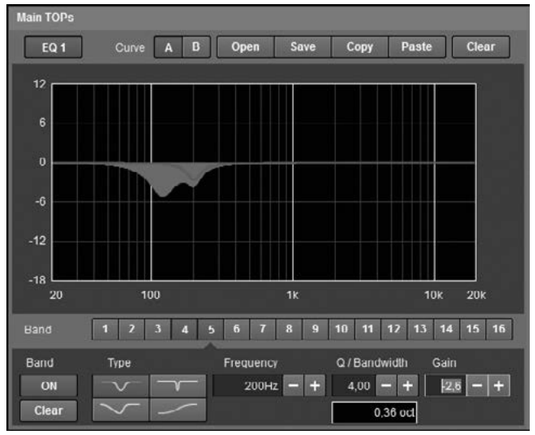
R1 Remote control software offers access to the 4-band equalizer in each channel of the D6 and D12 amplifiers as well as the two 16-band equalizers in each D80 amplifier channel. The system technician can use one D80 16-band equalizer, lock it, and offer the second EQ to the visiting sound engineer for artistic adjustments. The equalizer in the D6 and D12 offers parametric and notch filter types, while the D80 adds shelving and asymmetric filters. In monitoring applications, the enhanced EQ function within R1 offers access to the equalizer in the D80 amplifier, which initially can be used with standardized centre frequencies, and then changed to a parametric filter for fine adjustment. The R1 software allows an instant A/B comparison of two different D80 equalizer curves.

Service functions

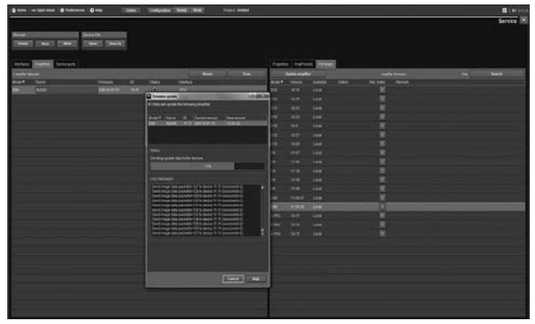
R1 enables the simultaneous firmware update of multiple amplifiers from a central location. The software will automatically search the d&b website and on demand, downloads the latest available amplifier firmware versions and R1 Remote control software updates.

Defined settings can be created, saved on a computer and loaded into amplifiers, for example to ensure that configuration switches are set to a known status, or the user definable equalization is set flat. Settings can be copied to additional or spare amplifiers. A Wink function is included to provide an effective method of locating specific amplifiers; this flashes the amplifier display. For service purposes, information may be read from an amplifier, concerning its condition during operation and errors reported. When additional support is required, the error report can be saved and sent to the d&b service departments for further assessment and diagnosis.

The R1 Remote control software V2 and video tutorials are available at www.dbaudio.com.



D80 16-band equalizer



Service, Firmware update

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

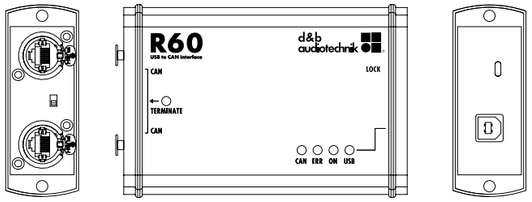
[2] Mac OS is a trademark of Apple Inc., registered in the U.S. and other countries

d&b Remote network topology

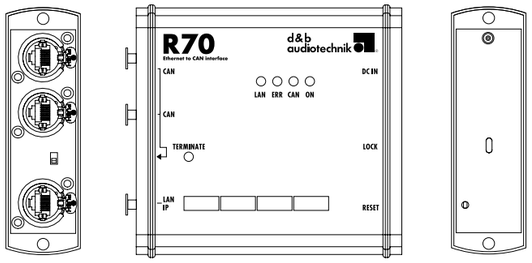
d&b Remote network – CAN-Bus
The d&b amplifiers can be integrated within the CAN-Bus network and are fitted with two REMOTE connectors (RJ 45) to link the signal and enable daisy chaining. The network may contain any combination of D6, D12, D80 and E-PAC amplifiers up to a total of 504 devices. It is connected to a PC or MAC running R1 Remote control software V2, using R60 USB to CAN, or R70 Ethernet to CAN interfaces. While the CAN-Bus network covers distances up to 600 m the Ethernet connection to the R70 can be made using standard Ethernet technologies, including wireless or fibre optic networks. For further information please refer to the TI 312 d&b Remote network, which is available for download at www.dbaudio.com.

d&b Remote network – OCA via Ethernet
The D80 amplifier can also be remotely controlled via a standard Ethernet network, providing higher bandwidth and quicker response compared to the CAN-Bus network. The D80 is fitted with two etherCON[1] connectors allowing simple networks to be set up without requiring an extra switch. The Open Control Architecture (OCA) protocol is used, created by the OCA Alliance of which d&b is a founding member. As OCA is an open standard protocol, integration into media control networks is simple.
Devices are controlled with a PC or MAC running R1 Remote control software V2, which can control D6, D12, D80 and E-PAC through OCA and CAN-Bus networks simultaneously.
For further information please refer to the d&b TI 310 Ethernet networking, which is available for download at www.dbaudio.com.

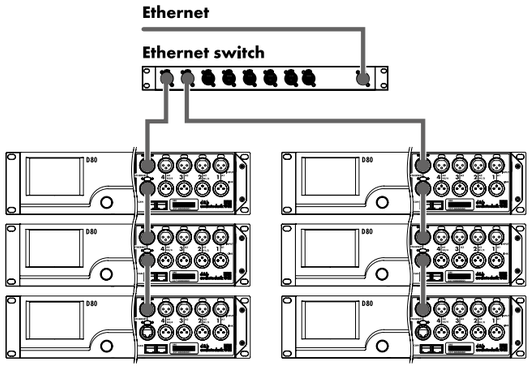
d&b Remote network – web interface
The D80 has an integrated web interface to control the amplifier via a standard web browser. In small applications, this allows direct control of the device without the need to create an R1 Remote control software file. The amplifier and the computer must be connected to an Ethernet network. Using a wireless access point, the D80 amplifier can be controlled using mobile devices.



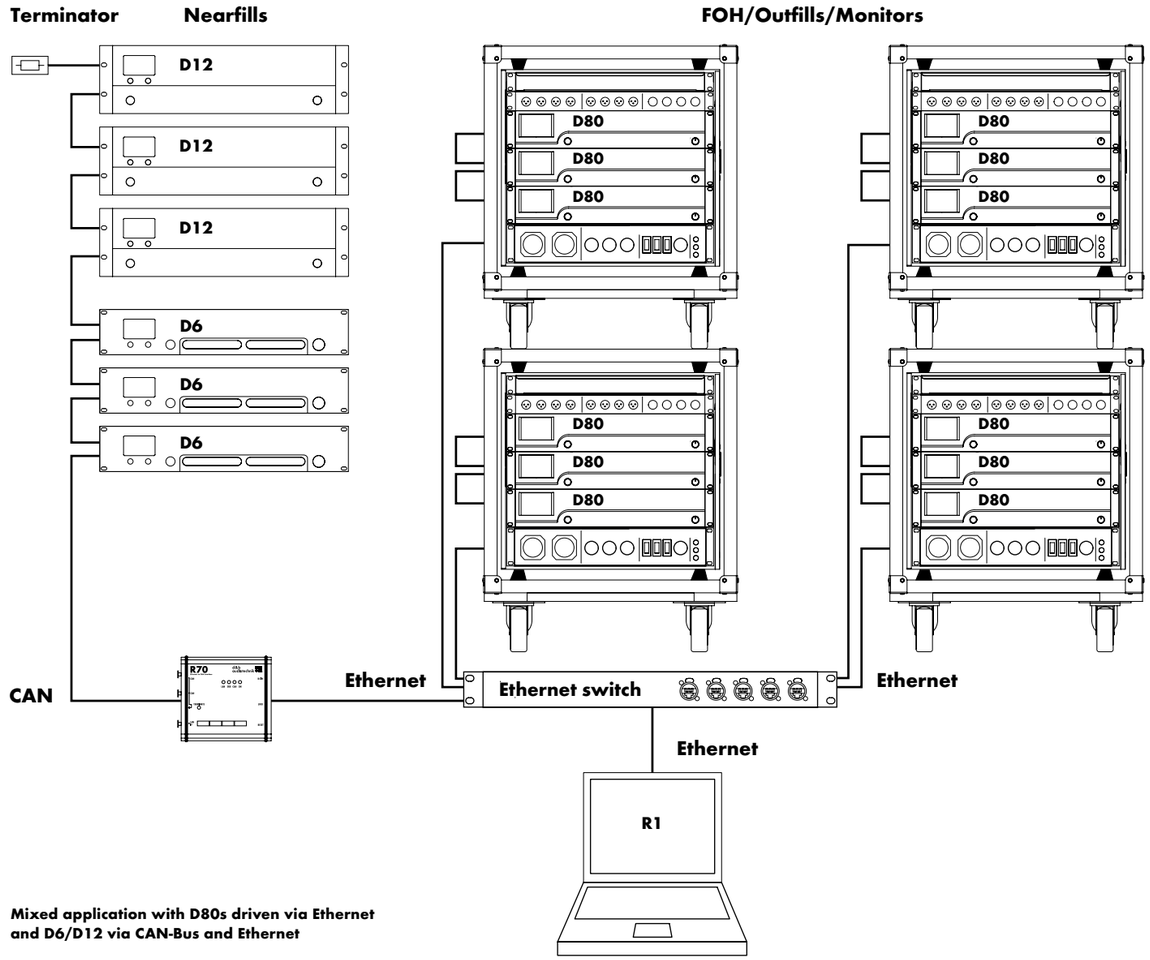
Z6118 R60 USB to CAN interface



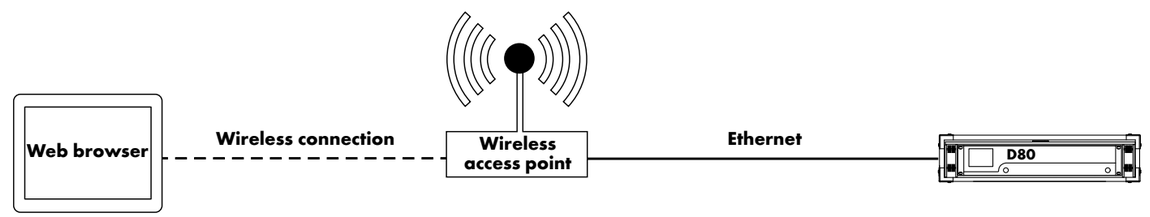
Z6124 R70 Ethernet to CAN interface



Combined Ethernet topology



Mixed application with D80s driven via Ethernet and D6/D12 via CAN-Bus and Ethernet



Application controlled via web browser for small setups

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] have the functionality to enable 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.

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

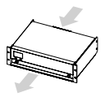
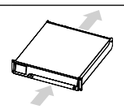
2 powerCON® is a registered trademark of the Neutrik AG, Liechtenstein

D6 amplifier

D12 amplifier

D80 amplifier

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 350 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	Wide range switch mode power supply	100/200V or 120/230V	Wide range switch mode power supply
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 D6 amplifier

The 2 RU two channel lightweight D6 amplifier delivers medium power into low impedance loads between 4 and 16 ohms and is ideally suited for use in both mobile and installation environments.
The D6 contains setups for d&b loudspeakers and a linear mode; exceptions are 2-Way Active mode, V-Series and B2- SUB. The signal delay capability enables user definable settings of up to 340 msec (=100 m/328.1 ft) to be applied independently to each channel. The same applies to the 4-band parametric equalizer, providing optional boost/cut or notch filtering.
The D6 incorporates a digital rotary encoder and a LC display to configure the amplifier.
The D6 incorporates Class D amplifiers utilizing a switch mode power supply with active Power Factor Correction (PFC), suitable for mains voltages 100 V/120 V/200 V/ 240 V, 50 - 60 Hz and maintains a stable output when used with weak or unstable mains supplies. It is supplied with two NL4 loudspeaker output connectors.

Control and indicators

POWER ..... Mains power switch
SCROLL/EDIT ..... Digital rotary encoder
Display ..... Liquid Crystal Display (LCD)/120 x 32 pixel
ISP, GR, OVL A/B ..... LED indicators

Digital Signal Processing

Equalizer ..... 4-band PEQ/Notch
Latency analog and digital inputs ..... 0.3 msec
Delay setting ..... 0.3 - 340 msec with 0.1 msec detents
Configurations ..... current d&b loudspeakers and linear mode
..... except 2-Way Active, V-Series and B2-SUB
Function switches ..... d&b loudspeaker specific circuits
Frequency generator ..... Pink noise or Sine wave
Sampling rate ..... 96 kHz/27 Bit ADC/24 Bit DAC

Connectors

INPUT ANALOG (A1, A2) ..... 3 pin XLR female
ANALOG LINK (A1, A2) ..... 3 pin XLR male
INPUT DIGITAL (D1, D2) ..... 3 pin XLR female AES 3
DIGITAL LINK (Output) ..... 3 pin XLR male
Sampling rate ..... 48 kHz/96 kHz
OUT CHANNEL A/B NL4
REMOTE ..... 2 x RJ 45 parallel, CAN-Bus
SERVICE ..... USB type B
Mains connector ..... powerCON[1]

Data (linear setting with subsonic filter)

Rated output power (THD+N < 0.1%), both channels driven .....
..... 2 x 350 W into 8 ohms
..... 2 x 600 W into 4 ohms, both channels driven
S/N ratio (unweighted, RMS) ..... > 110 dBr

Power supply

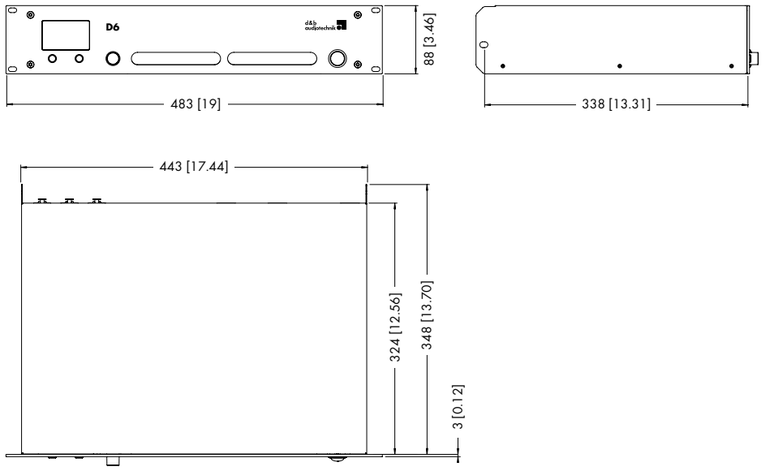
Autosensing switch mode power supply with active Power Factor
Correction (PFC) .....
Rated mains voltage .....
High range ..... 208 - 240 V, 50 - 60 Hz
Low range ..... 100 - 127 V, 50 - 60 Hz

Dimensions, weight

Height x width x depth ..... 2 RU x 19" x 353 mm/13.9"
Weight ..... 8 kg/17.6 lb

The D6 amplifier front view

The D6 amplifier rear view



D6 amplifier dimensions in mm [inch]

[1] powerCON® is a registered trademark of the Neutrik AG, Liechtenstein

The D12 amplifier

The 3 RU two channel D12 amplifier delivers medium to high power into low impedance loads between 4 and 16 ohms and is ideally suited for use in both mobile and installation environments.
It contains setups for all d&b loudspeakers and a linear mode. The signal delay capability enables user definable settings of up to 340 msec (=100 m/328.1 ft) to be applied independently to each channel. The same applies to the 4-band parametric equalizer, providing optional boost/cut or notch filtering.
The D12 incorporates a digital rotary encoder and a LC display to configure the amplifier.
The D12 utilizes an autosensing switch mode power supply for mains voltages 120 V/230 V, 50 - 60 Hz (optional 100/200 V).
The D12 amplifier incorporates d&b SenseDrive for accurate control of LF drivers in d&b loudspeakers driven in 2-Way Active mode 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. NL4 and NL8 connector options are also available.

Control and indicators

POWER ..... Mains power switch
SCROLL/EDIT ..... Digital rotary encoder
Display ..... Liquid Crystal Display (LCD)/120 x 32 pixel
ISP, GR, OVL A/B ..... LED indicators

Digital Signal Processing

Equalizer ..... 4-band PEQ/Notch
Latency analog and digital inputs ..... 0.3 msec
Delay setting ..... 0.3 - 340 msec with 0.1 msec detents
Configurations ..... current d&b loudspeakers and linear mode
Function switches ..... d&b loudspeaker specific circuits
Frequency generator ..... Pink noise or Sine wave
Sampling rate ..... 96 kHz/27 Bit ADC/24 Bit DAC

Connectors

INPUT ANALOG (A1, A2) ..... 3 pin XLR female
ANALOG LINK (A1, A2) ..... 3 pin XLR male
INPUT DIGITAL (D1, D2) ..... 3 pin XLR female AES 3
DIGITAL LINK (Output) ..... 3 pin XLR male
Sampling rate ..... 48 kHz/96 kHz
OUT CHANNEL A/B NL4
..... optional EP5/NL8
REMOTE ..... 2 x RJ 45 parallel, CAN-Bus
SERVICE ..... SUB-D9 female
Mains connector ..... powerCON[1]

Data (linear setting with subsonic filter)

Rated output power (THD+N < 0.1%), both channels driven .....
..... 2 x 750 W into 8 ohms
..... 2 x 1200 W into 4 ohms
S/N ratio (unweighted, RMS) ..... > 110 dBr

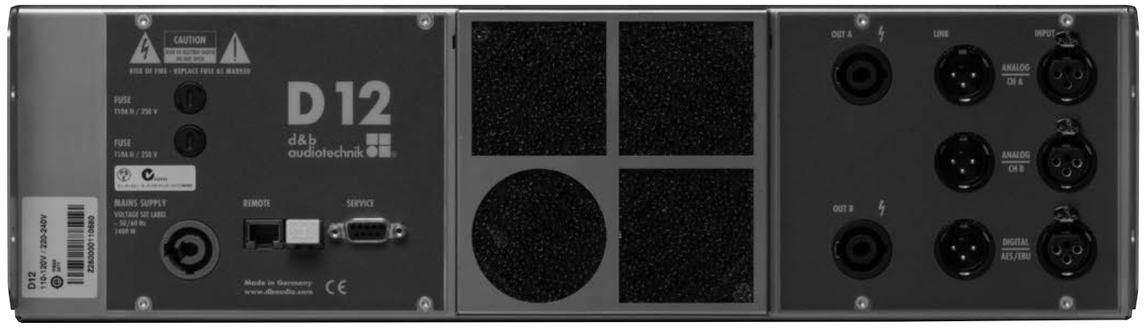
Power supply

Autosensing switch mode power supply for .....
..... 120/230 V, 50 - 60 Hz
..... optional 100/200 V, 50 - 60 Hz

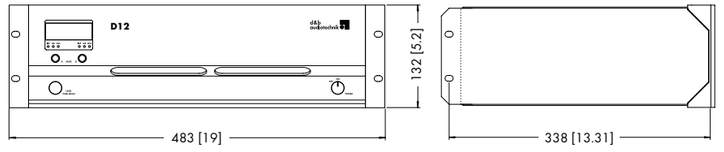
Dimensions, weight

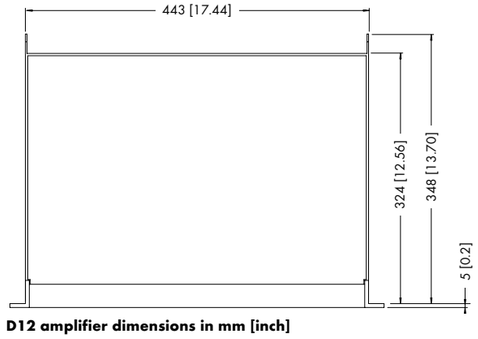
Height x width x depth ..... 3 RU x 19" x 353 mm/13.9"
Weight ..... 13 kg/29 lb

The D12 amplifier front view



The D12 amplifier rear view





D12 amplifier dimensions in mm [inch]

[1] powerCON® is a registered trademark of the Neutrik AG, Liechtenstein

The D80 amplifier

The 2 RU four channel D80 amplifier is a high power density amplifier, ideally suited for use in both mobile and installation environments.
It contains setups for all d&b loudspeakers and a linear mode. The signal delay capability enables user definable settings of up to 10 s (= 3440 m/11286 ft) to be applied independently to each channel. The same applies to the two 16-band equalizers, providing optional parametric, asymmetric, shelving or notch filtering. The R1 Remote control section of this brochure gives a full explanation of the equalization section of the D80 amplifier.
The D80 incorporates a colour TFT touchscreen, offering quick access to the menu structure, while the rotary encoder can be used for fine adjustment. The front panel and the integrated touchscreen of the D80 amplifier is tilted up for ease of operation when the amplifier is below eye level.
The equal ratio of signal input to amplifier output channels increases the application flexibility particularly for monitor, frontfill or effect channel use.
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.
The D80 incorporates Class D amplifiers utilizing a switch mode power supply with active Power Factor Correction (PFC) suitable for mains voltages 100 V/120 V/200 V/240 V, 50 - 60 Hz and maintains a stable output when used with weak or unstable mains supplies. An NL8 provides all outputs on a single connector, while individual outputs are optionally NL4 for EP5 connectors.

Control and indicators
POWER ..... Mains power switch
SCROLL/EDIT ..... Digital rotary encoder
Display ..... Colour TFT touchscreen, 3.5"/320 x 240 pixel

Digital Signal Processing
Equalizer ..... 2 x 16-band PEQ/notch/shelving/asymmetric
Latency analog and digital inputs ..... 0.3 msec
Delay setting ..... 0.3 - 10000 msec
Configurations ..... current d&b loudspeakers and linear mode
Function switches ..... d&b loudspeaker specific circuits
Frequency generator ..... Pink noise or Sine wave
Sampling rate ..... 96 kHz/27 Bit ADC/24 Bit DAC

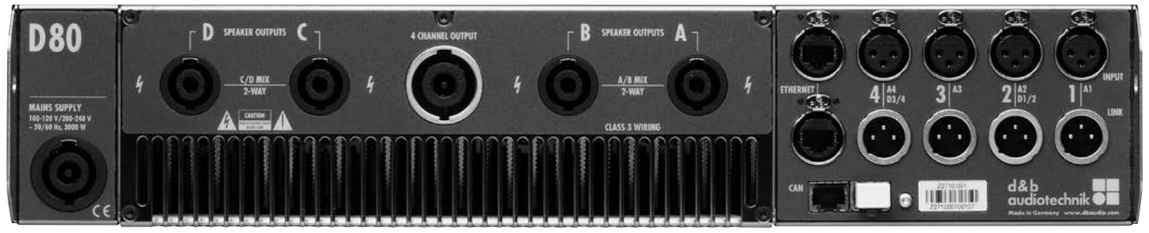
Connectors
INPUT ANALOG (A1 - A4) ..... 3 pin XLR female
ANALOG LINK (A1 - A4) ..... 3 pin XLR male
INPUT DIGITAL (D1/2, D3/4) ..... 3 pin XLR female AES 3
DIGITAL LINK (Output) ..... 3 pin XLR male
Sampling Digital AES/EBU ..... 48 kHz/96 kHz
SPEAKER OUTPUTS A/B/C/D ..... NL4, optional EP5
4 CHANNEL OUTPUT NL8
CAN ..... 2 x RJ 45 parallel
ETHERNET ..... 2 x etherCON[1], 10/100 Mbit Ethernet
Mains connector ..... powerCON-HC[1]

Data (linear setting with subsonic filter)
Maximum output power per channel (THD + N < 0.5 %, all channels driven) .....
CF = 6 dB at 4/8 ohms ..... 4 x 2600/2000 W
CF = 12 dB at 4/8 ohms ..... 4 x 4000/2000 W
S/N ratio (unweighted, RMS) .....
Analog input ..... > 110 dBr
Digital input ..... > 114 dBr

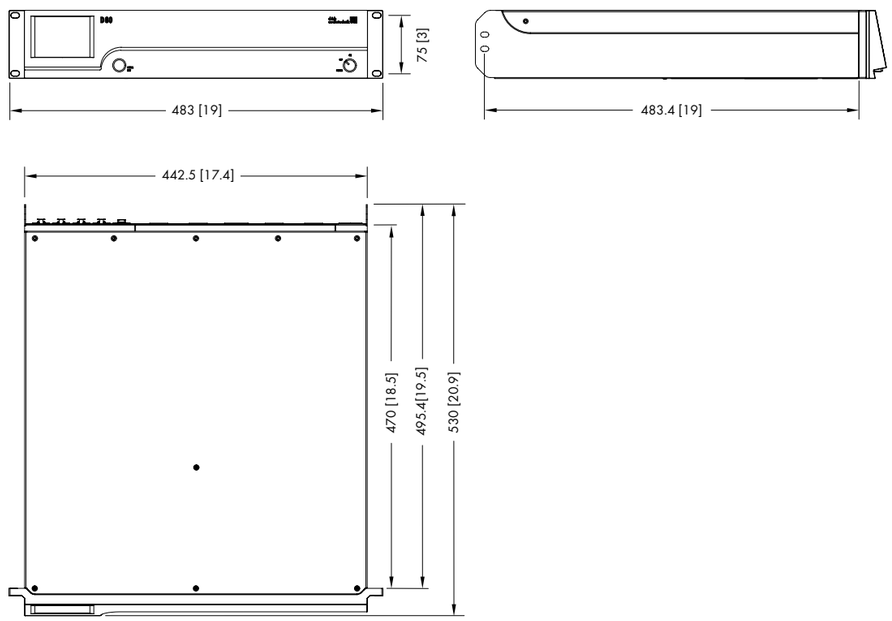
Power supply
Autosensing switch mode power supply with active Power Factor Correction (PFC) .....
Rated mains voltage .....
High range ..... 208 - 240 V, 50 - 60 Hz
Low range ..... 100 - 127 V, 50 - 60 Hz

Dimensions, weight
Height x width x depth ..... 2 RU x 19" x 530.5 mm/20.9"
Weight ..... 19 kg/42 lb

The D80 amplifier front view



The D80 amplifier rear view



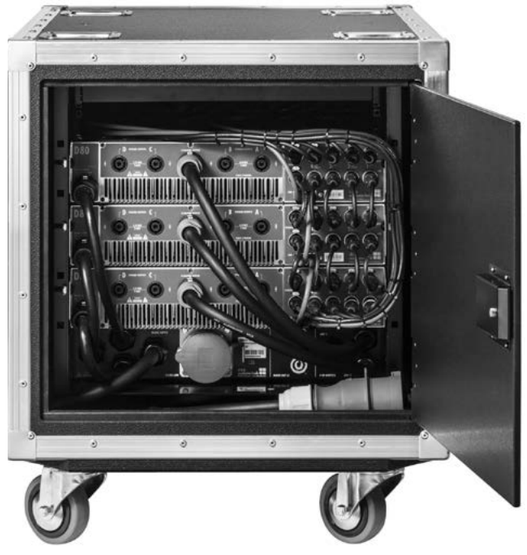
D80 amplifier dimensions in m [inch]

[1] etherCON® and powerCON® are registered trademark of the Neutrik AG, Liechtenstein

The D80 Touring rack assembly

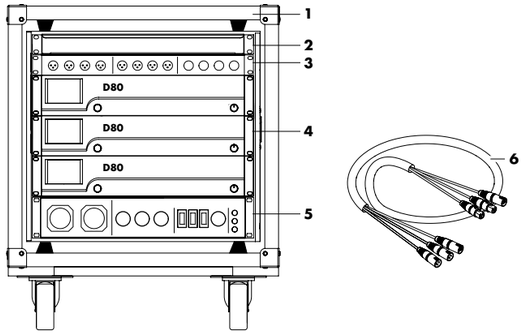
The D80 Touring rack assembly is designed as a fully equipped and prewired system rack, providing mains power distribution, connector interfaces and all internal cabling for three D80 amplifiers. It is equipped with a 32 A CEE mains power connector, a mains distribution device with a 32 A mains link, and a loudspeaker connector panel.
All internal audio and remote connections are fully prewired. A 1 RU drawer at the top stores the Rack link, providing two colour coded 2 x AES/XLR and one CAT5/etherCON[2] loom.
The 10 RU Touring rack houses a 19" internal shockmount steel frame accommodating three D80 amplifiers and the requisite connection panels as detailed on the next page. It comes with two sliding doors, a perspex window at the front, four wheels, six handles and recessed stacking moulds at the top.
The Touring rack assembly does not include the three D80 amplifiers.

D80 Touring rack assembly front view



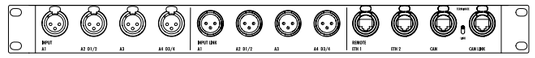
D80 Touring rack assembly rear view

1 - D80 Touring rack assembly 10 RU (CEE) with shock mounted 19" frame, 128 kg/282 lb (incl. amplifiers)
2 - Rack drawer
3 - I/O panel
4 - D80 amplifiers
5 - Mains power distributor
6 - Rack link



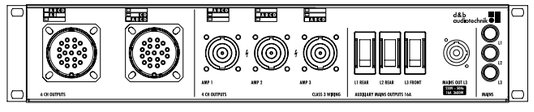
Z5330.001
D80 Touring rack assembly, CEE 32A 5P[1]

The I/O panel provides the input connectors of the first amplifier while the other two amplifiers are linked within the rack. The INPUT section allows both analog and digital audio signals to be fed while the INPUT LINK section provides the link output connectors of the last amplifier.
The REMOTE section allows the daisy chaining of system racks within a remote network using the enclosed rack link cable.
ETH 1 provides the upper etherCON[2] connector of the first amplifier, ETH 2 provides the bottom etherCON[2] connector of the last amplifier.
CAN input provides the CAN input of the first amplifier while the other two amplifiers are linked within the rack. The last CAN-Bus device of a CAN-Bus segment can be terminated by the TERMINATE switch.



Z5332
I/O Panel 19", 1 RU

The Mains power distributor is designed and dimensioned to provide and distribute the mains power supply necessary for the three D80 amplifiers.
It also serves as a loudspeaker connection panel for different connection options, two LKS19 or three NL8 allow connection to a total of twelve amplifier channels via these loudspeaker multicore connectors.
Three electrically interlocked auxiliary mains outputs (powerCON[2] 16 A sockets) are provided. They are intended for the connection of low current devices such as notebooks or additional Ethernet switches. Three phase mains indicators are provided.

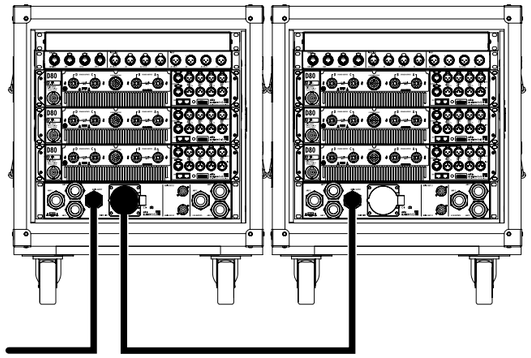


X5335
32A CEE Mains/LS Panel 19", 2 RU

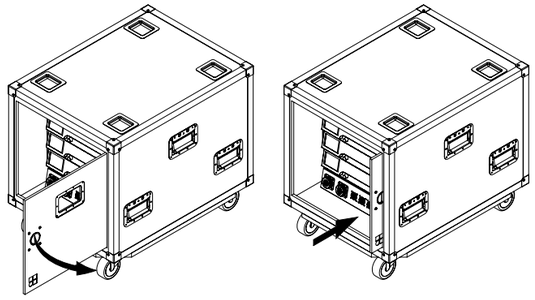
1 D80 Touring rack assembly, Nema L21-30 (120 V devices) on request
2 etherCON® and powerCON® are registered trademarks of the Neutrik AG, Liechtenstein

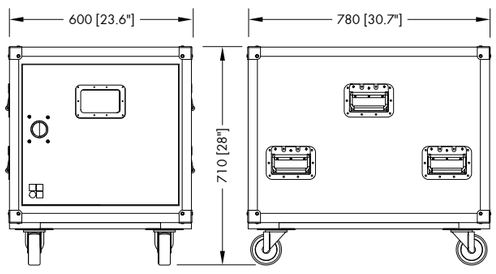
The D80 Touring rack assembly

A maximum of two D80 Touring rack assemblies can be linked to the 32 A CEE 5P mains supply.



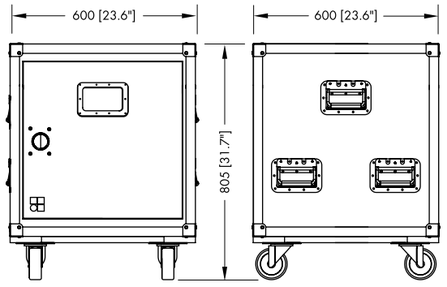
Sliding doors at front and back allow for quick and effective deployment on site.



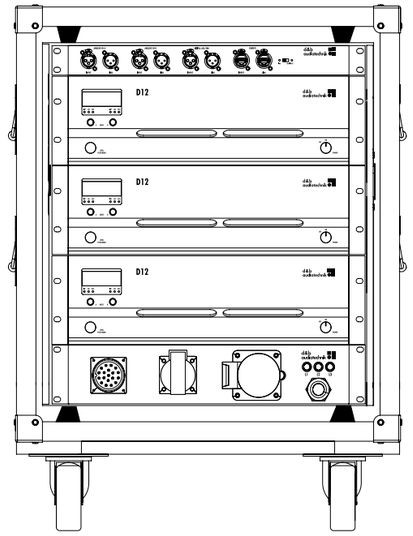


D80 Touring rack assembly dimensions in mm (inch)

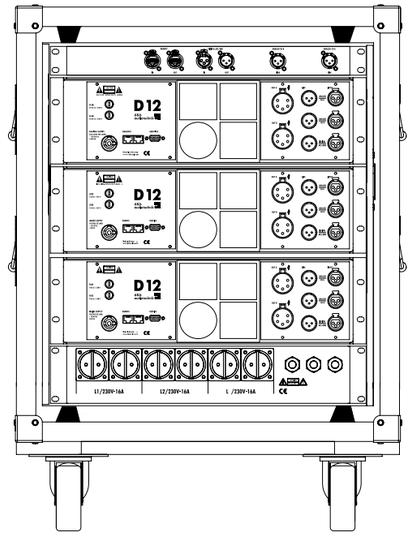
The D12 Touring rack assembly[1] is a package connected with MC12SD LKS19 loudspeaker multicore systems. The rack assembly comprises the following:
The E7440 Touring rack 12 RU 19" with sliding doors has a 60 x 60 cm footprint and is designed to fit standard truck widths. It has four 100 mm wheels, six handles, a Perspex window and recessed stacking moulds. The shock mounted 19" internal steel frame accommodates three D12 amplifiers and the requisite connection panels as detailed below:
The Z5313 I/O patch panel 1 RU 19" includes ten XLRs for analog and digital In/Out, four Neutrik[2] RJ45 and a CAN-Bus termination switch.
The Z5312 Mains distribution panel 2 RU 19" includes a CEE 16 A, 400 V, 5 pin mains input with link out, seven 16 A, 230 V Schuko outlets and an LKS19 pin female Socapex compatible multipin connector with three internal EP5 male breakouts.
The D12 Touring rack assembly is supplied prewired with XLR cabling for channels A and B, AES/EBU and CAT5/CAN-Bus.
The assembly is only available in the 16 A CEE 5P version and optionally equipped with EP5 or NL4 connectors.
The Touring rack assembly does not include the three D12 amplifiers. The fully assembled weight is 95 kg/208 lbs.



D12 Touring rack assembly dimensions in mm (inch)



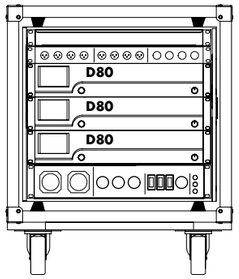
Z5310
D12 Touring rack assembly front view



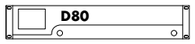
Z5310
D12 Touring rack assembly rear view

[1] Touring rack assembly is approved in countries accepting the CE mark
[2] Neutrik is a registered trademark of the Neutrik AG, Lichtenstein

The cables and adapters for Dual Channel mode



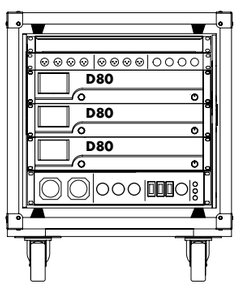
Z5330.xxx
D80 Touring rack assembly
OUT: 3 x NL8



1 x D80 amplifier
OUT: NL8

2 x D12 amplifier
OUT: EP5

2 x D12 amplifier
OUT: NL4



Z5330.xxx
D80 Touring rack assembly
OUT: 2 x LKS19

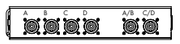
Z5346.000
Adapter 4 x EP5M to NLT8M

Z5345.001
Adapter 4 x NL4 to NLT8M

Z5343.xxx
MC8 Cable NLT8 F/M

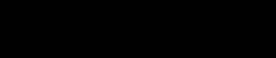
Z5320.xxx
MC12SD Cable LKS19 F/M

Z5344.002
Adapter NLT8F to 4 x NLT4M

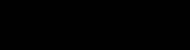


Z5347.001
Breakoutbox NLT8F/M
to 6 x NL4

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

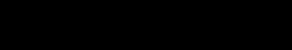
Z5341.002
Adapter LKS19M to 6 x NLT4M

Z5341.001
Adapter LKS19M to 6 x NL4

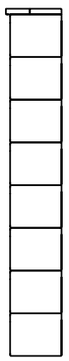
Z5341.000
Adapter LKS19M to 6 x EP5F passive

Z5340.xxx
MC4 Cable NLT4 F/M

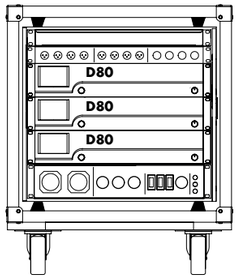
Z2299.xxx
MC2.5 Cable NL4



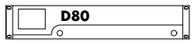
Z2297.xxx
MC4SD Cable EP5



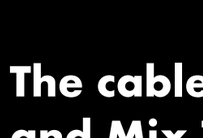
The cables and adapters for 2-Way Active and Mix TOP/SUB modes



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



1 x D80 amplifier
OUT: NL8



2 x D12 amplifier
OUT: EP5

Z5346.000
Adapter 4 x EP5M to NLT8M

2 x D12 amplifier
OUT: NL4

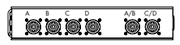
Z5345.001
Adapter 4 x NL4 to NLT8M

Z5330.xxx
D80 Touring rack assembly
OUT: 2 x LKS19

Z5343.xxx
MC8 Cable NLT8 F/M

Z5320.xxx
MC12SD Cable LKS19 F/M

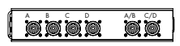
Z5348.002
Adapter NLT8F 2-way to 2 x NLT4M



Z5347.001
Breakoutbox NLT8 F/M
to 6 x NL4

Z5348.003
Adapter NLT8F 2-way
to 2 x NL8

Z5348.000
Adapter NLT8F 2-way
to 2 x EP5F



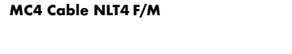
Z5347.000
Breakoutbox NLT8 F/M
to 6 x EP5

Z5321.002
Adapter LKS19M to 3 x NLT4M

Z5321.000
Adapter LKS19M to 3 x EP5F

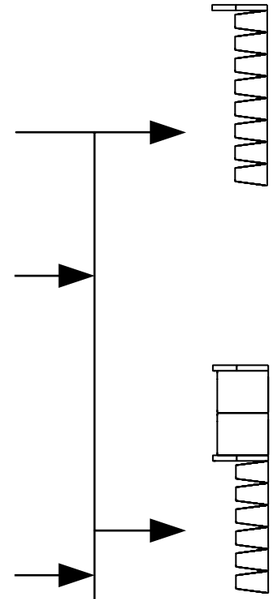
Z5323.000
Adapter LKS19M to 3 x NL8

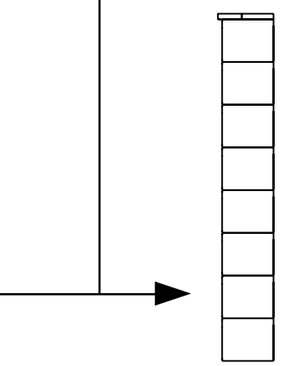
Z5340.xxx
MC4 Cable NLT4 F/M



Z5343.xxx
MC8 Cable NLT8 F/M

Z2297.xxx
MC4SD Cable EP5





Z2293.100
MC4SD Cable NL8, 1m
Speaker link

Amplifiers and Software product overview

Amplifiers	Z2700.000	**D6 Amplifier NL4**
	Z2700.400	**D6 Amplifier China NL4**
	Z2700.500	**D6 Amplifier USA NL4**
	Z2600.000	**D12 Amplifier 120/230 V EP5**
	Z2600.001	**D12 Amplifier 120/230 V NL4**
	Z2600.002	**D12 Amplifier 120/230 V NL8**
	Z2600.300	**D12 Amplifier 100/200 V EP5**
	Z2600.301	**D12 Amplifier 100/200 V NL4**
	Z2600.302	**D12 Amplifier 100/200 V NL8**
	Z2600.400	**D12 Amplifier China EP5**
	Z2600.401	**D12 Amplifier China NL4**
	Z2600.402	**D12 Amplifier China NL8**
	Z2710.000	**D80 Amplifier EP5**
	Z2710.001	**D80 Amplifier NL4**
Amplifier rack assemblies	Z5310.000	**D12 Touring rack assembly EP5**
	Z5310.001	**D12 Touring rack assembly NL4**
	Z5330.001	**D80 Touring rack assembly, CEE 32 A 5P**
	Z5330.xxx	**D80 Touring rack assembly, Nema L21-30 (120 V devices)** on request
	Z5332.xxx	**I/O Panel 19" for Z5330, 1 RU**
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
Remote network	Z3010.000	**R1 Remote control software**[1]
	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] available as a download at www.dbaudio.com