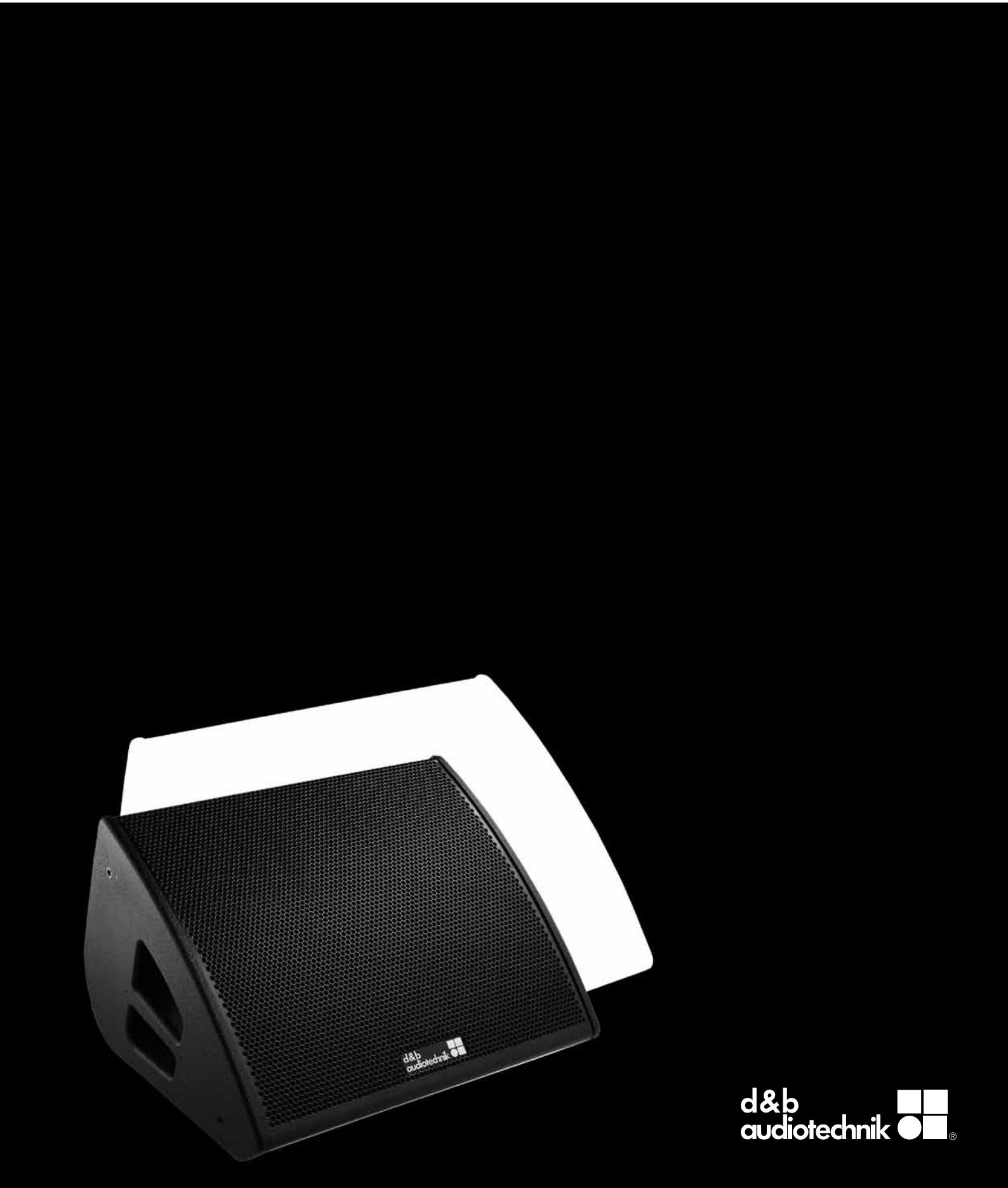
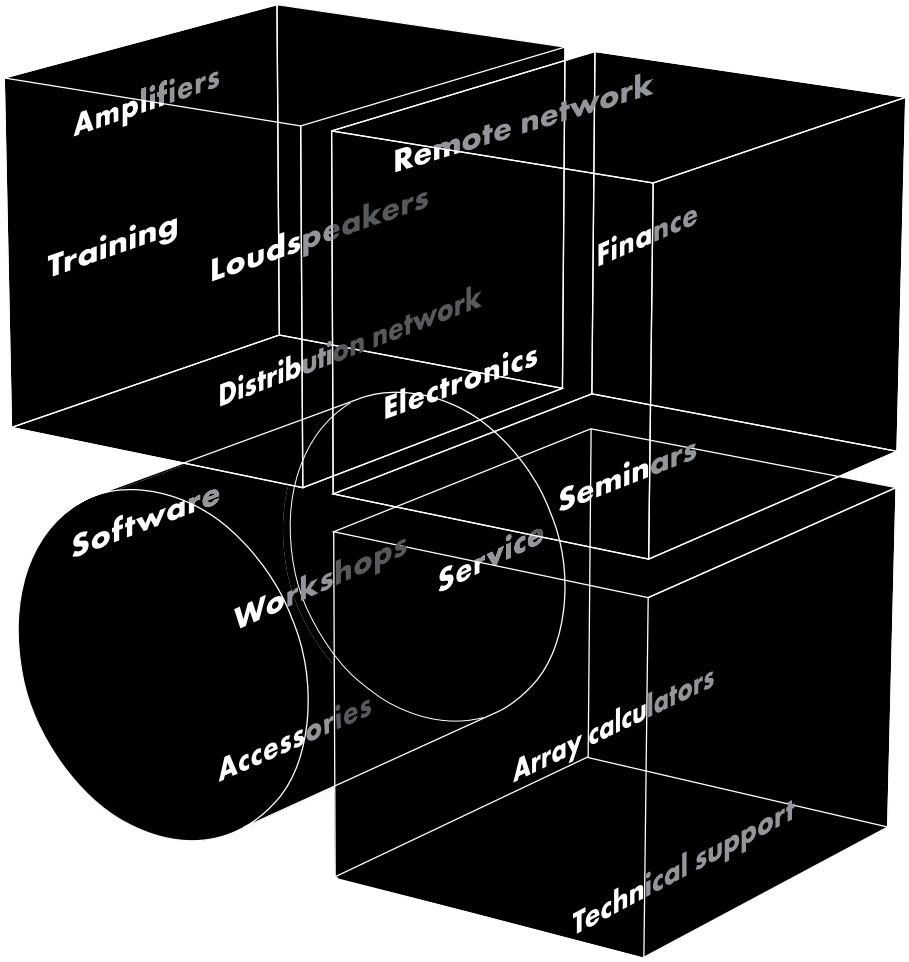
The Stage monitors



d&b audiotechnik®

Contents

The d&b System reality



As the name implies a d&b system is not just a loudspeaker. Nor is it merely a sum of the components: loudspeakers, control electronics, mechanical accessories and remote control. Right from the outset the d&b audiotechnik approach was to build integrated sound reinforcement systems that were more than the sum of their parts. Each element is tightly specified, precisely aligned and carefully integrated to achieve maximum possible performance, along with neutral sound characteristics. At the same time d&b offers integrated training, technical information, expert service and support, as well as a knowledgeable distribution network, so that the same optimal acoustic result is achieved by every system anywhere, at any time.

The Stage monitors

Where **Stage monitors** are concerned, d&b applies the same system concept as it does for its front of house systems. Stage monitoring can seriously enhance the performance of the artist and the success of a production. That's why d&b has always maintained that there should be no difference in the quality of sound between front of house and the stage, and that stage monitoring requirements are possibly even more demanding. Consequently d&b's Stage monitors have compact dimensions, functional design and high performance, together with well-defined dispersion control, resulting in systems that are visually discreet, exceptionally powerful and guarantee a high feedback stability. The "d&b specific" combination of a neutral, intelligible sound character that is clear and transparent even at high sound pressure levels provides the engineer with an efficient, effortless tool and a neutral platform. This is achieved through d&b's unique design approach based on a holistic view of the interaction between loudspeakers, electronics and mechanical accessories.

MAX12 and **MAX** are 2-way loudspeakers with a coaxially mounted 12" or 15" LF driver respectively and a 2" exit HF compression driver. By virtue of the low profile cabinet design these loudspeakers are ideal for use in visually sensitive situations. Although the HF and LF drivers have separate magnet structures, the d&b design to couple the high frequency horn throat to the low frequency diaphragm creates a 80° or 60° radial mid/high horn. While this exhibits a slightly increased directivity towards higher frequencies, the performance is still remarkably close to that of a constant directivity horn. The MAX12/MAX loudspeakers are passively crossed over, are able to be driven by any appropriate linear power amplifier and may optionally be used in a 2-Way Active mode to increase headroom, particularly in the high frequency range. They can be configured with d&b subwoofers as a drumfill or with a high stand adapter for small PA applications. In addition MAX when fitted with optional MAN CF4 stud plates serve as a downfill for flown C4 systems.

The **M6** and **M4** are low profile 2-way high performance stage monitors employing an integrated 12"/1.3" and 15"/1.3" exit coaxial driver respectively, with a CD horn and passive crossover network. The M6 and M4 distinguish themselves through a remarkable midrange presence, the M4 additionally through a dry and deep low end. Combined with excellent feedback stability, high sensitivity and discreet designs they line up perfectly with d&b's state of the art M2 monitor. With their respective 50° x 80° and 50° x 70° dispersion configurations they provide an accurately defined coverage area on stage and when used upright transform into powerful PA systems. They can optionally be operated in 2-Way Active mode by changing the D12's configuration without any modifications to the loudspeakers. The compact M6/M4 monitors weigh a mere 16/20 kg (35/44 lb) and respectively produce dB SPLs of 132/134 when driven passively by the D6 and 135/138 by the D12. They can also be driven actively by the D12 producing 138/140 dB SPLs.

The **M2** is d&b's definitive actively crossed over reference stage monitor system. The bass-reflex enclosure is optimized for minimal air compression and houses two 12" LF drivers, which are powered by the d&b D12 amplifier using SenseDrive technology. The 1.4" exit HF compression driver operates into a very low distortion horn with a waveguide oriented design. This superlative cabinet achieves a constant directivity of 45° x 60° (h x v) above the unusually low frequency of 600 Hz, resulting in substantial feedback stability and a very direct voice reproduction. Finally, its peak sound pressure level of 143 dB at 1m will satisfy even the unhealthiest of SPL requests.

The d&b **D6** and **D12** dual channel amplifiers realize the complete system. They provide two different power ranges, incorporate d&b loudspeaker specific configuration information, including the Stage monitor loudspeakers, the exceptions being the M2 and the 2-Way Active mode for MAX12, MAX, M6 and M4 that can only be driven by the more powerful D12. Both amplifiers 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. A user definable 4-band parametric equalizer and a delay capability is provided in every amplifier channel to reduce the need for external processing devices. The D12 amplifier additionally offers a 2-Way Active mode and a MIX TOP/SUB output configuration, output connector options as well as d&b SenseDrive.

The D6 and D12 amplifiers have **d&b Remote network** interfaces enabling control and monitoring of a large number of system functions and extensive system integration capabilities. d&b Load monitoring and System check are also incorporated to remotely monitor loudspeaker driver status.

To complete the picture, the **Stage monitors** maintain the d&b maxim of compatibility between systems enabling them to be easily combined with all other d&b products. Together these components create complete, integrated, flexible reinforcement solutions from the simplest to the most complex situations.

The Stage monitors

MAX12 monitor

MAX monitor

M6 monitor

M4 monitor

M2 monitor

D6 amplifier

D12 amplifier

The MAX12 monitor

MAX12 monitor

MAX12 is a 2-way passively crossed over loudspeaker. The coaxial mounted 12" LF driver and 2" exit HF compression driver both have separate magnet structures. The high frequency horn throat is coupled to the low frequency diaphragm creating a 80° radial mid/high horn. This exhibits a slightly increased directivity at higher frequencies, but has a remarkably similar dispersion performance to that of a constant directivity horn. The inherent time alignment of this topology is a close approximation to the ideal acoustic point source. The result is a loudspeaker with remarkable vocal presence and clarity, a neutral, balanced sound, high feedback stability and a high sound pressure level capability.

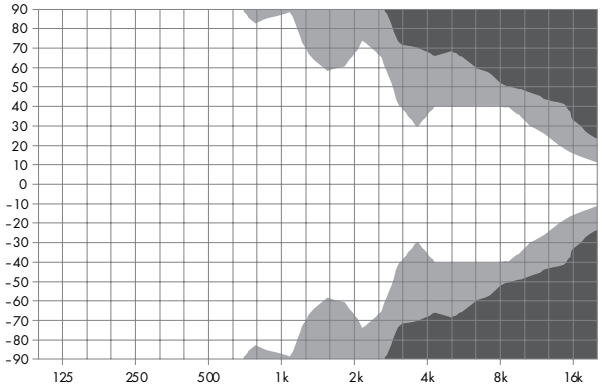
The MAX12 cabinet is constructed from marine plywood, which incorporates the handles, has an impact resistant paint finish, M10 threaded inserts and a socket to accept loudspeaker stands. The front of the loudspeaker cabinet is protected by a rigid metal grill, covered with a replaceable acoustically transparent foam. Additionally MAX12 may be used in a 2-Way Active mode to increase the headroom, particularly in the high frequency range.

System data

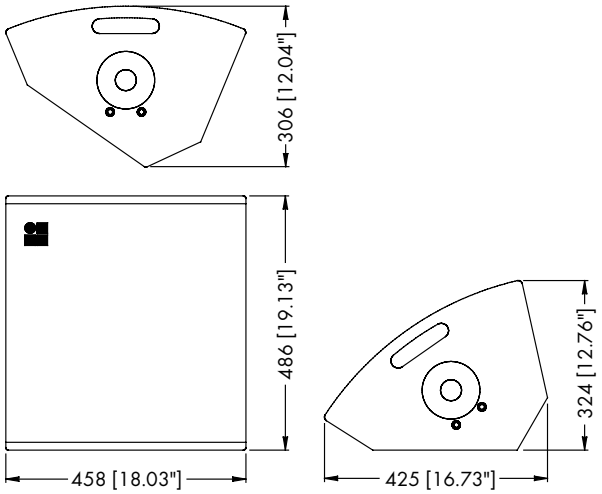
Frequency response (–5 dB, MAX set up)	65 Hz - 18 kHz
Max. sound pressure (1 m, free field)[1]	
with D6 (passive mode)	130 dB
with D12 (passive mode)	134 dB
with D12 (active mode)	135 dB
Input level (100 dB SPL/1 m)	
passive/active	–16 dBu/–16 dBu
Passive mode	LF: +/HF: –
Active mode	LF: +/HF: +

Loudspeaker data

Nominal impedance	8 ohms
Power handling capacity (RMS/peak 10 ms)[3]	250/1200 W
Nominal dispersion angle	80° conical
Components	12" driver/2" coaxial mounted compression driver
	passive crossover network
Connections	2 x EP5, optional 2 x NL4
Pin assignments[4]	
EP5	LF+: 1, LF–: 2, HF+: 3, HF–: 4
NL4	LF+: 1+, LF–: 1–, HF+: 2+, LF–: 2–
Weight	22 kg (48 lb)



MAX12 dispersion characteristics[2]



MAX12 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

[3] Recommended amplifier power rating 300 W to 500 W into 8 ohms

[4] Standard connector wiring allows passive or active operation with D12. For dedicated passive use, internal wiring can be altered to 2-wire speaker cables (NL4: 1+/1–)

The MAX monitor

MAX monitor

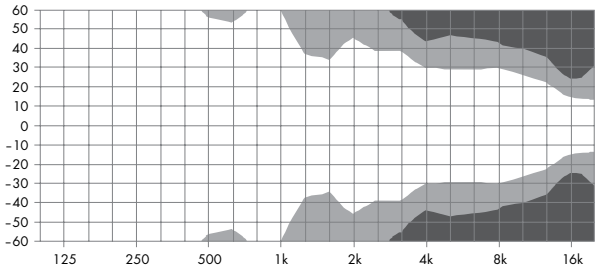
MAX is a 2-way passively crossed over loudspeaker. The coaxial mounted 15" LF driver and 2" exit HF compression driver both have separate magnet structures. The high frequency horn throat is coupled to the low frequency diaphragm creating a 60° radial mid/high horn. This exhibits a slightly increased directivity at higher frequencies, but has a remarkably similar dispersion performance to that of a constant directivity horn. The inherent time alignment of this topology is a close approximation to the ideal acoustic point source. The result is a loudspeaker with remarkable vocal presence and clarity, a neutral, balanced sound, high feedback stability and a high sound pressure level capability.
The MAX cabinet is constructed from marine plywood, which incorporates the handles, has an impact resistant paint finish and M10 threaded inserts. The front of the loudspeaker cabinet is protected by a rigid metal grill, covered with a replaceable acoustically transparent foam. A socket to accept loudspeaker stands, ratchet strap kelping bar and an optional version with MAN CF4 stud plates complete the multiple application choices. Additionally MAX may be used in a 2-Way Active mode to increase the headroom, particularly in the high frequency range.

System data

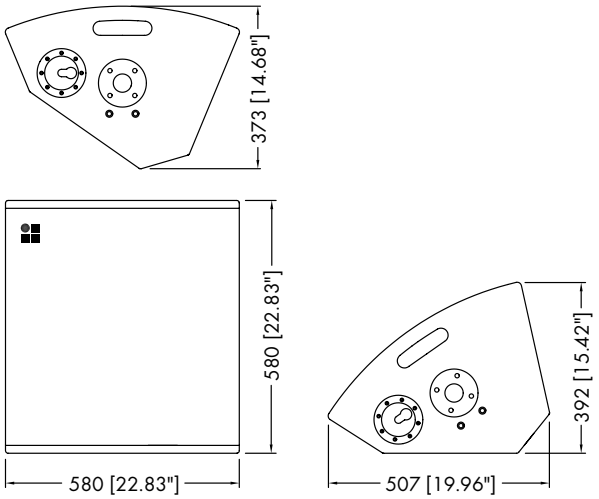
Frequency response (–5 dB, MAX set up) ..... 55 Hz - 18 kHz
Max. sound pressure (1 m, free field)[1] .....
with D6 (passive mode) ..... 131 dB
with D12 (passive mode) ..... 135 dB
with D12 (active mode) ..... 136 dB
Input level (100 dB SPL/1 m) .....
passive/active ..... –17 dBu/–17 dBu
Passive mode ..... LF: +/HF: –
Active mode ..... LF: +/HF: +

Loudspeaker data

Nominal impedance ..... 8 ohms
Power handling capacity (RMS/peak 10 ms)[3] ..... 250/1200 W
Nominal dispersion angle ..... 60° conical
Components ..... 15" driver/2" coaxial mounted compression driver
..... passive crossover network
Connections ..... 2 x EP5, optional 2 x NL4
Pin assignments[4] .....
EP5 ..... LF+:1, LF–: 2, HF+: 3, HF–: 4
NL4 ..... LF+: 1+, LF–: 1–, HF+: 2+, LF–: 2–
Weight ..... 26 kg (57 lb)



MAX dispersion characteristics[2]



MAX 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
3 Recommended amplifier power rating 300 W to 500 W into 8 ohms
4 Standard connector wiring allows passive or active operation with D12. For dedicated passive use, internal wiring can be altered to 2-wire speaker cables (NL4: 1+/1–)

The M6 monitor

M6 monitor

The M6 is a 2-way high performance stage monitor employing an integrated 12" LF and 1.3" exit horn loaded HF coaxial driver design that utilizes neodymium magnets. The constant directivity dispersion of 50° x 80° (h x v), which this unique horn provides, delivers an accurately defined coverage area on stage. The M6 can also be operated in 2-Way Active mode.

When the cabinet is used in an upright position the M6 serves as a powerful PA loudspeaker with a 80° x 50° dispersion suitable for a variety of applications. For dedicated installation applications the dispersion characteristics of the M6 driver assembly can be rotated in 45° increments.

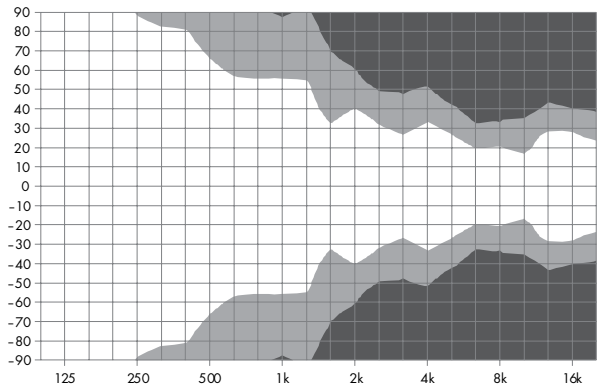
The M6 cabinet is constructed from marine plywood, which incorporates the handles, has an impact resistant paint finish, M10 threaded inserts and a socket to accept loudspeaker stands. The front of the loudspeaker cabinet is protected by a rigid metal grill backed with an acoustically transparent foam. Two runners recessed in the bottom panel protect the cabinet from scratching and prevents movement.

System data

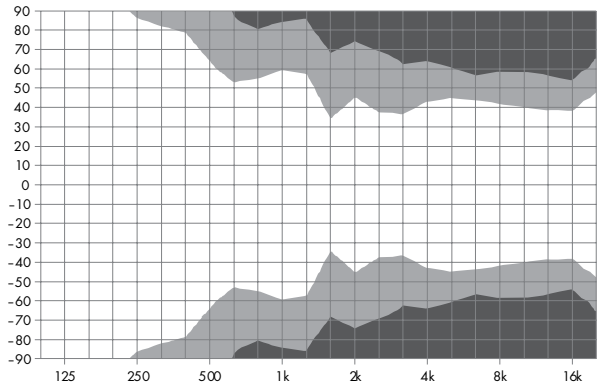
Frequency response (–5 dB)..... 65 Hz - 17 kHz
Max. sound pressure (1 m, free field)[1] .....
with D6 (passive mode) .....132 dB
with D12 (passive mode).....135 dB
with D12 (active mode) .....138 dB
Input level (100 dB SPL/1 m).....
passive/active..... –22 dBu/–22 dBu
Passive mode ..... LF: –/HF: +
Active mode..... LF: –/HF: –

Loudspeaker data

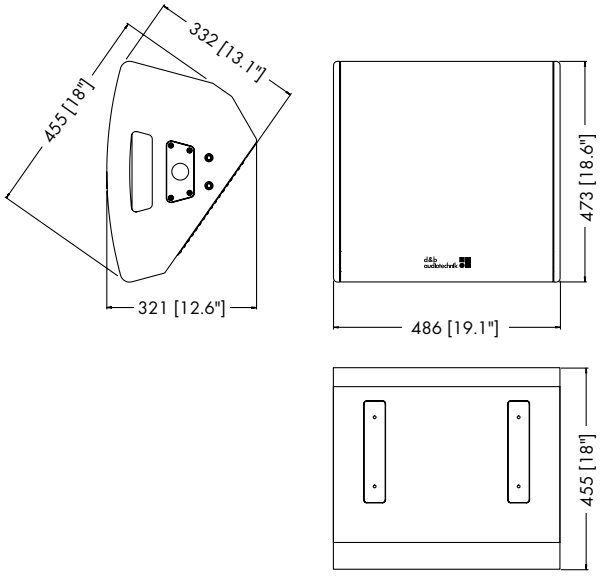
Nominal impedance.....8 ohms
Power handling capacity (RMS/peak 10 ms) .....400/1600 W
Nominal dispersion angle (h x v) ..... 50° x 80°
Components..... 12" driver with neodymium magnet
.....coaxial 1.3" exit compression driver with 3" coil and CD horn
.....passive crossover network
Connections .....2 x EP5, 2 x NL4 or 2 x NLT4 F/M
Pin assignments.....
EP5 ..... LF+: 1, LF–: 2, HF+: 3, HF–: 4
NL4 and NLT4 F/M .....LF+: 1+, LF–: 1–, HF+: 2+, HF–: 2–
Weight..... 16 kg (35 lb)



M6 horizontal dispersion characteristics[2]



M6 vertical dispersion characteristics[2]



M6 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 M4 monitor

M4 monitor

The M4 is a 2-way high performance stage monitor employing an integrated 15″ LF and 1.3″ exit horn loaded HF coaxial driver design that utilizes neodymium magnets. The constant directivity dispersion of 50° x 70° (h x v), which this unique horn provides, delivers an accurately defined coverage area on stage. The M4 can also be operated in 2-Way Active mode.

When the cabinet is used in an upright position the M4 serves as a powerful PA loudspeaker with a 70° x 50° dispersion suitable for a variety of applications. For dedicated installation applications the dispersion characteristics of the M4 driver assembly can be rotated in 45° increments.

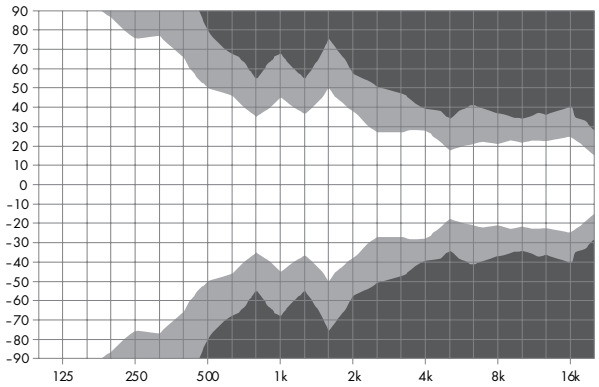
The M4 cabinet is constructed from marine plywood, which incorporates the handles, has an impact resistant paint finish, M10 threaded inserts and a socket to accept loudspeaker stands. The front of the loudspeaker cabinet is protected by a rigid metal grill backed with an acoustically transparent foam. Two runners recessed in the bottom panel protect the cabinet from scratching and prevents movement.

System data

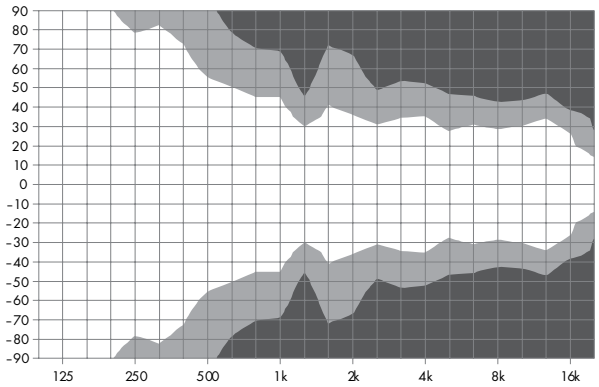
Frequency response (–5 dB)..... 55 Hz - 17 kHz
Max. sound pressure (1 m, free field)[1] .....
with D6 (passive mode) .....134 dB
with D12 (passive mode).....138 dB
with D12 (active mode) .....140 dB
Input level (100 dB SPL/1 m).....
passive/active.....–22 dBu/–22 dBu
Passive mode ..... LF: –/HF: +
Active mode ..... LF: –/HF: –

Loudspeaker data

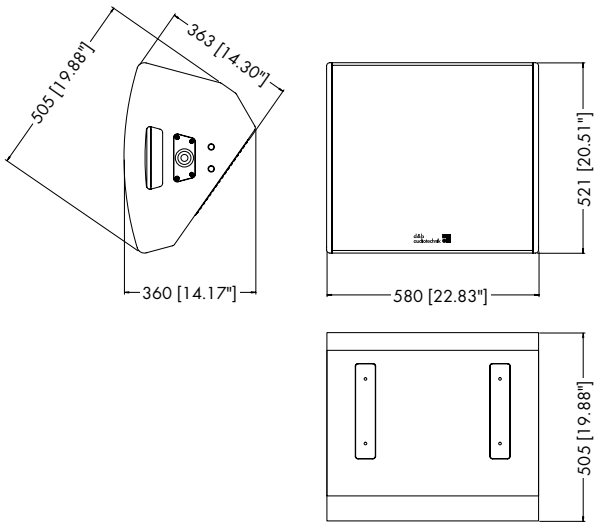
Nominal impedance.....8 ohms
Power handling capacity (RMS/peak 10 ms)..... 400/1600 W
Nominal dispersion angle (h x v) .....50° x 70°
Components.....15″ driver with neodymium magnet
.....coaxial 1.3″ exit compression driver with 3″ coil and CD horn
.....passive crossover network
Connections .....2 x EP5, 2 x NL4 or 2 x NLT4 F/M
Pin assignments.....
EP5 ..... LF+: 1, LF–: 2, HF+: 3, HF–: 4
NL4 and NLT4 F/M .....LF+: 1+, LF–: 1–, HF+: 2+, HF–: 2–
Weight.....20 kg (44 lb)



M4 horizontal dispersion characteristics[2]



M4 vertical dispersion characteristics[2]



M4 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 M2 monitor

M2 monitor

The M2 is designed as d&b's definitive high performance stage monitor system. The bass-reflex enclosure is optimized for minimal air compression and houses two 12" LF drivers. It is actively crossed over and powered by both channels of the d&b D12 amplifier, using SenseDrive for the low frequency channel. The 1.4" exit HF compression driver has a compact but extremely strong neodymium magnet assembly operating into a very low distortion waveguide oriented horn, optimized for monitor applications. The component configuration permits the use of an extremely low profile cabinet which achieves a constant directivity from an unusually low frequency of 600 Hz upwards with a nominal dispersion of 45° x 60° (h x v). Together with a cabinet baffle angle of 40° to the floor, this dispersion offers a realistic artist listening area starting directly above the cabinet and ranging quite far upstage.

The M2 bestows its full dynamics across the entire frequency range without compromising the solo voices or instruments, which always stay clearly and audibly in front of the mix.

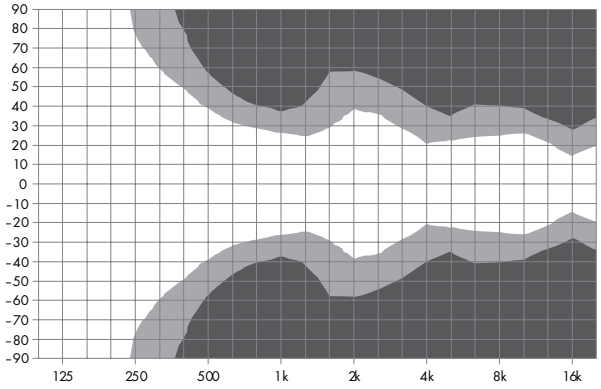
The M2 cabinet is constructed from marine plywood and has an impact resistant paint finish. The cabinet is protected by a rigid metal grill backed with an acoustically transparent foam. Two fittings that accept the Flying pin 10 mm are located on both sides of the cabinet allowing quick and flexible rigging.

System data

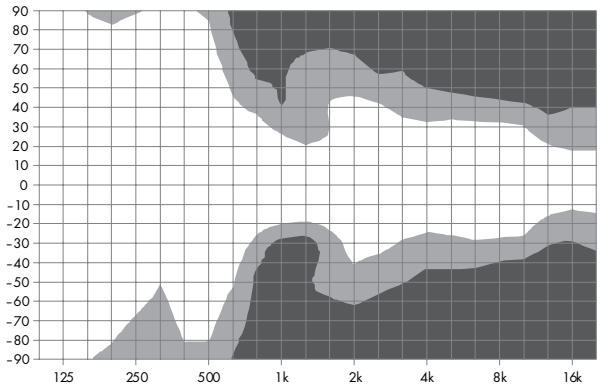
Frequency response (–5 dB)..... 50 Hz - 17 kHz
Max. sound pressure level (1 m, free field)[1].....
with D12 .....143 dB
Input level (100 db SPL/1 m) ..... –26 dBu

Loudspeaker data

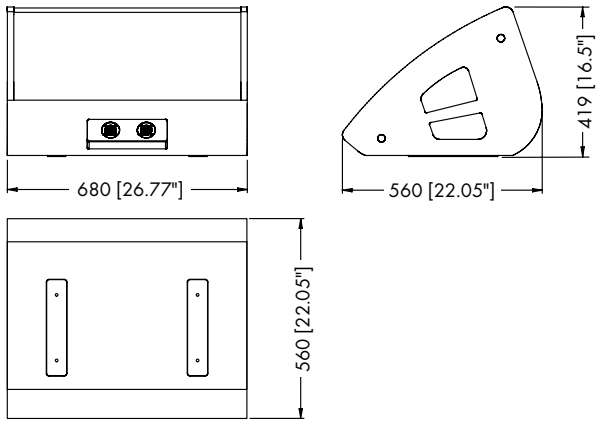
Nominal impedance LOW/HIGH ..... 4/8 ohms
Power handling capacity LOW (RMS/peak 10 ms)...500/2000 W
Power handling capacity HIGH (RMS/peak 10 ms).....50/200 W
Dispersion characteristics (h x v) .....45° x 60°
Components.....
.....2 x 12" driver/1.4" compression driver with CD horn
Connections ..... 2 x EP5, optional 2 x NL8
Pin assignments.....
EP5 ..... LF+: 1, LF–: 2, MHF+: 3, MHF–: 4, SenseDrive: 5
NL8 ..... LF+: 1+, LF–: 1–, MHF+: 4+, MHF–: 4–, SenseDrive: 3–
Weight..... 38 kg (83 lb)



M2 horizontal dispersion characteristics[2]



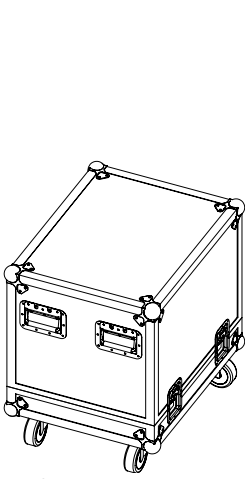
M2 vertical dispersion characteristics[2]

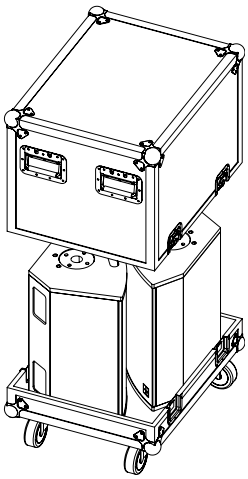


M2 cabinet dimensions in mm (inch)

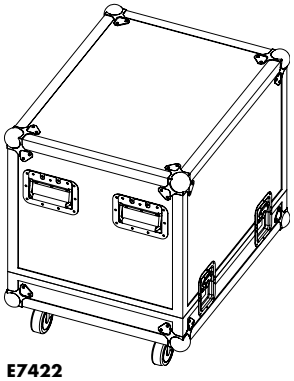
[1] Broadband measurement, pink noise, crest factor 4, peak measurement, linear weighting
[2] Dispersion angle vs frequency plotted using lines of equal sound pressure (isobars) at –6 dB and –12 dB

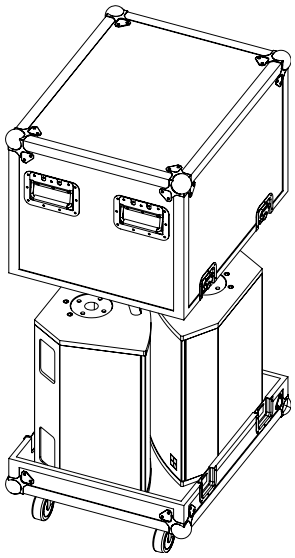
The Stage monitor cases



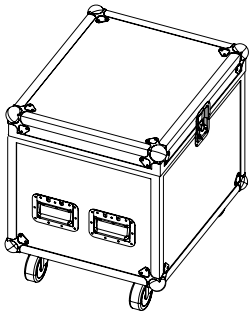


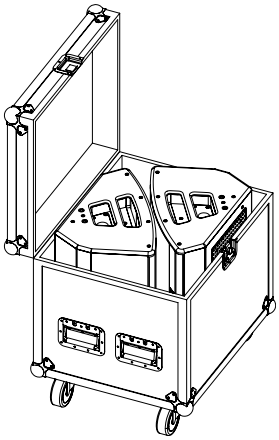
E7426
Touring case 2 x MAX12



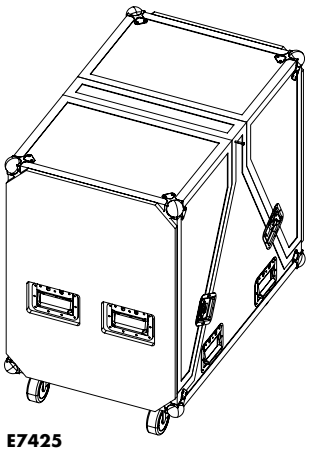


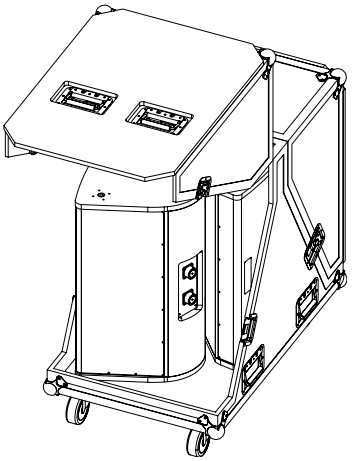
E7422
Touring case 2 x MAX





E7437
Touring case 2 x M6

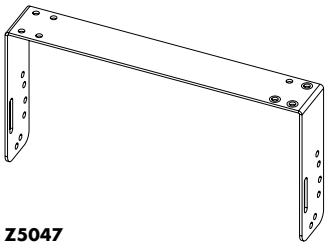




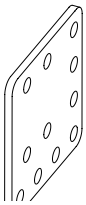
E7425
Touring case 2 x M2

The MAX12/MAX mounting accessories

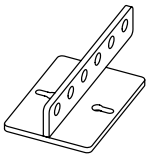
Safety approval
d&b loudspeakers and accessories are designed for set up and use within situations requiring compliance with the provisions and directives of BGV C1 Rule for the Prevention of Accidents.



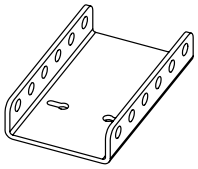
Z5047
MAX12 Horizontal bracket
Z5043
MAX Horizontal bracket



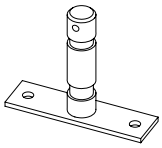
Z5044
MAX Bracket connector



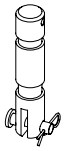
Z5020
Flying adapter 02



Z5025
Flying adapter 03

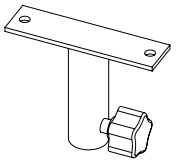


Z5010
TV spigot with fixing plate



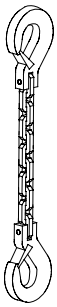
Z5015
TV spigot 02

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



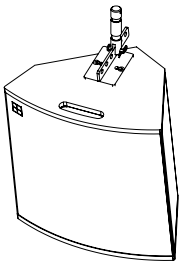
Z5024
Loudspeaker stand adapter

Z5040
Flying stud

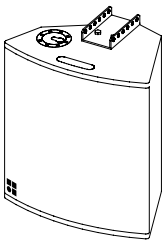


E6521
1t Chain, 23 links

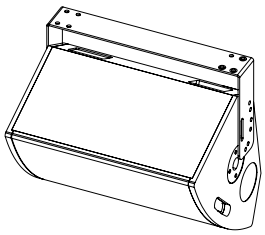
The MAX12/MAX mounting examples



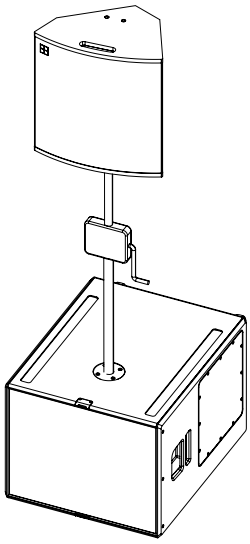
MAX12/MAX with
Z5020 Flying adapter 02
Z5015 TV spigot 02



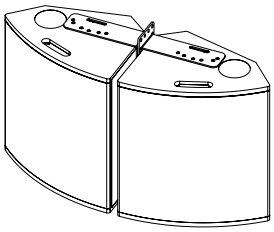
MAX12/MAX with
Z5025 Flying adapter 03



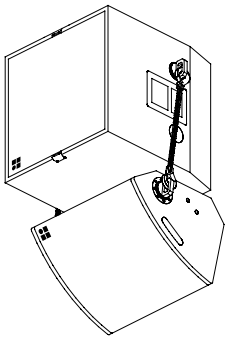
MAX12/MAX with
Z5047 MAX12 or Z5043 MAX
Horizontal bracket
for ceiling and wall mounting



MAX12/MAX with
Z5013 Loudspeaker stand
winder M20



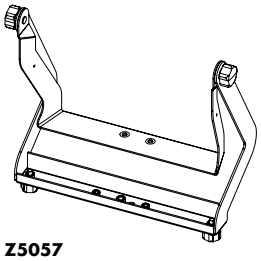
MAX12/MAX array with
Z5047/Z5043
MAX12/MAX Horizontal bracket
Z5044 MAX Bracket connector



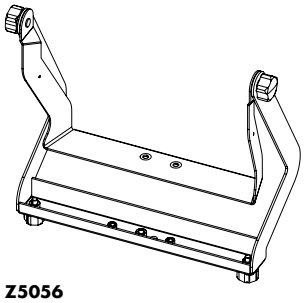
MAX as downfill for flown
C4 system

The M6/M4/M2 mounting accessories

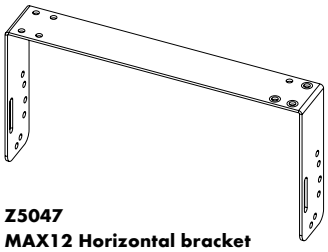
Safety approval
d&b loudspeakers and accessories are designed for set up and use within situations requiring compliance with the provisions and directives of BGV C1 Rule for the Prevention of Accidents.



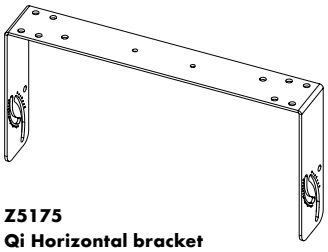
Z5057
M6 Flying bracket



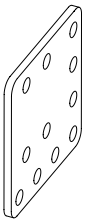
Z5056
M4 Flying bracket



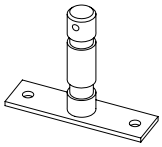
Z5047
MAX12 Horizontal bracket



Z5175
Qi Horizontal bracket

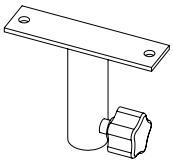


Z5044
MAX Bracket connector

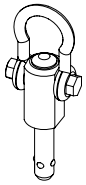


Z5010
TV spigot with fixing plate

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

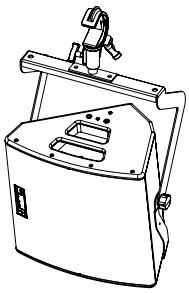


Z5024
Loudspeaker stand adapter

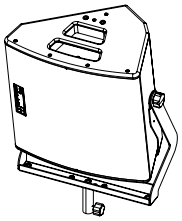


Z5048
Flying pin 10 mm

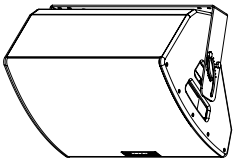
The M6/M4/M2 mounting examples



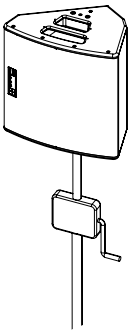
M6/M4 with
Z5057/Z5056 M6/M4 Flying brackets
Z5010 TV spigot with fixing plate
Z5012 Pipe clamp for TV spigot



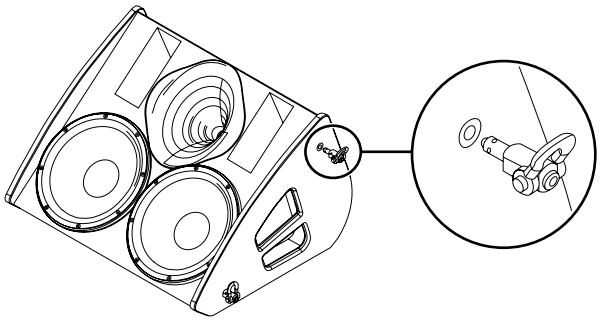
M6/M4 with
Z5057/Z5056
M6/M4 Flying bracket
Z5024 Loudspeaker stand adapter



M6/M4 with
Z5047 MAX12 Horizontal bracket/
Z5175 Qi Horizontal bracket



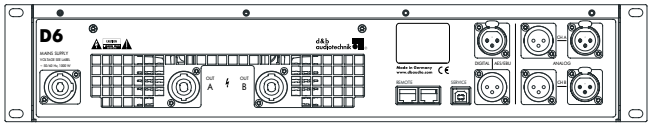
M6/M4 with
Z5009 Loudspeaker stand with winder or
Z5013 Loudspeaker stand winder M20



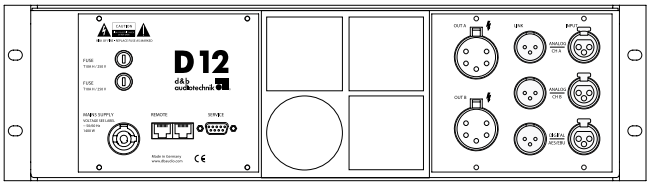
M2 monitor with Z5048 Flying pin 10 mm

The D6 and D12 amplifiers

The D6 and D12 are dual channel amplifiers developed and manufactured by d&b utilizing Digital Signal Processing (DSP) to incorporate loudspeaker specific configuration information and functions. These are designed for use with d&b loudspeakers, have both digital and analog signal inputs as well as link outputs, remote control and monitoring capabilities and switch mode power supplies. The level control incorporates a digital rotary encoder enabling selection of all operating modes in conjunction with a Liquid Crystal Display (LCD).
Loudspeaker specific configurations for current d&b loudspeakers and a linear mode are contained within them, the exception being that the D6 does not include 2-Way Active, V-Series and B2-SUB configurations.
The digital elements of the D6 and D12 are specified and constructed to achieve the best possible audio performance while maintaining a very low latency of 0.3 msec. The Digital Signal Processing is used to provide the loudspeaker specific configurations, sophisticated protection circuits modelling thermal and mechanical driver behaviour, and switch functions.
User definable equalization and delay functions are incorporated in each channel of the amplifiers and can be used for applications such as front fills or under balcony delays without the need for external processors. The signal delay capability allows delay settings of up to 340 msec. (= 100 m/328 ft) to be applied independently to each channel as can the 4-band parametric equalizer, providing optional Boost/Cut or Notch filtering. A signal generator offering pink noise or sine wave program is also incorporated for test and alignment purposes. Every unit can be given a unique Device Name to simplify identification and a password protected LOCK function is also incorporated to prevent unauthorized changes.
The D6 and D12 amplifiers also detect incoming Pilot signals at its input (Input monitoring) and can use Load monitoring and System check functions to determine the status of the loudspeaker impedance. d&b System check is designed to verify that the system performs within a predefined condition and can be used to report the system condition after a show.
d&b Load monitoring, on the other hand, enables automatic and continuous impedance monitoring and along with Input monitoring is designed for incorporation within applications specified to the requirements stated in the International Standard IEC 60849 'Sound Systems for Emergency Purposes'. Both can determine the status of an LF or HF driver in systems with multiple elements, even if these are crossed over passively.
The D6 utilizes a switch mode power supply with PFC suitable for mains supply voltages 100 V/115 V/200 V/230 V, 50 - 60 Hz whilst the D12 utilizes an autosensing switch mode power supply for mains voltages 115/230 V, 50 - 60 Hz (optional 100/200 V). Both power supplies have overvoltage protection and each amplifier has a temperature and signal controlled fan to cool the internal assemblies.
The 2 RU lightweight D6 is specifically designed to deliver medium power into low impedance loads between 4 and 16 ohms. The 3 RU D12 is specifically designed to produce high power into low impedance loads, typically those between 4 and 16 ohms. Due to differences in impedance response against frequency, the maximum number of cabinets driven by each D12 channel varies depending on the loudspeaker type.
Apart from selectable output configurations for dual channel, Mix TOP/SUB and 2-Way Active mode, the D12 also provides d&b SenseDrive for use with the LF drivers in d&b active loudspeakers and subwoofers.
Both amplifiers house an I/O panel containing: analog signal inputs with link outputs for each channel, an AES/EBU digital input with a link output and NL4 loudspeaker outputs. The D12 I/O panel additionally offers the options of EP5 or NL8 loudspeaker outputs. The two RJ 45 REMOTE sockets at the rear of the D6 and the D12 amplifiers integrate them into the d&b Remote network via CAN-Bus, enabling remote control and/or monitoring.
A USB-B (D6) or a SUB-D9 (D12) SERVICE interface is provided to enable future firmware updates containing new loudspeaker configurations or additional functions to be loaded to the units.



D6 rear view



D12 rear view

The D6 and D12 amplifier data

D6 Display
ISP, GR, OVL A/B.....LED indicators
Liquid Crystal Display (LCD).....Graphic display/120 x 32 Pixel

D6 Controls
POWER, MUTE/LEVEL.....Switch, rotary encoder
Function switches.....Loudspeaker specific circuits
4-band equalizer.....Optional PEQ/Notch
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
Frequency generator.....Pink noise or Sine wave

D6 Connectors
INPUT/LINK ANALOG A/B.....3 pin XLR female/male[1]
INPUT/LINK DIGITAL AES/EBU.....3 pin XLR female/male[1]
Sampling rate.....48 kHz/96 kHz
OUT CHANNEL A/B.....NL4
REMOTE.....2 x RJ 45 parallel
SERVICE.....USB Type B

D6 Protection circuits
Mains inrush current limiter.....1.5 A RMS at 230 V
Loudspeaker switch on delay.....Approx. 2 sec.
Overvoltage protection.....Up to 400 VAC

D6 Data (linear setting with subsonic filter)
Rated output power (THD+N < 0.1%).....
.....2 x 350 W into 8 ohms, both channels are driven
.....2 x 600 W into 4 ohms, both channels are driven
S/N ratio (unweighted, RMS).....>110 dBr

D6 Digital Signal Processing
Sampling rate.....96 kHz/27 Bit ADC/24 Bit DAC
Basic delay/latency analog input.....0.3 msec.

D6 Power supply
Switch mode power supply for.....
.....100/115/200/230V, 50 - 60 Hz
Mains connector.....PowerCon® [2]

D6 Remote network
Remote network.....CAN-Bus

D6 Dimensions, weight
Height x width x depth.....2 RU x 19" x 353 mm/13.9"
Weight.....8 kg/17.6 lb

D12 Display
ISP, GR, OVL A/B.....LED indicators
Liquid Crystal Display (LCD).....Graphic display/120 x 32 Pixel

D12 Controls
POWER, MUTE/LEVEL.....Switch, rotary encoder
Function switches.....Loudspeaker specific circuits
4-band equalizer.....Optional PEQ/Notch
Delay setting.....0.3 - 340 msec. with 0.1 msec. detents
Configurations.....Current d&b loudspeakers and linear mode
Frequency generator.....Pink noise or Sine wave

D12 Connectors
INPUT/LINK ANALOG A/B.....3 pin XLR female/male[1]
INPUT/LINK DIGITAL AES/EBU.....3 pin XLR female/male[1]
Sampling rate.....48 kHz/96 kHz
OUT CHANNEL A/B.....Optional EP5/NL4/NL8
REMOTE.....2 x RJ 45 parallel
SERVICE.....SUB-D9 female

D12 Protection circuits
Mains inrush current limiter.....5 A RMS at 230 V
Loudspeaker switch on delay.....Approx. 2 sec.
Overvoltage protection.....Up to 400 VAC

D12 Data (linear setting with subsonic filter)
Rated output power (THD+N < 0.1%).....
.....2 x 750 W into 8 ohms, both channels are driven
.....2 x 1200 W into 4 ohms, both channels are driven
S/N ratio (unweighted, RMS).....>110 dBr

D12 Digital Signal Processing
Sampling rate.....96 kHz/27 Bit ADC/24 Bit DAC
Basic delay/latency analog input.....0.3 msec.

D12 Power supply
Autosensing switch mode power supply for.....
.....115/230 V, 50 - 60 Hz
.....optional 100/200 V, 50 - 60 Hz
Mains connector.....PowerCon® [2]

D12 Remote network
Remote network.....CAN-Bus

D12 Dimensions, weight
Height x width x depth.....3 RU x 19" x 353 mm/13.9"
Weight.....13 kg/29 lb

[1] XLR pin assignment analog, inputs and links: 1 = GND, 2 = pos. signal, 3 = neg. signal
XLR pin assignment digital, input and link: 1 = GND, 2 = signal, 3 = signal
[2] PowerCon® is a registered trademark of the Neutrik AG, Liechtenstein

The operation with D6 and D12 amplifiers

Operation with D6 and D12

	MAX12	MAX	M6	M4
Max. LS per channel	2	2	2	2
Max. LS per channel in special applications[1]	3	3	3	3

Maximum loudspeakers per D6 or D12 channel

2-Way Active operation with D12

	MAX12	MAX	M6	M4	M2
Max. LS per D12	2	2	2	2	2

Maximum loudspeakers per D12

D6 and D12 controller settings

	MAX12	MAX	M6	M4	M2
CUT	x	x	x	x	x
HFA	x	x	x	x	
CPL	x	x	x	x	x

D6 and D12 controller settings for each loudspeaker

Passive and 2-Way Active operation

The D6 and D12 amplifiers can drive the MAX12, MAX, M6 und M4 passively, the D12 also allows 2-Way Active operation. The M2 can only be driven in 2-Way Active operation.

CUT mode

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

HFA mode

In HFA mode (High Frequency Attenuation), the HF response of the system 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. High Frequency Attenuation 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 maximum attenuation below 400 Hz (for M2 250 Hz), providing a balanced frequency response when monitors are used in pairs. 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).

MAX12 and MAX with other amplifiers

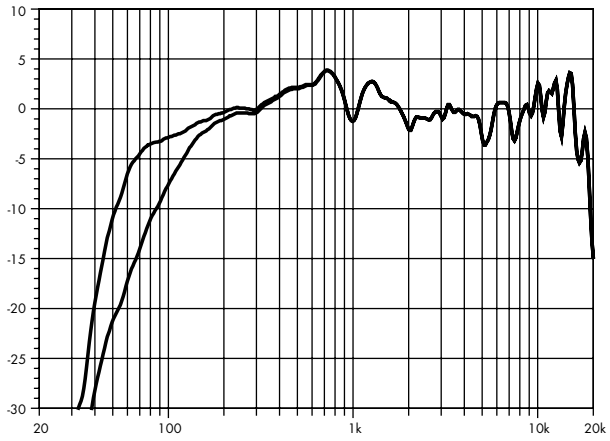
MAX12 and MAX may be driven by any high quality power amplifier provided the output power does not exceed 500 Watts into 8 ohms and an additional subsonic filter (25 Hz and 12 dB/octave) is used.

d&b SenseDrive

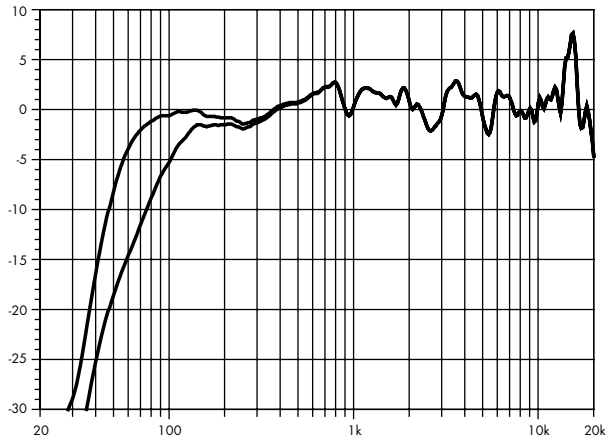
The D12 incorporates d&b SenseDrive for accurate control of LF drivers in d&b loudspeakers driven 2-Way Active or in d&b subwoofers driven actively, resulting in an extremely precise bass performance, even at high levels. SenseDrive is only available using a D12 fitted with EP5 connectors and appropriate 5-wire cabling. For further information please refer to the d&b TI 340 SenseDrive, which is available for download at www.dbaudio.com.

[1] In applications with low continuous levels and low ambient temperatures

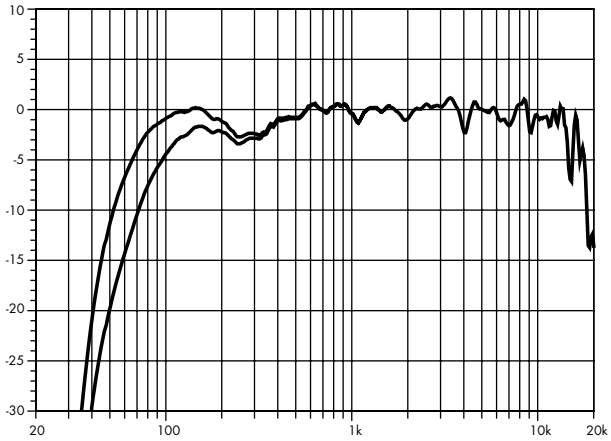
The Stage monitors frequency response



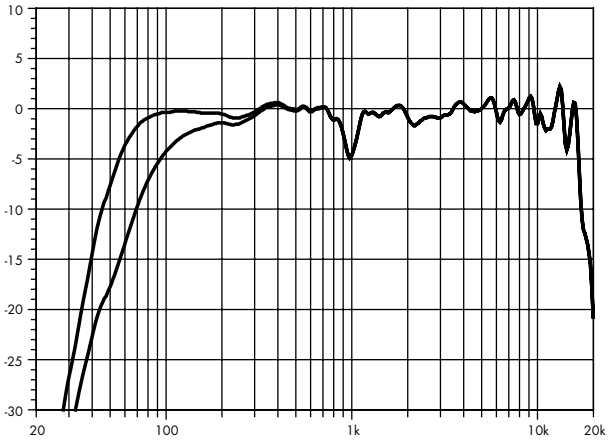
MAX12 standard and CUT (MAX configuration, floor coupling)



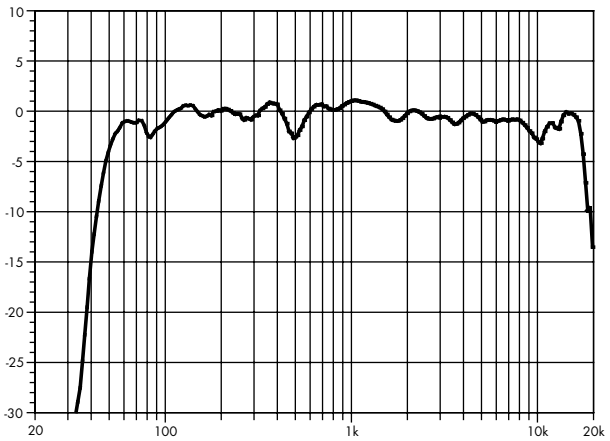
MAX standard and CUT (MAX configuration, floor coupling)



M6 standard and CUT (floor coupling)



M4 standard and CUT (floor coupling)



M2 standard

The d&b Remote network

d&b Remote network

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 PC in the control room, at the mix position, or on a wireless tablet PC in the auditorium.

This central access to all functions, controls and detailed system information unlocks the full potential of the d&b system approach. Extensive monitoring and diagnostics enable detailed examination of the system performance. Control can be undertaken on individual loudspeakers, on multiple groups of loudspeakers or formed into groups that address the complete system.

The flexibility and scalability of this approach, coupled with the inclusion of several types of interfaces, allow the d&b Remote network to be deployed to address the differing control and monitoring requirements in a broad variety of mobile and installed applications, regardless of their size.

In mobile applications, system engineers may use the remote network to verify and tune the system. System check and device diagnostics enable detailed monitoring as and when required, before, during, or after a show.

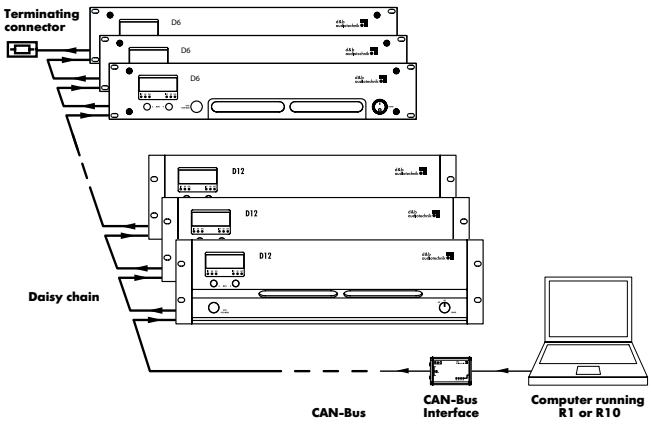
In installation projects system integrators can configure the remote network to offer access to different levels of control tailored to the operational demands. For example, simplified functionality for daily use and more complex functionality when multiple applications are required within one installation. Input and Load monitoring coupled with automatic error messages allow installation operators to ensure the optimum performance at all times.

d&b Remote interfaces

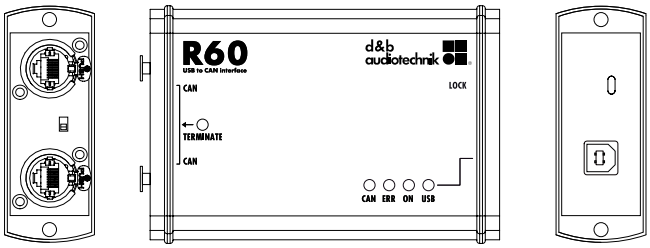
Every d&b amplifier is fitted with a Remote interface for the Controller Area Network (CAN) Bus. Each D6 and D12 has two REMOTE connectors (RJ 45) to enable the CAN-Bus signal to be daisy chained through them. A simple d&b Remote network application consists of a computer running R1 Remote control software, an R60 USB to CAN interface, CAT 5 shielded twisted pair cable with shielded RJ 45 connectors and d&b D6 or D12 amplifiers.

Up to five R60 USB to CAN interfaces can be operated with one computer running R1, while a maximum of 504 amplifiers can be incorporated into one application. The maximum bus cable length of a d&b Remote network is 600 metres, see the adjoining table for cable length examples. The R70 Ethernet to CAN interface can be used for applications over longer distances, in conjunction with a fibre optic network for example.

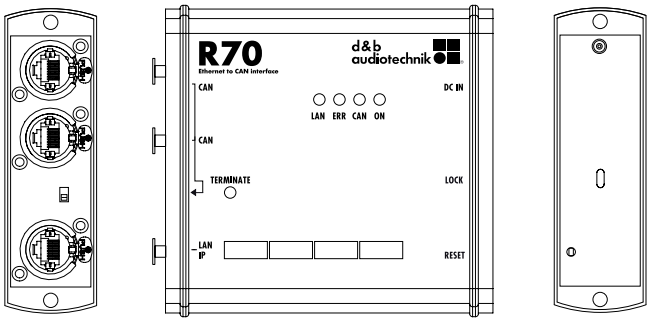
For further information about CAN-Bus cabling requirements and interfaces please refer to the d&b TI 312 d&b Remote network, which is available for download at www.dbaudio.com.



d&b Remote network



Z6118 R60 USB to CAN interface



Z6124 R70 Ethernet to CAN interface

Cable cross section	Maximum bus cable length with numbers of amplifiers	
	32	100
0.25 mm² (24 AWG)	180 m (600 ft)	140 m (460 ft)
0.75 mm² (18 AWG)	500 m (1650 ft)	330 m (1100 ft)

Examples of bus cable length

The d&b Remote software

R1 Remote control software

R1 Remote control software is a graphical drag and drop user interface enabling the construction of a screen based virtual control surface for d&b systems, using the d&b Remote network. All major features, functions and controls available on the front panel of the D6 and D12 amplifiers may be remotely controlled and/or monitored using R1. The architecture of R1 allows control of each channel of the amplifier as a single entity and enables the creation of groups of loudspeakers in as little, or as much detail as required by the user. When grouped together, a button or fader can control the overall system level, zone level, equalization and delay, power ON/OFF, MUTE and loudspeaker function switches such as CUT/HFA/HFC or CPL.

R1 has extensive facilities for storing and recalling system settings allowing these to be repeated, as and when required. It is easy to adjust R1 project files for use with a different set of equipment at another location. Password protection is available to restrict access.

R1 runs on PCs operating Microsoft Windows XP SP3/Vista SP1/7[1]. A virtual machine enables R1 to run on the newer Intel[2] Mac[3] in parallel to the Mac OS[3] X, using the Windows driver for R60 USB to CAN interface.

For older, Power PC based Mac computers, Windows emulation needs to be used, together with the R60 driver for Mac/PPC. For R70 Ethernet to CAN, no driver is needed.

All the latest available drivers, R1 example files that can be used as templates and the TI 391 describing the effective use of R1 are available for download at www.dbaudio.com.

R10 Service software

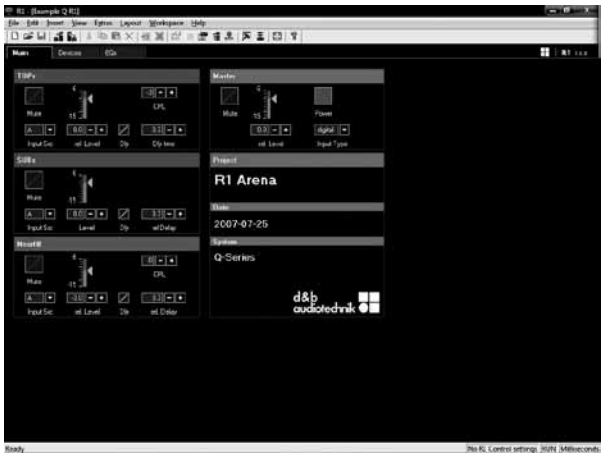
R10 Service software enables the simultaneous firmware update of multiple amplifiers from a central location. Using R10, AmpPresets can be adjusted to the application requirements.

Integration with media control

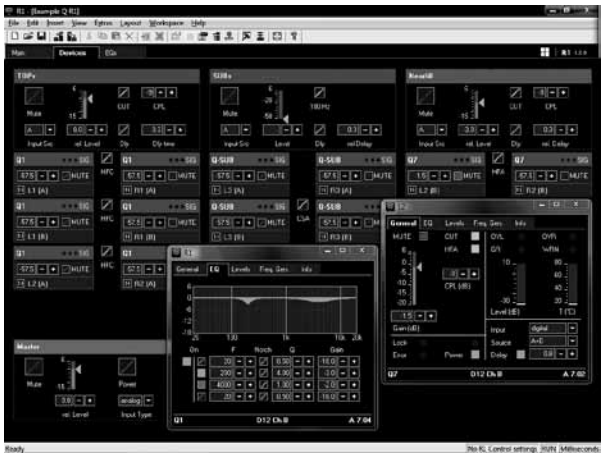
For integration of d&b audiotechnik loudspeaker systems into media control applications, the R70 Ethernet to CAN interface is used. Media control modules (drivers) are available at www.dbaudio.com.

EN 60849 voice alarm applications

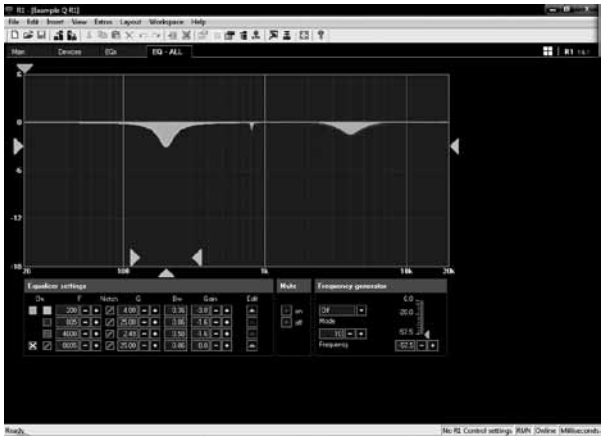
For remote control of voice alarm applications Programmable Logic Controllers (PLCs) can be integrated into the d&b Remote network.



R1 main page, groups and master controls



R1 device page, individual devices, details view and group controls



R1 equalizer page

[1] Microsoft and Windows XP/Vista/7 are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries

[2] Intel is a trademark of the Intel Corporation in the United States and other countries

[3] Mac and Mac OS are trademarks of Apple Inc., registered in the United States and other countries

The Stage monitors product overview

	Code	Description
Loudspeakers	Z1300.002	**MAX12 Monitor EP5** connector
	Z1300.001	**MAX12 Monitor NL4** connector
	Z1100.002	**MAX Monitor EP5** connector
	Z1100.001	**MAX Monitor NL4** connector
	Z1100.012	**MAX Monitor EP5** connector CF4 stud plates
	Z1100.010	**MAX Monitor NL4** connector CF4 stud plates
	Z0820.000	**M6 Monitor EP5** connector
	Z0820.001	**M6 Monitor NL4** connector
	Z0820.002	**M6 Monitor NLT4 F/M** connector
	Z0800.000	**M4 Monitor EP5** connector
	Z0800.001	**M4 Monitor NL4** connector
	Z0800.002	**M4 Monitor NLT4 F/M** connector
	Z0061.020	**M2 Monitor EP5** connector
	Z0061.600	**M2 Monitor NL8** connector
Amplifiers	Z2700.000	**D6 Amplifier NL4** (85 - 285 V)
	Z2600.000	**D12 Amplifier EP5** (115/230 V)
	Z2600.001	**D12 Amplifier NL4** (115/230 V)
	Z2600.300	**D12 Amplifier EP5** (100/200 V)
	Z2600.301	**D12 Amplifier NL4** (100/200 V)
Remote network	Z3000.000	**R1 Remote control software**[1]
	Z3001.000	**R10 Service 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**
Cables	Z2298.xxx	**MC2.5SD Cable EP5** various length
	Z2299.xxx	**MC2.5 Cable NL4** various length
	Z2296.000	**Extension adapter NL4**
	K3118.000	**MC2.5SD Cable** unterminated

[1] available as a download at www.dbaudio.com

The Stage monitors product overview

	Code	Description
Racks	E7211.000	**Touring rack 2 RU, 19"** DD, shock mounted, handles
	E7419.001	**Touring rack 3 RU, 19"** DD, shock mounted, handles, window
	E7420.001	**Touring rack 6 RU, 19"** DD, shock mounted, handles, window, wheels
	E7424.001	**Touring rack 9 RU, 19"** DD, shock mounted, handles, window, wheels
Cases	E7426.000	**Touring case 2 x MAX12** sleeve, moulded speaker profile, wheels
	E7422.000	**Touring case 2 x MAX** sleeve, moulded speaker profile, wheels
	E7437.000	**Touring case 2 x M6** tray, wheels
	E7425.000	**Touring case 2 x M2** door, sleeve, wheels
Accessories	Z5047.000	**MAX12 Horizontal bracket**
	Z5043.000	**MAX Horizontal bracket**
	Z5044.000	**MAX Bracket connector** (supplied in pairs)
	Z5040.000	**Flying stud** black
	E6521.000	**1t Chain 23 links** black, 2 hooks
	Z5057.000	**M6 Flying bracket**
	Z5056.000	**M4 Flying bracket**
	Z5175.000	**Qi Horizontal bracket**
	Z5020.000	**Flying adapter 02**
	Z5025.000	**Flying adapter 03**
	Z5010.000	**TV spigot with fixing plate**
	Z5015.000	**TV spigot** for flying adapter 02
	Z5012.500	**Pipe clamp** for TV spigot
	Z5009.000	**Loudspeaker stand with winder**
	Z5013.000	**Loudspeaker stand winder M20**
	Z5024.000	**Loudspeaker stand adapter**
	Z5048.000	**Flying pin 10 mm**
Misc.	Z5060.000	**Anti-slip coating** 1kg/2.2 lb
	Z5061.000	**Standard cabinet paint** 1 kg/2.2 lb

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