The U7N loudspeaker

- preliminary -



The U7N is a high-performance, 2-way loudspeaker providing exceptional directivity control and electroacoustic efficiency. Suitable for both mobile and installation applications, this point-source networked cabinet represents the next generation of d&b technology and innovation. It features dual 8" drivers in a bipole arrangement with a 1.26" compression driver mounted onto a 80° x 55° horn that can be rotated 90° without an extra tool (patent pending).

The U7N leverages new industrial design and manufacturing techniques for state-of-the-art horn geometry and advanced bass-reflex ports to deliver full bandwidth and extended LF output (55 Hz @ –5 dB).

The U7N loudspeaker provides 55° vertical directivity control starting from 500 Hz, matched with 80° horizontal dispersion.

The U7N supports hybrid topology schemes and accepts either AC or PoE++, as well as both power sources simultaneously, enabling the mixing of passive and networked workflows controlled as one system. A single network cable can supply the loudspeaker with power, signal, remote monitoring and control, and two will provide power and signal redundancy (2x PoE++ and 2x Milan™).

The cabinet is made of highly durable partially recycled ABS. The front is protected by a rigid metal grille and an acoustically transparent foam. The back incorporates two handles and two M8 threated inserts at a spacing of 120 mm (4.7") for attaching d&b rigging hardware designed specifically for either mobile or install applications.

The U7N can be both mounted or flown, and in single-cable operation it can easily be placed where traditional power is not easily available, bringing significant savings in time and infrastructure costs.

When operating on PoE++ U7N can be powered by DN2, the d&b proprietary PoE++ AVB Ethernet switch for a rugged, reliable solution or other 3rd party switches with equivalent performance capabilities and certifications.

System data

Frequency response (–5 dB standard)	55 Hz - 18 kHz
Frequency response (–5 dB CUT mode)	105 Hz - 18 kHz
Frequency response (–10 dB standard, IEC60268)	50 Hz - 20 kHz
Frequency response (–10 dB CUT mode, IEC60268)	75 Hz - 20 kHz
Max. SPL (peak, 1 m, free field, pink noise with crest factor 4)	136 dB

Loudspeaker data

Nominal dispersion angle (hor. x vert.)	80° x 55°
Components	2 x 8" driver with neodymium magnet
	1 x 1.26" exit HF compression driver with 2.4" coil
	Rotatable CD horn
Weight	19.4 kg (42.8 lb)

Milan™ inputs

Device type	Endstation or endstation/bridge (switchable)
Input channel streams	1 stream with up to 8 channels @ 48 kHz
Redundancy	In endstation / redundant mode
Routable Milan™ inputs	M1-4

Analog IN A1 and LINK

IN A1	3 pin XLR female
Maximum input level (balanced/unbalanced)	+24 / +18 dBu
	+27.3 dBu @ 0 dBFS
LINK	3 pin XLR male, parallel to input

Network and PoE connections

Connector type	2 x RJ 45 (etherCON®)
PoE++	single or dual IEEE 802.3bt, Type 4, Class 8
Switch	integrated 2-port, 1 Gbit/s100 Mbit/s
IP modes	AUTO/MANUAL
ETH1/PRI	Milan™, Remote control via R1
ETH2/SEC	
Switched mode	Milan™ Primary, Remote control via R1
Redundant mode	Milan™ Secondary only

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Near Field Communication (NFC)
NFC interface ..... data readout and configuration via N.Control app

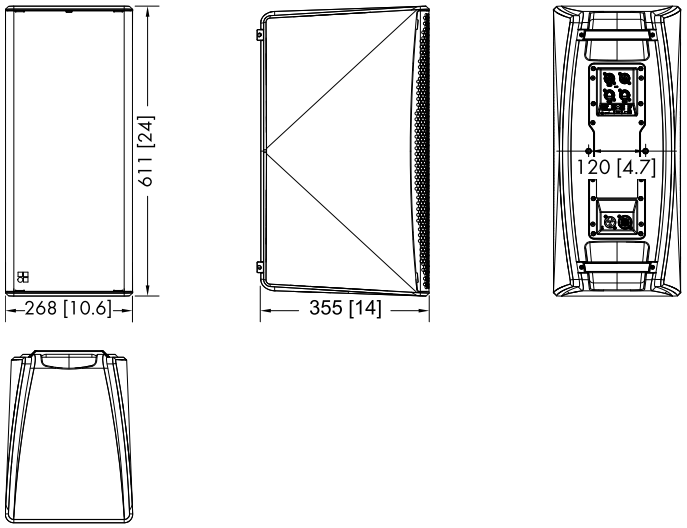
Digital signal processing
System start-up time from AC or PoE ..... < 25 sec.
Time to tone from Standby (AC) ..... < 1 sec.
Time to tone from Standby (PoE) ..... < 1.5 sec.
Latency analog input ..... 1.1 ms
Equalizer ..... 2 user definable 16-band equalizer
..... Filter types: PEQ/Notch/HiShlv/LoShlv/Asym
Delay ..... 1.1 ms to 1 sec.
Frequency generator ..... Pink noise or sine wave 10 Hz to 20 kHz

AC power supply
Switched mode power supply with automatic mains range selection and active Power Factor Correction (PFC).
AC MAINS INPUT/AC LINK .....
..... powerCON® TRUE1 TOP - INPUT and LINK
Mains fuse ..... internal
Rated mains voltage ..... 100 - 240 V, 50 - 60 Hz
Rated mains current ..... 1.6 ... 0.7 A

Power consumption (typical values, AC powered)
Standby ..... 5 W
Idling ..... 16 W
At rated output ..... 130 W

Protection circuits
Mains and power supply AC
Overvoltage and undervoltage, inrush current limiter, internal fuse.
Overvoltage shutdown at ..... 266 V
Overvoltage restart when below ..... 260 V
Undervoltage shutdown at ..... 75 V
Undervoltage restart when above ..... 85 V
Output
Overcurrent, DC offset, pop-noise suppression.
Cooling
Passive, self-resetting overtemperature protection.

Operating conditions
Operating temperature (*continuous/**short-term) .....
..... –10 °C ... +40*/+50** °C (+14 °F ... +104*/+122** °F)
Storage temperature ..... –20 °C ... +70 °C (–4 °F ... +158 °F)
Humidity (rel.), non-condensating ..... < 70 %
Maximum height above sea level ..... 2000 m/6560 ft



U7N cabinet dimensions in mm [inch]

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Architectural specifications
The cabinet shall support hybrid topology schemes and shall accept either AC or PoE++, as well as both power sources simultaneously, enabling the mixing of passive and networked workflows controlled as one system. A single network cable shall supply the loudspeaker with power, signal, remote monitoring and control, while two shall provide power and signal redundancy (2x PoE++ and 2x Milan™).
When operating on PoE++ the cabinet shall be powered by DN2, proprietary PoE++ AVB Ethernet switch for a rugged, reliable solution or other 3rd party switches with equivalent performance capabilities and certifications.
The actively crossed-over 2-way, bipolar loudspeaker shall consist of two 8" low frequency drivers with a neodymium magnet assembly and one 1.26" exit neodymium compression driver with a 2.4" coil mounted to a rotatable CD horn.
The HF horn shall have a nominal dispersion of 80° x 55° (h x v).
The cabinet shall be injection molded and made of highly durable partially recycled ABS.
The drivers shall be protected by a rigid metal grill backed by an acoustically transparent foam.
The rear panel of the cabinet shall incorporate a handle on the top and bottom.
The cabinet rear shall incorporate two M8 threaded inserts at a spacing of 120 mm (4.7") for the secure attachment of dedicated mounting accessories for either mobile or install applications.
The frequency response (–5 dB) measured on axis shall be 55 Hz to 18 Hz with a maximum sound pressure of at least 136 dB.
The dimensions (W x H x D) shall not exceed 268 x 611 x 355 mm (10.6" x 24" x 14") and shall weigh no more than 19.4 kg (42.8 lb).

The loudspeaker shall be the U7N by:
d&b audiotechnik GmbH & Co. KG.

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