PN-PNX Series

power

performance

precision

RENKUS-HEINZ

ADVANCING SOUND. PROVIDING SOLUTIONS.

PN-PNX SERIES

VERSATILE, TWO-WAY LOUDSPEAKER SYSTEMS. SYSTEM INTEGRATION WITH INTERNAL OR EXTERNAL AMPLIFICATION, TRANSPARENT SOURCE REPRODUCTION.

15 YEARS OF SYSTEMS INTEGRATION GO INTO EVERY PN·PNX SYSTEM.

Systems Engineering

PN-PNX Series loudspeakers integrate the entire signal chain, from line level to listener, into compact two-way systems. Breakthrough performance demands it.

Reference Quality

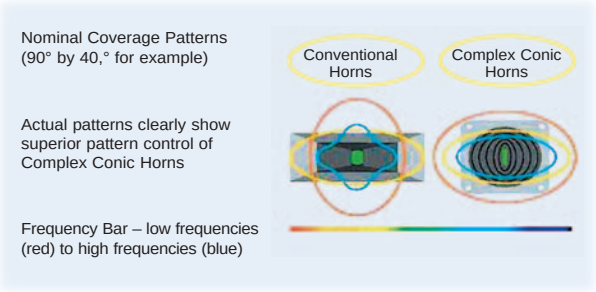
RH engineering starts with exceptional components: advanced transducers developed with the world's leading manufacturers, no-compromise analog and digital electronics, unique Complex Conic horns. Then our painstaking integration process creates transparent systems that reproduce the source without coloration.

Unprecedented Flexibility

We don't believe in constraining your freedom to configure complete, integrated systems. Whether you need a single defined coverage loudspeaker, a Reference Point Array or distributed sources, you can meet the precise needs of your application. Choose PN Series PowerNet loudspeakers for integrated electronics, PNX Series loudspeakers when your system needs external signal processing and amplification.

COMPLEX CONIC: THE NEXT STEP IN HORN EVOLUTION.

Designed around the spherical expansion of the acoustic pressure wave, Complex Conic horns provide constant beamwidth/directivity without the problems of conventional rectangular horns. These unique waveguides eliminate low frequency "pattern flip." Their circular mouths have no corners to cause high frequency "feathering" and the resulting distortion. The results are audible:accurate pattern control, lower distortion and minimal coloration.



THE PN-1 POWERNET AMPLIFIER

Evolved over 25 years of professional sound reinforcement applications experience, the PN-1 is a new kind of intelligent electronics system. Loudspeaker Specific Processing (LSP) gives it the ability to sense when output levels are about to damage the transducer it is driving and to limit voltage and current to safe levels. LSP also tailors the audiophile Class A/B power output for an optimized transfer function. The optional R-Control Remote Supervision Network enables it to keep the operator aware of critical functional parameters, and to execute remote commands. Designed specifically for integration into the loudspeaker enclosure, the PN-1 delivers unsurpassed audio quality, reliability, performance and convenience.

PN-PNX

ADVANCED TECHNOLOGY

REMOTE SUPERVISION AND CONTROL

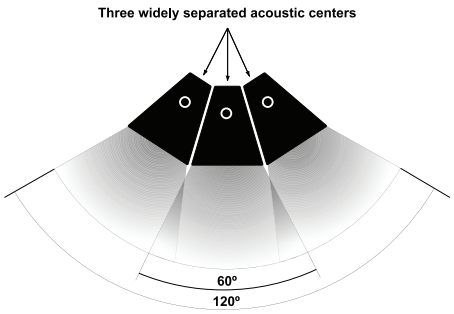
COBRANET CONNECTIVITY

UNPARALLELED VERSATILITY.

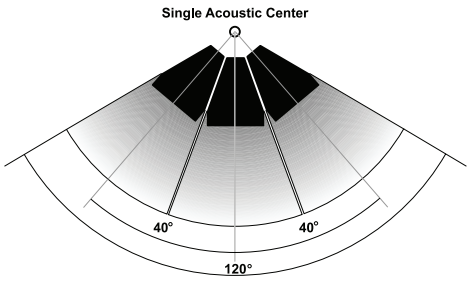
TRAP [TRUE ARRAY PRINCIPLE] DESIGN

No matter how good an individual loudspeaker sounds, once it is used in a conventional array or cluster, interaction with its associated loudspeakers produces undesirable lobing or comb filtering – which creates a profusion of “hot spots” and “dead spots” in the overlap areas and disturbing variations in frequency response from one location to another.

TRAP (True Array Principle) design solves the lobing and comb filtering problems by aligning the acoustic centers of the loudspeakers so they act as a single sound source, even in large arrays. TRAP makes every seat a great seat; no more high frequency “hot spots” or comb filtering.



Conventional loudspeakers (above) can’t help interfering with each other in an array. TRAP designed loudspeakers (below) work together in an array.



RPA (REFERENCE POINT ARRAYS) PLUG ’N PLAY ARRAYS

RPA design is a complex process that integrates and optimizes signal processing, hanging hardware, transducers, horns and enclosures – the entire system – to produce “plug ’n play arrays.”

The result of this painstaking, complex design effort is a range of complete systems that install quickly and act as coherent acoustic sources right “out of the box.” PN and PNX arrays deliver from 80 to 160 degrees of smooth, seamless horizontal coverage. They save hours of installation and trouble shooting time, while delivering results that are superior to “handmade” arrays using conventional components.

R-CONTROL REMOTE SYSTEMS SUPERVISION NETWORK

R-Control, an optional feature of all PN Series PowerNet RPAs and PN102/LA line arrays allows gain control and monitoring of amplifier and loudspeaker performance from a central computer.

Based on Echelon’s LonWorks protocol (ANSI-EIA Standard 790.1) and programmed in Microsoft Visual Basic, R-Control is a powerful tool for the remote management of installed or portable systems. Event Scheduler, Fault Logger, Operator Alerts for critical conditions, Scene Store and Recall and more, make the management of large systems easy.

R-Control circuitry is available as an option with all PN-1 PowerNet amplifiers.

COBRANET DIGITAL AUDIO NETWORK COMPATIBLE

All PN Series self-powered loudspeakers, including the PN102/LA, can also be connected to a CobraNet Digital Audio Network using the Renkus-Heinz CobraNet Breakout Box shown here. Use it to select from up to 64 channels of digital audio delivered via CAT 5 copper or fiber optic cable. It provides 6 analog outputs, eliminating the need for more than one Breakout Box in all but the largest clusters and systems.

With the CobraNet Breakout Box, PN and PNX systems are fully compatible with dozens of CobraNet products from over 20 major pro audio manufacturers.

PN POWERNET:
INTEGRAL ELECTRONICS,
INTELLIGENT CONTROL.

PNX LOUDSPEAKERS:
DESIGNED FOR EXTERNAL AMPLIFICATION.

PN82 PN81 PN61

6 AND 8 INCH PN POWERNET NEAR FIELD LOUDSPEAKERS

Opera box, under balcony, front row: wherever a loudspeaker is the nearest sound source, it's extremely difficult to avoid having it come between the audience and the performance. PN PowerNet models are designed to meet that challenge with audiophile Class A/B amplification, precision processing, high performance transducers and proprietary Complex Conic horns.

MODEL	FREQ (Hz)	DISPERSION (degrees)	SPL RATING (prog/peak)	WxHxD (inches/centimeters)	WEIGHT (lbs./kg)	POWER/ SENSITIVITY
PN61	100 TO 20K	150°H by 60°V	113 / 116 db	7.75 x 15.5 x 10 / 19.7 x 39.4 x 25.4	23 / 10.4	115 V AC 60 Hz or 230 V AC 50/60 Hz 1.4 V Input for Rated Power Output
PN81/9	65 TO 18K	90°H by 60°V	118 / 121 db	10.75 x 19.75 x 11.5 / 27.3 x 50.2 x 29.2	42 / 19.1	
PN81/12	65 TO 18K	120°H by 60°V	118 / 121 db	10.75 x 19.75 x 11.5 / 27.3 x 50.2 x 29.2	42 / 19.1	
PN82/9	60 TO 18K	90°H by 60°V	124 / 127 db	10.75 x 28.5 x 11.5 / 27.3 x 72.4 x 29.2	55 / 24.9	
PN82/12	60 TO 18K	120°H by 60°V	124 / 127 db	10.75 x 28.5 x 11.5 / 27.3 x 72.4 x 29.2	55 / 24.9	

6 AND 8 INCH PASSIVE PNX SERIES NEAR FIELD LOUDSPEAKERS

When you need unobtrusive distributed sound with central power and processing racks, PNX passive loudspeakers deliver professional output levels and reliability. Whether you mount the cabinet vertically or horizontally, rotatable horns let you choose "wide" or "tall" coverage. Passive PNX loudspeakers are available in weather resistant finishes for outdoor applications.

MODEL	FREQ (Hz)	DISPERSION (degrees)	PROG. PWR (watts)	SPL RATING (prog / peak)	WxHxD (inches / centimeters)	WEIGHT (lbs. / kg)
PNX61	100 TO 20K	150°H by 60°V	200	113 / 116 db	7.75 x 15.5 x 10 / 19.7 x 39.4 x 25.4	16 / 7.3
PNX81/9	65 TO 18K	90°H by 60°V	350	119 / 122 db	10.75 x 19.75 x 11.5 / 27.3 x 50.2 x 29.2	30 / 13.6
PNX81/12	65 TO 18K	120°H by 60°V	350	119 / 122 db	10.75 x 19.75 x 11.5 / 27.3 x 50.2 x 29.2	30 / 13.6
PNX82/9	60 TO 18K	90°H by 60°V	700	125 / 128 db	10.75 x 28.5 x 11.5 / 27.3 x 72.4 x 29.2	43 / 19.5
PNX82/12	60 TO 18K	120°H by 60°V	700	125 / 128 db	10.75 x 28.5 x 11.5 / 27.3 x 72.4 x 29.2	43 / 19.5

PN121

PN151

12 AND 15 INCH PN POWERNET TRAP MODULES

The PN121 and PN151 offer reference quality performance and great versatility in a wide variety of applications. The PN151/4 is a true TRAP module and all PN121 models convert easily to TRAP array modules by rotating their horns. TRAP (TRue Array Principle) modules combine seamlessly with adjacent modules to form arrays with virtually no lobing. With simple, error-proof R-Hang flying hardware, PowerNet PN TRAP modules are the building blocks of the "plug 'n play array." There's never been an easier, more effective or smarter way to deliver near-perfect sound.

MODEL	FREQ (Hz)	DISPERSION (degrees)	SPL RATING (prog/peak)	WxHxD (inches/centimeters)	WEIGHT (lbs./kg)	POWER/ SENSITIVITY
PN121/6	55 TO 18K	60°H by 40°V	125 / 128 db	15.5 x 26.5 x 13.75 / 39.4 x 67.3 x 34.9	67 / 30.4	115 V AC 60 Hz or 230 V AC 50/60 Hz 1.4 V Input for Rated Power Output
PN121/9	55 TO 18K	90°H by 40°V	125 / 128 db	15.5 x 26.5 x 13.75 / 39.4 x 67.3 x 34.9	67 / 30.4	
PN151/4	40 TO 18K	40°H by 40°V	125 / 128 db	19 x 29.5 x 18.5 / 48.3 x 74.9 x 47	88 / 39.9	
PN151/6	40 TO 18K	60°H by 40°V	125 / 128 db	19 x 29.5 x 18.5 / 48.3 x 74.9 x 47	88 / 39.9	
PN151/9	40 TO 18K	90°H by 40°V	125 / 128 db	19 x 29.5 x 18.5 / 48.3 x 74.9 x 47	88 / 39.9	

12 AND 15 INCH PASSIVE PNX SERIES TRAP MODULES

The PNX121T/A and PNX151T/A Series loudspeakers are non-powered versions of the PN121 and PN151 Series. They are active loudspeakers offering the absolute best, no compromise performance and versatility. For portable applications, they are normally equipped with “looping” Neutrik connectors, handles, a tripod socket and a durable paint that offers protection against rough handling. Installation models are available with a wide choice of mounting hardware and in weather resistant versions.

PNX121T/A

PNX151T/A

MODEL	FREQ (Hz)	DISPERSION (degrees)	PROG. PWR (watts lo / hi)	SPL RATING (prog / peak)	WxHxD (inches / centimeters)	WEIGHT (lbs. / kg)
PNX121T/6A	55 TO 18K	60°H by 40°V	600 / 80	126 / 129 db	15.5 x 26.5 x 13.75 / 39.4 x 67.3 x 34.9	57 / 25.9
PNX121T/9A	55 TO 18K	90°H by 40°V	600 / 80	126 / 129 db	15.5 x 26.5 x 13.75 / 39.4 x 67.3 x 34.9	57 / 25.9
PNX151T/4A	40 TO 18K	40°H by 40°V	1000 / 150	128 / 131 db	19 x 29.5 x 18.5 / 48.3 x 74.9 x 47	78 / 35.4
PNX151T/6A	40 TO 18K	60°H by 40°V	1000 / 150	128 / 131 db	19 x 29.5 x 18.5 / 48.3 x 74.9 x 47	78 / 35.4
PNX151T/9A	40 TO 18K	90°H by 40°V	1000 / 150	128 / 131 db	19 x 29.5 x 18.5 / 48.3 x 74.9 x 47	78 / 35.4

PN121M/12 & PNX121M/12A

PN121M AND PNX121M HIGH POWER MONITOR LOUDSPEAKERS

The PN121M and PNX121M are versatile floor monitor versions of the trapezoidal PN121T and PNX121T. They feature a multi-angled enclosure design, 120° by 60° Complex Conic horns that can be rotated 90° and a 2" extended range high frequency driver; attributes that make them ideal for a wide range of stage monitor and side/down fill applications.

The PN121M/12 is powered by its self-contained PN-1 PowerNet amplifier. The PNX121/12A is a non powered active loudspeaker intended for use with external bi-amplifiers.

MODEL	FREQ (Hz)	DISPERSION (degrees)	SPL RATING (prog/peak)	WxHxD (inches/centimeters)	WEIGHT (lbs./kg)	POWER/ SENSITIVITY
PN121M/12	55 TO 18K	120°H by 60°V	125 / 128 db	14.25 x 23 x 12 / 36.2 x 58.4 x 30.5	77 / 35	115/230V AC 50/60 Hz/ 14V Input for RPO
PNX121M/12A	55 TO 18K	120°H by 60°V	126 / 129 db	14.25 x 23 x 12 / 36.2 x 58.4 x 30.5	67 / 30.55	Lows: 600W Pgm. @ 8 Ohms Highs: 80W Pgm. @ 8 Ohms

PN112 & PNX112

SINGLE- AND DUAL-12" SUBWOOFERS

These compact single- and dual-12" subwoofers deliver an astonishing amount of punch along with an authoritative bottom. They are easy to hide and can also function as stand bases thanks to their built-in pole sockets.

Renkus-Heinz also offers an extensive line of both powered and non powered 15" and 18" subwoofers. For details, check out our website, www.renkus-heinz.com.

PN212 & PNX212

MODEL	FREQ (Hz)	SPL RATING (prog/peak)	WxHxD (inches/centimeters)	WEIGHT (lbs./kg)	POWER/ SENSITIVITY
PN112-SUB	40 TO 120	123 / 126 db	15.5 x 20.5 x 22.5 / 52.1 x 39.4 x 57.2	82 / 37.2	115/230V AC 50/60 Hz/ 14V Input for RPO
PN212-SUB	40 TO 120	126 / 129 db	32 x 14.5 x 23.25 / 36.8 x 81.3 x 59.1	113 / 51.3	
PNX112-SUB	40 TO 120	125 / 128 db	15.5 x 20.5 x 22.5 / 52.1 x 39.4 x 57.2	72 / 32.7	800W Pgm. @ 4 Ohms
PNX212-SUB	40 TO 120	131 / 134 db	32 x 14.5 x 23.25 / 36.8 x 81.3 x 59.1	103 / 46.7	1600W Pgm. @ 4 Ohms

PN12 AND PN15 RPA'S
POWERNET REFERENCE POINT ARRAYS
PX12 AND PX15 RPA'S
NON-POWERED
REFERENCE POINT ARRAYS

PN15-4 AND PNX15-4 REFERENCE POINT ARRAYS

PN12 (PN121) AND PN15 (PN151/4) REFERENCE POINT ARRAYS

PN12 and PN15 PowerNet Reference Point Arrays (RPA's) are self-contained, fully integrated, network-ready electro-acoustic systems. PN12 and PN15 RPA's provide higher output and wider horizontal coverage than a single loudspeaker, yet are almost as easy to install.

PN12 and PN15 RPA's are built using unique 40° TRAP (TRue Array Principle) modules that combine seamlessly with their adjacent loudspeakers. System Specific Electronics are precisely adjusted for proper phase alignment, uniform response across the entire frequency range and long term reliability. Optional features include R-Control Remote Control and Supervision and CobraNet Connectivity.

The network-ready PowerNet loudspeakers and R-Hang mounting hardware are fully assembled and tested before the array leaves our factory. At the job site, all you need to do is to put the array into place and plug in the signal and power cables. Then walk the room and enjoy flawless array performance.

MODEL	FREQ (Hz)	DISPERSION (degrees)	SPL RATING (prog/peak)	WxHxD (inches/centimeters)	WEIGHT (lbs./kg)	POWER/ SENSITIVITY
PN12/6-2(T)	55 TO 18K	80°H by 60°V	128 / 131 db	29 x 26.5 x 16.5 / 73.7 x 67.3 x 41.9	144 / 65.3	115 V AC 60 Hz or 230 V AC 50/60 Hz 1.4 V Input for Rated Power Output
PN12/6-3(T)	55 TO 18K	120°H by 60°V	130 / 133 db	39.25 x 26.5 x 17.5 / 99.7 x 67.3 x 44.5	219 / 99.3	
PN12/6-4(T)	55 TO 18K	160°H by 60°V	131 / 134 db	45.5 x 26.5 x 21.5 / 115.6 x 67.3 x 54.6	292 / 132.5	
PN15/4-2(T)	40 TO 18K	80°H by 40°V	128 / 131 db	35.5 x 29.5 x 21.5 / 90.2 x 74.9 x 54.6	186 / 84.4	
PN15/4-3(T)	40 TO 18K	120°H by 40°V	130 / 133 db	48 x 29.5 x 22.25 / 121.9 x 74.9 x 56.5	284 / 128.8	
PN15/4-4(T)	40 TO 18K	160°H by 40°V	131 / 134 db	55.5 x 29.5 x 26.75 / 141 x 74.9 x 67.9	372 / 168.7	

PX12 (PNX121) AND PX15 (PNX151/4) REFERENCE POINT ARRAYS

Factory-assembled and tested interconnect cables enable PX12 and PX15 RPA's to deliver integrated system performance with external amplification.

MODEL	FREQ (Hz)	DISPERSION (degrees)	PROG. PWR (watts lo / high)	SPL RATING (prog / peak)	WxHxD (inches / centimeters)	WEIGHT (lbs. / kg)
PX12/6-2(T)	55 TO 18K	80°H by 60°V	1200 / 160	129 / 132 db	29 x 26.5 x 16.5 / 73.7 x 67.3 x 41.9	124 / 56.2
PX12/6-3(T)	55 TO 18K	120°H by 60°V	1800 / 240	131 / 134 db	39.25 x 26.5 x 17.5 / 99.7 x 67.3 x 44.5	189 / 85.7
PX12/6-4(T)	55 TO 18K	160°H by 60°V	2400 / 320	132 / 135 db	45.5 x 26.5 x 21.5 / 115.6 x 67.3 x 54.6	252 / 114.3
PX15/6-2(T)	40 TO 18K	80°H by 40°V	2000 / 300	131 / 134 db	35.5 x 29.5 x 21.5 / 90.2 x 74.9 x 54.6	166 / 75.3
PX15/6-3(T)	40 TO 18K	120°H by 40°V	3000 / 450	133 / 136 db	48 x 29.5 x 22.25 / 121.9 x 74.9 x 56.5	254 / 115.2
PX15/6-4(T)	40 TO 18K	160°H by 40°V	4000 / 600	134 / 137 db	55.5 x 29.5 x 26.75 / 141 x 74.9 x 67.9	332 / 150.6

TRAP [TRUE ARRAY PRINCIPLE]
a unique design innovation
RPA [REFERENCE POINT ARRAY]
a total design solution

THE PHYSICAL FOUNDATION: TRAP [TRUE ARRAY PRINCIPLE] DESIGN

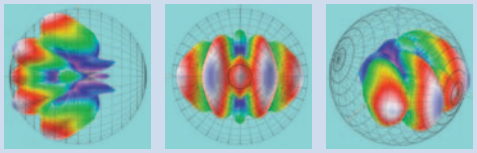
Electronics can improve the performance of any array. But only TRAP (TRue Array Principle) loudspeakers make a single source of sound even in large arrays. Ordinary loudspeakers can't help interfering with each other in clusters, because their acoustic centers are widely spaced. That's why we designed TRAP horns and enclosures to align the acoustic centers. The horn angles are matched to the trapezoidal enclosures, which are designed to place the drivers as close together as physically possible. All sound originates in the same spot, so interference between adjacent horns is practically eliminated. Arrays of TRAP loudspeakers produce a phase aligned wavefront with uniform frequency response across the coverage area. Below the horn's cutoff frequency, RPA signal processing eliminates low frequency interference and can improve pattern control. The result is great sound at every seat.

THE PLUG 'N PLAY ARRAY: RPA [REFERENCE POINT ARRAY] INTEGRATION

Using either self powered loudspeakers or external electronics and pre-configured cabling, RH Engineering's RPA design process integrates the entire system – even the hanging hardware – to produce "plug 'n play arrays" that act as a single broad-band acoustic source. In our test center, we optimize the entire signal chain from line level to listener, adjusting crossover, equalization, delay and limiting parameters for each Reference Point Array. We also configure hardware and cabling assemblies to ensure precise loudspeaker placement and correct signal flow. The result of this painstaking, complex design effort is a range of complete systems that install quickly and act as coherent acoustic sources "out of the box." PN and PX arrays deliver from 80° to 160° of smooth, seamless horizontal coverage. They will save you hours of installation and troubleshooting time, while delivering results that are superior to "handmade" arrays using conventional components.

CONVENTIONAL CLUSTER COVERAGE

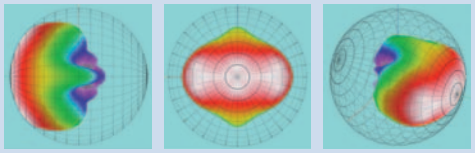
Overhead View | Front (on axis) View | 3-D View



IN CLUSTERS, CONVENTIONAL LOUDSPEAKERS CAN'T HELP INTERFERING WITH EACH OTHER.

TRAP (TRUE ARRAY PRINCIPLE) CLUSTER COVERAGE

Overhead View | Front (on axis) View | 3-D View

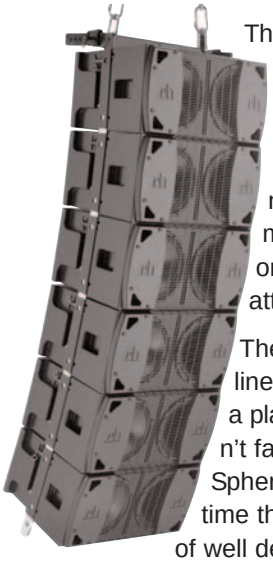


TRAP LOUDSPEAKERS WORK TOGETHER TO PRODUCE A COHERENT WAVEFRONT.

ADVANCED AUDIO TECHNOLOGY
ISOPHASIC PLANE WAVE GENERATOR
PATH LENGTH EQUALIZATION

A FEW WORDS ABOUT LINE ARRAYS AND ISOPHASIC PLANE WAVE GENERATION

Line Arrays offer a solution to the acoustical problems posed by highly reverberant spaces and to the need for high output devices that can cover a large, deep area without “tearing the heads off” those seated or standing in the front row.



The stacking of multiple loudspeakers in a vertical line array compresses the loudspeaker’s normal 40 or 60 degree vertical dispersion into a flat pie shaped sound wedge having very narrow vertical dispersion. This means more of the sound can be directed onto the audience, a highly desirable attribute in reverberant spaces.

The compressed (flattened) output of line arrays takes on the characteristics of a plane wave and the sound level doesn’t fall off nearly as fast with distance. Spherical sound waves fall off 6 dB every time the distance doubles while the output of well designed line arrays falls off far more slowly with distance.

This line array effect, the narrowing vertical dispersion and the slower sound level fall off, is dependent upon the individual loudspeakers coupling together so they act as one. This coupling is fairly easy to achieve at low frequencies because of the relatively long wave lengths involved, but becomes increasing difficult at the higher frequencies as the wave lengths become shorter and shorter. The solution is to convert the output of the high frequency transducers into a plane wave before they leave the loudspeaker enclosure so they will couple coherently with the other high frequency transducers.

The Isophasic Plane Wave Generator with its Path Length Equalization Technology is the answer. It assures a flat (planar) wave front that couples seamlessly with the other high frequency transducers.

The horizontal dispersion of line array designs tends to narrow through the mid-range transition from the woofers to the high frequency section. The PN102/LA and PNX102/LA’s Acoustic Diffraction Baffle solves this problem by providing diffraction loading through this critical region.

The result is a line array that performs as a true line array across the entire frequency spectrum and delivers outstanding performance.

PN102/LA AND PNX102/LA LINE ARRAY MODULES

The PN102/LA and PNX102LA are the basic building blocks for PN and PNX Series Line Arrays. Both feature dual 10" woofers and dual 1" high frequency drivers, the unique Isophasic Plane Wave Generator and its associated Path Length Equalization Technology developed by Renkus-Heinz engineering and an Acoustic Diffraction Baffle. The PN102/LA is a self-powered PowerNet loudspeaker and includes a PN-1 amplifier.

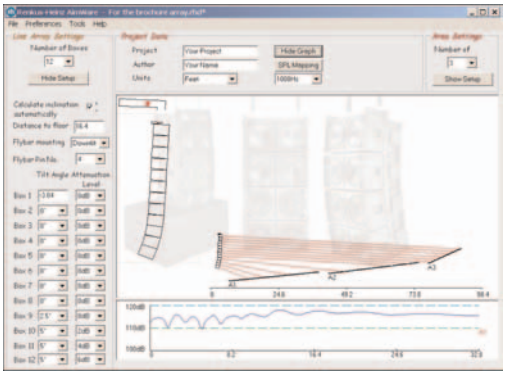
The PNX102/LA is a non-powered active loudspeaker designed for use in biampli-

MODEL	FREQ (Hz)	DISPERSION (degrees)	SPL RATING (prog / peak)	WxHxD (inches / centimeters)	WEIGHT (lbs. / kg)	POWER SENSITIVITY
PX102/LA	60 TO 18K	150°H by *see below	129 / 132 db	23.75 x 12 x 16 / 60.3 x 30.5 x 40.6	82 / 37.2	115/230 V AC 50/60 Hz 1.4 V Input for RPO
PNX102/LA	60 TO 18K	150°H by *see below	130 / 133 db	23.75 x 12 x 16 / 60.3 x 30.5 x 40.6	72 / 32.7	Lows: 400 W Pgm. Mid/Highs: 200 W Pgm.

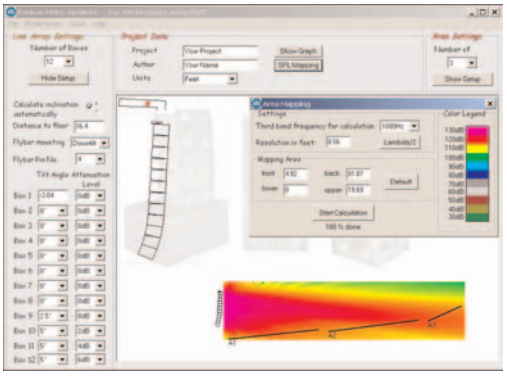
*Vertical dispersion is a function of array design.

ARRAY AIMING SOFTWARE

SPEEDS SYSTEM DESIGN
ELIMINATES ERRORS
REDUCES INSTALLATION TIME



Aimware display showing the aiming angles and projected SPL levels.



Aimware display with graphical SPL display.

R-H AIMWARE ARRAY AIMING SOFTWARE

The versatility of line arrays present the system designer with a number of choices that need to be made. How many cabinets will be needed to obtain the desired coverage and SPL levels? Which array configuration will provide the best coverage and performance, a straight line array, a curved array or a “J” array? What suspension (aiming) angle will work best?

Renkus-Heinz AimWare answers these questions and takes all the guesswork out of Line Array design and installation.

With AimWare, you can quickly and easily decide how many PN102/LA or PNX102/LA Line Array loudspeakers will be needed to achieve the desired coverage and SPL levels, and whether they should be configured as a straight line array, a curved array or as a “J” array. AimWare also enables you to determine the ideal mounting height and the correct hanging points for the array.

The final configuration can be saved for future reference or for import into EASE JR 4.1 or EASE 4.1.

Renkus-Heinz AimWare line array aiming software is available for free download at www.renkus-heinz.com.

PN102/LA AND PNX102/LA—EASY TO ASSEMBLE AND USE

The PN102/LA and PNX102/LA are equally at home in both permanent installations and in portable applications.

Sturdy metal tie bars and quick disconnect pins allow straight, curved and “J” arrays from 6 to 12 PN/PNX102/LA modules to be quickly and easily assembled with metal-to-metal reliability and safety. They provide 3 splay angles between 0 and 5 degrees, making the construction of straight, curved and “J” arrays a simple matter.

A versatile Fly Bar attaches easily to the top cabinet using quick-disconnect pins. It provides a choice of suspension (aiming) points and supports up to twelve PN102/LA or PNX102/LA cabinets.

Up to four cabinets can be stacked quickly and safely and easily moved about using the associated 102 Dolly.

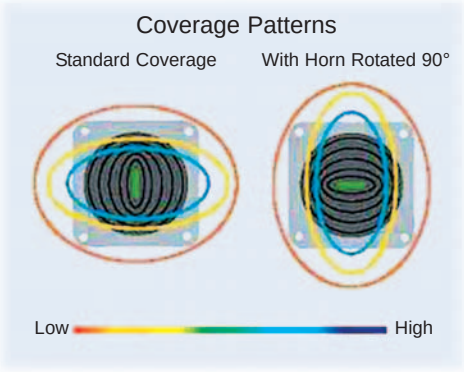
MATCHING SUBWOOFERS

Renkus-Heinz also offers an extensive line of both powered and non-powered 12," 15" and 18" subwoofers. For details, check out our free configurator software or our website www.renkus-heinz.com.

ROTATING HORNS

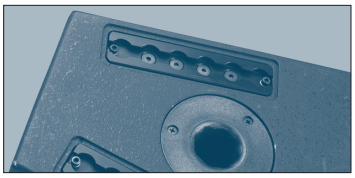
PN and PNX Series Complex Conic horns (except for those used in the PN151/6 or /9 and PNX151T/6A or /9A) can easily be rotated 90 degrees within the enclosure, allowing the loudspeaker to be mounted either horizontally or vertically. We'll do this at our factory at your request, or you can rotate the horn in the field to accommodate unexpected installation changes simply, cost effectively and conveniently.

In portable applications, you can fly PN and PNX Series loudspeakers horizontally one night and use them on tripod stands the next, just by rotating the horn.

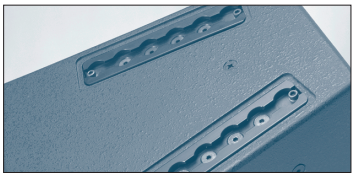


PORTABLE OPTIONS

All portable PN•PNX models include tripod sockets and looping (in and out) Neutrik 4-pin SpeakOn connectors. Handles are also provided, except for the ultra-compact PN61 and PNX61 models.

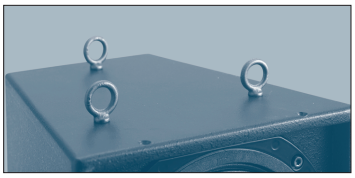


AeroQuip Fly-track is another popular option available on all models except for the PN61 and PNX61.



INSTALLATION OPTIONS

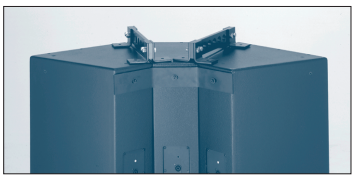
Installation models are normally provided with twelve 1/4-20 attachment points which allow the enclosures to be easily flown in any plane using eye bolts.



U-brackets are another option on all models except for the PN151 and PNX151.

For wall or ceiling mounting applications, Omnimount nut-plates and mounting hardware are available on all models.

R-Hang array mounting hardware is available for all 2, 3, and 4 wide PN and PX "121" and "151" arrays.



FINISHES

The standard PN and PNX Series finish is flat black. Optional finishes include white, "natural" ready-to-stain (sanded, unfinished). Custom colors are also available to match any decor.

WEATHER RESISTANT

Externally powered PNX Series loudspeakers are also available with weatherized woofer cones and connectors, in weather resistant fiberglass or Tufftex Elastomer finishes that are practically impervious to the elements.

Our **System Configurator** is available on our website, www.renkus-heinz.com, by selecting the Customize/Place Order button.

The **System Configurator** takes the guesswork out of designing or ordering single loudspeakers or loudspeaker arrays. The program walks you through each design choice, clarifying options that are available, and ensuring that when you are done the resultant design/order is complete and accurate.

SYSTEM SPECIFIC ELECTRONICS

FASTER SETUP, SUPERIOR PERFORMANCE,
LONG TERM RELIABILITY.

SYSTEM SPECIFIC ELECTRONICS

Whether it's the PN-1 PowerNet amplifier inside our PN Series Loudspeakers or external rack mounting devices, making the signal chain System Specific means measuring and adjusting critical parameters to maximize the performance of single loudspeakers or multi-element Reference Point Arrays Arrays. For RH Engineering, it's a time-consuming, data-intensive process. But the results are worth it.

The PN-1 Intelligent Amplifiers built into PN PowerNet loudspeakers include System Specific EQ and protection circuitry. The same tight system integration is available for externally powered PNX Series loudspeakers. Loudspeaker specific Processor Modules plug into our X Series rack-mounting analog controllers. They provide complete individual loudspeaker output protection and optimization.

X24 Dual channel, 2-way analog controller
X14 Single channel, 4-way analog controller
X12 Single channel, 2-way analog controller

For room equalization, delay and other commissioning or setup functions, the D26A Digital Controller provides two-in, six-out processing with comprehensive EQ, crossover, delay and limiting functions. The D26A can be controlled via MIDI or RS232 from SMAART LIVE's dual-FFT EQ window, so that critical parameter values can be quickly and precisely "dialed-in."

D26A Digital Controller

COBRANET CONNECTIVITY

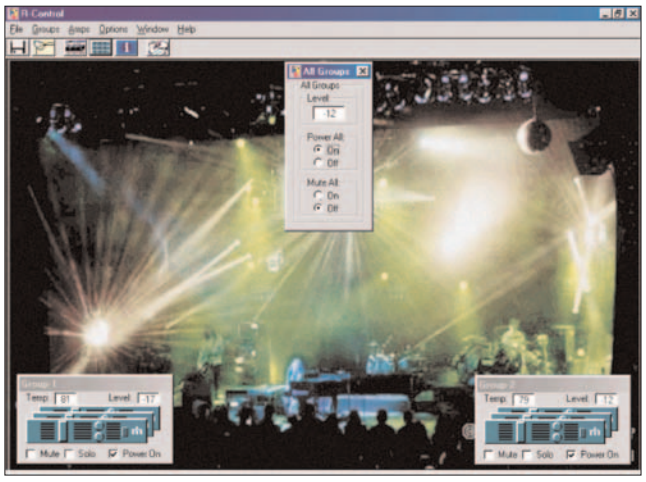
All PN Series PowerNet loudspeakers can be connected to a CobraNet Digital Audio Network using a Renkus-Heinz CobraNet Breakout Box that allows selection from up to 64 channels of high-resolution digital audio. The same CobraNet Breakout Box also permits the external amplifiers used with non-powered PNX Series loudspeakers to be connected to the CobraNet Network.

CobraNet Breakout Box

R-CONTROL REMOTE CONTROL AND SYSTEM SUPERVISION

The R-Control Remote System Supervision Network is based on Echelon's LonWorks® protocol (ANSI/EIA standard 7901). Real-time impedance monitoring, Event Scheduler, Fault Logger and Scene Store/Recall and AMX control interface make R-Control a powerful tool for remote management of installed or portable sound systems.

R-Control plug-ins are available for all PN-1 PowerNet amplifiers.



Working together, there's no problem we can't solve, no schedule we can't meet, no project we can't take to a higher level of excellence, from the White House to the Olympic SuperDome, from corner churches to major metropolitan concert halls. Much as we love technology, our greatest satisfaction comes through helping people communicate through music, dance, theater, or the power of a new idea brilliantly expressed. When we make those kinds of connections, there's nothing more exciting – or more powerful.

Here are some of the unique technologies we use to help people communicate:

Patented CoEntrant Topology integrates midrange and high frequency drivers into wideband point sources.

Complex Conic Topology, the first new approach to horn design in decades, has proven its superior performance worldwide.

TRAP (TRue Array Principle) design aligns acoustic centers so loudspeaker clusters produce coherent output.

Reference Point Array engineering optimizes the entire signal chain from line level to listener for unprecedented performance.

System Specific Electronics integrate pre-configured signal processing and protection with high performance amplifiers.

The R-Control Remote System Supervision Network is based on Echelon's LonWorks® protocol (ANSI/EIA 7091).

PowerNet Series loudspeakers incorporate System Specific Electronics and can be upgraded for R-Control remote operation.

EASE, EASE JR and EARS are the industry standard modeling programs for acoustic environments and sound system performance.

CobraNet routes 64 channels of 20-bit digital audio over CAT 5 copper or fiber optic cable using Ethernet protocols.

For more information on the latest integrated sound reinforcement innovations from R-H Engineering, visit us on our website. www.renkus-heinz.com.

RENKUS-HEINZ
ADVANCING SOUND. PROVIDING SOLUTIONS.

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