



RENKUS-HEINZ

Reference Point Arrays

TRAP JR Horizontal RPA's



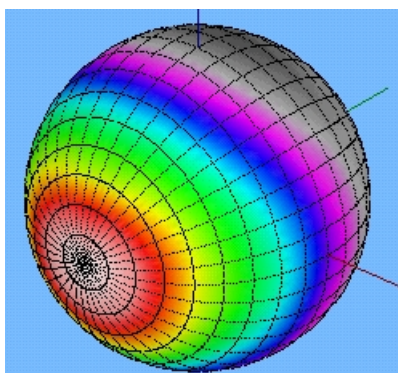
INTEGRATED SYSTEMS ENGINEERING

We engineer and manufacture everything from signal processors to amplifiers to waveguides, enclosures, transducers - even hardware. We've patented innovations in many of these areas. But reinforcement's next major step closer to reality will be the development of total systems, not just refined components.

Reference Point Arrays reflect this approach. From line level to listener, every element of these complex multi-element arrays has been engineered to work as an acoustical point source.

A Foundation in Physical Acoustics

Our unique set of acoustical solutions includes the TRue Array Principle that aligns acoustic centers within the array



Complex Conic Waveguide Technology provides consistent pattern control.

to virtually eliminate destructive interference. Complex Conic Waveguide technology combines constant beamwidth/directivity without the problems of conventional rectangular horns. They offer extended pattern bandwidth, lower distortion and minimal coloration. In other words, Complex Conic Waveguides work

better and sound more natural than ordinary horns.

TOTAL PERFORMANCE ENGINEERING

Each RPA is designed, assembled, measured and installed as both a multi-element system and an acoustical point source

POINT SOURCE SYSTEMS

Coherent topologies such as TRAP work with signal processing solutions like TriPolar to turn complex arrays into point sources

REFERENCE QUALITY OUTPUT

By engineering all system components to work together, RPAs bring reinforcement a quantum leap closer to reality

FASTER SPECIFICATION, ORDERING, INSTALLATION

RPAs are modelled, ordered, assembled, tested, shipped and installed as complete acoustical units

FOCUS ON PERFORMANCE, NOT PROBLEMS

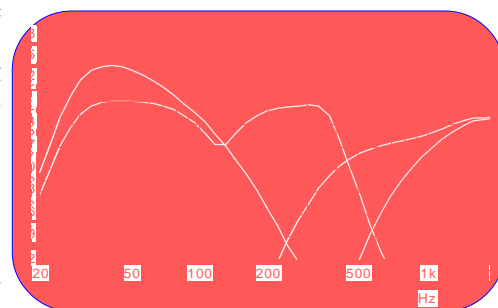
Commissioning an RPA-based system means optimizing the listening experience, not tracing down faults to deliver the basic functionality of sound reinforcement

ADVANCED ELECTRONICS

Acoustical topologies such as TRAP depend on horns. As wavelengths become longer, physical pattern control using horns becomes impractical. Renkus-Heinz engineers apply sophisticated signal processing to control low frequencies. Our unique TriPolar process delivers individually shaded signals to three woofers using interference effects to provide vertical pattern control below 300 Hz and keep low frequencies from spilling onto the stage. We have developed similar techniques to minimize interference in the horizontal plane and extend the pattern bandwidth of tight-packed arrays.

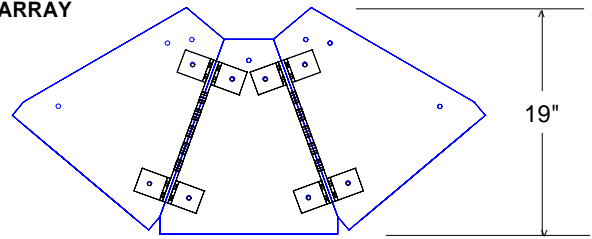
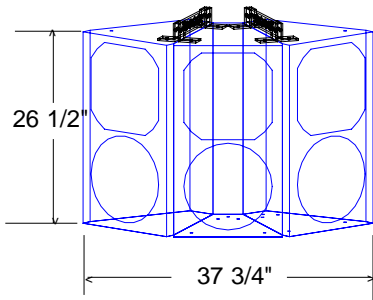
Total Performance Design

To reach new reference points in array performance, Renkus-Heinz engineers design each RPA as a total system. Loudspeaker Specific Processor modules that monitor output are integrated into each System Specific Power Amplifier, so each channel can have a unique transfer function. The signal path is defined by a pre-engineered wiring harness, and source locations are fixed by purpose-designed R-Hang hardware. The entire system is designed, built, ordered and installed as one unit. Remote Signal Processing is provided by our D26A DSP unit, which allows integration of delays and downfills. R-Control Remote Supervision network hardware and software is available to simplify operation.



Frequency shading eliminates LF lobing

**TJ3K(T)
REFERENCE POINT ARRAY**

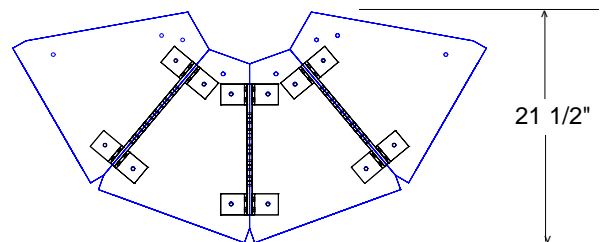
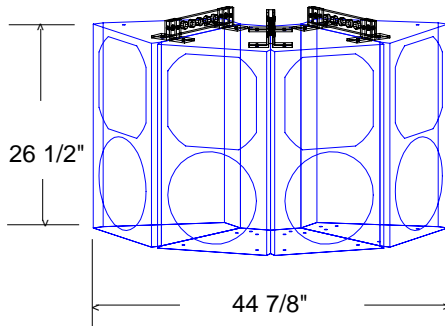


A complete "pre-engineered" TJ3K(T) TRAPJR Array consists of:

- 3 TRAPJR/6K full-range loudspeakers
- 1 P3500 Amplifier
- 1 PK-172-A P3500 Controller module
- 1 TJ3-RHANG Hanging hardware
- Interconnecting cables, system preparation & testing

Horizontal Dispersion: 120°
 Vertical Dispersion: 60°
 Maximum SPL:
 Program: 131 dB
 Peak: 134 dB
 Weight:
 Without hardware: 189 Lbs.
 With hardware: 233 Lbs.

**TJ4K(T)
REFERENCE POINT ARRAY**

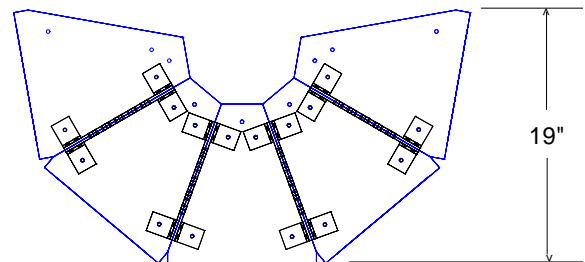
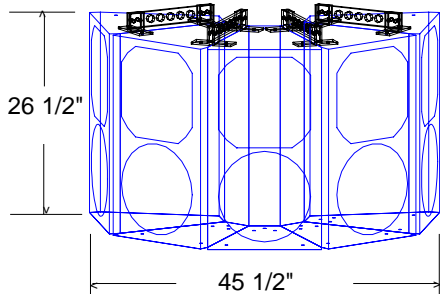


A complete "pre-engineered" TJ4K(T) TRAPJR Array consists of:

- 4 TRAPJR/6K full-range loudspeakers
- 1 P3500 Amplifier
- 1 PK-173 P3500 Controller module
- 1 TJ4-RHANG Hanging hardware
- Interconnecting cables, system preparation and testing

Horizontal Dispersion: 160° Horizontal
 Vertical Dispersion: 60° Vertical
 Maximum SPL:
 Program 132 dB
 Peak 135 dB
 Weight:
 Without hardware: 252 Lbs.
 With hardware: 315 Lbs.

**TJ5K(T)
REFERENCE POINT ARRAY**



Complete "pre-engineered" TJ5K(T) TRAPJR Array consists of:

- 5 TRAPJR/6K full-range loudspeakers
- 1 P3500 Amplifiers
- 1 PK-174-A P3500 Controller module
- 1 TJ5-RHANG Hanging hardware
- Interconnecting cables, system preparation and testing

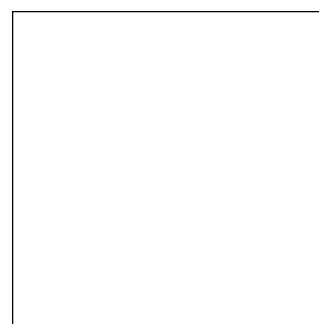
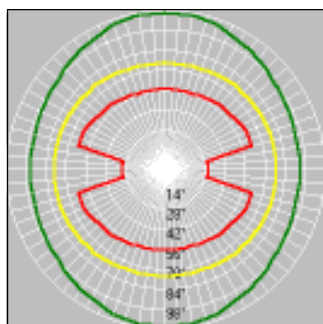
Horizontal Dispersion: 200°
 Vertical Dispersion: 60°
 Maximum SPL:
 Program: 133 dB
 Peak: 136 dB
 Weight:
 Without hardware: 315 Lbs.
 With hardware: 400 Lbs.

TJ3K(T)

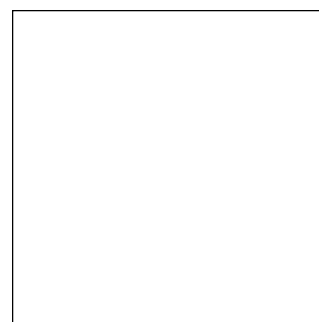
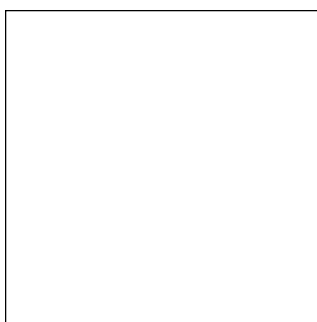
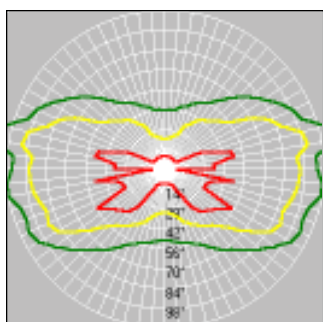
TJ4K(T)

TJ5K(T)

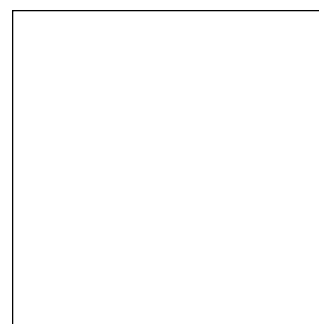
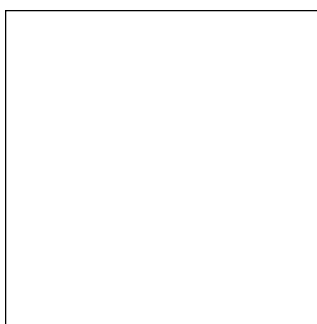
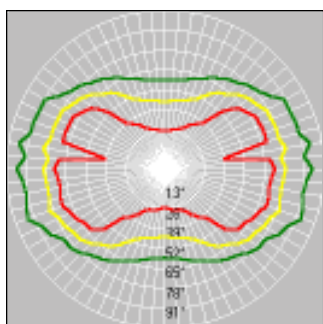
500 Hz



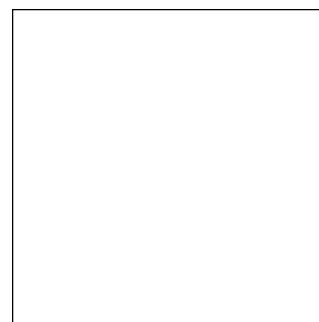
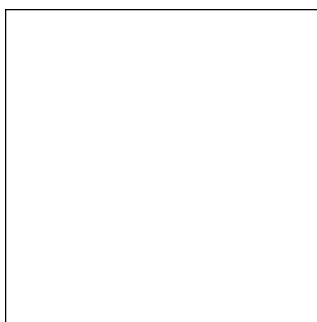
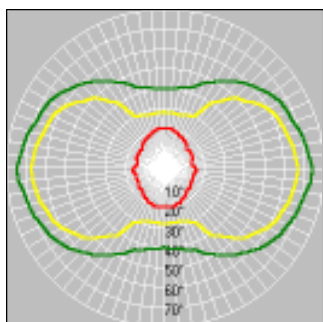
1000 Hz



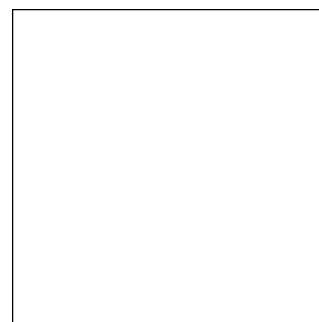
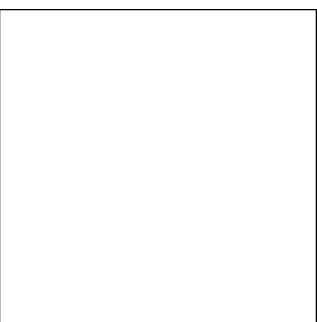
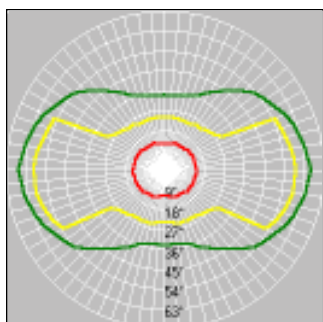
2000 Hz



4000 Hz



8000 Hz



TECHNICAL SPECIFICATIONS

All specifications are with loudspeaker specific processing

TRAPJR/6K LOUDSPEAKER

SENSITIVITY:	99 dB (1w/1m) @ 300 Hz
MAXIMUM PROGRAM SPL:	127 dB pgm, 130 dB peak
DISPERSION:	40° H by 60° V
FREQUENCY RESPONSE:	50 Hz to 18,000 Hz
HIGH FREQUENCY DRIVER:	1" SDA202-8 driver, 40 W RMS at 8 Ohms, 80 W program.
LOW FREQUENCY DRIVER:	12" SSL15-8K woofer, 300 W RMS at 8 Ohms, 600 W program.
CROSSOVER POINT:	1600 Hz
ENCLOSURE	13 ply hardwood, heavily braced with perforated metal grille and moisture resistant foam insert
CONNECTORS:	Neutrik 4-pin
FINISH OPTIONS:	Black, white or custom color paint, natural, weather resistant
DIMENSIONS:	26 1/2" H x 14 3/4" W x 16 1/4" D (67.3 cm x 42.2 cm x 59.1 cm)
NET WEIGHT:	63 Lbs.

P 3500 AMPLIFIER

OUTPUT RATINGS:	500 w/ch at 8 Ohms 750 w/ch at 4 Ohms 900 w/ch at 2 Ohms 1500 Watts, 4 Ohms bridged
FREQUENCY RESPONSE:	+0.0, -5 dB, 20 Hz to 20 kHz @ RPO
THD (at 1kHz) DISTORTION:	< 0.1% at RPO (4 Ohms)
SMPTE IMD:	< 0.2 %, 500 w at 8 Ohms
HUM & NOISE:	-100 dB (referred to RPO @ 8 Ohms,
CROSSTALK:	> 60 dB @ 400 Hz
INPUT SENSITIVITY:	1.5 V for RPO (at 8 Ohms)
INPUT IMPEDANCE:	20 K Ohms, balanced
VOLTAGE GAIN:	42
SLEW RATE:	> 35 v/usec
DAMPING FACTOR:	>100 for loads of 2 Ohms or greater, 20 Hz to 20 kHz
MAX. VOLTAGE SWING:	+/-105 V Peak @ 8 Ohms RPO
POWER REQUIREMENTS:	100/120 VAC, 50/60 Hz (Dom.) 200/230 VAC, 50/60 Hz (Export) (1440 VA)

ARCHITECTS' AND ENGINEERS'S SPECIFICATIONS

The loudspeaker cluster shall be a Renkus-Heinz Model {TJ3K(T)} {TJ4K(T)} {TJ5K(T)} or approved equal pre-engineered RPA array providing true point source performance.

The loudspeaker cluster shall include (3)(4)(5) Renkus-Heinz TRAPJR/6K loudspeakers and all necessary hanging hardware.

Each loudspeaker shall consist of an extended-range 1" HF driver coupled to a single Complex Conic high frequency waveguide plus a heavy-duty 12" woofer, all mounted in a 40° trapezoidal enclosure. The woofer shall have a 4" edge wound voice coil and a Kevlar reinforced fiber cone. Each loudspeaker shall include a built-in crossover having a 600 Watt program power rating at 8 Ohms and provide 40° H x 60° V coverage.

Sensitivity shall be no less than 98 dB @ 1w,1m with a maximum SPL of at least 127 dB and a frequency response of 50 Hz to 18 kHz.

The enclosure shall be trapezoidal in shape and constructed from 13 ply hardwood, heavily braced and lined with fiberglass to suppress resonances. It shall be no larger than 26 1/2" high and 14 3/4" wide, be no deeper than 16", and weigh no more than 63 Lbs. A matching perforated metal grille backed with protective foam shall be included. The finish shall be (black carpet) (black paint) (white paint) (natural) (weather resistant). Connectors shall be 4-pin Neutrik.

The loudspeaker array shall be equipped with factory pre-engineered flying hardware, Renkus-Heinz model (TJ3-RHANG) (TJ4-RHANG) (TJ5-RHANG).

Power for the array shall be provided by a Renkus-Heinz P3500 amplifier equipped with an appropriate PK-A loudspeaker controller modules.

The power amplifier shall have an FTC output power rating of at least 750 Watts per channel into 4 Ohm loads (900 Watts into 2 Ohms) at less than 0.25% THD from 20 Hz to 20 kHz. Overall frequency response shall be within + 0.0 dB, - 0.5 dB over the same frequency range at all power levels up to rated power output. Hum and noise level shall be at least -100 dB referred to RPO @ 8 Ohms.

Binding posts and a 4-pin Neutrik connector shall be provided for output connections. Input connectors shall be 3-pin XLR type. Front panel controls shall include the input level attenuators and power on/off switch.

The plug-in controller modules shall be calibrated to match the equalization, protection and delay requirements of the associated loudspeaker array. They shall provide separate fourth-order, 24 dB per octave crossovers, low frequency signal delay circuitry, and protective circuitry for the associated loudspeakers. The protective circuits shall be designed to prevent damage to the loudspeakers from overheating (thermal overload), from over-exursion and from high-level transients].



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