

Musical Sound For Imposing Spaces

Iconyx arrays are the first solution to combine digital control and steering with exceptional audio fidelity. They integrate high-performance acoustical components, advanced audiophile-quality digital electronics and powerful software in practical, modular systems that virtually disappear in most applications.

Hundreds of installations around the world have proven that Iconyx digitally steerable arrays enable both effective communication and expressive musical artistry, even in highly reverberant acoustical environments.

Third generation Iconyx IC-R-II series arrays feature further refined signal processing algorithms and purpose-designed coaxial transducers with three HF dome tweeters and provide even more clarity, musicality and intelligibility. Configuration presets and many other user requested features add to their versatility and ease of use.

Transparent Solutions

- Houses of Worship: traditional & modern
- Transportation terminals: train stations, airports, etc.
- Stadiums & arenas: lobbies & fore courts
- Convention centers, warehouses, etc.
- Museums: lobbies, galleries, etc.
- Performing arts centers: vocal/orchestral “lift,” lobbies, etc.
- Any highly reverberant environment where enjoyable music and/or intelligible speech are as important as the architectural design

MUSICAL • INTELLIGIBLE • PRACTICAL

“Array Within An Array” Triple Tweeter Design

Iconyx IC-R-II arrays use multichannel high-current digital amplifiers to power advanced, purpose-designed coaxial transducers, each one with its own triple tweeter high frequency array. The triple tweeter “array within an array” design reduces the distance between high frequency sources for greatly improved high frequency performance with consistent broad horizontal dispersion.

RHAON Audio Operations Network

RHAON brings a new level of control and flexibility to Iconyx installations. Straightforward network connections empower multi-channel digital audio distribution, user-controlled DSP, user-selectable presets and comprehensive remote system management and control – all using standard Ethernet hardware and cabling.

Configuration Presets

Iconyx IC-R-II series arrays can store up to 10 different setup configuration presets in their digital memory and easily recall them from either the amplifier control panel, the controlling computer or from a third party controller.

Flexibility & Power

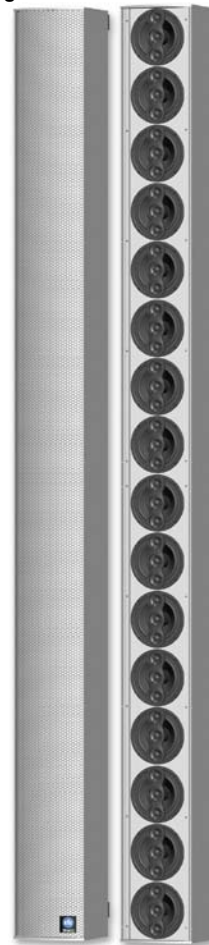
Iconyx technology gives sound system designers the power to cover almost any audience area perfectly. Multiple sonic beams can be individually shaped and aimed from a single Iconyx array using the software-controlled DSP: up to 8 beams on an IC16-R-II. The acoustic center of the array can also be raised or lowered electronically, because all array elements are identical and equidistant.

Digitally Steerable Loudspeaker Array System



IC16-R-II IC16/8-R-II

- Proven Performance
- Coaxial Transducers with Triple HF Tweeters in an “Array Within an Array” Design
- Multiple Configuration Presets
- Slim, Architecturally Pleasing Design



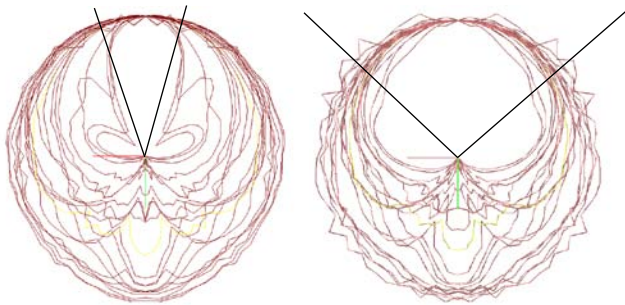
Natural Speech, Enjoyable Music

Communication is about more than consonants – meaning is conveyed by the tone of voice as well as the text. We also believe that beautiful spaces deserve beautiful music. That’s why Iconyx IC-R-II arrays use an audiophile-quality multi-channel amplifier to drive purpose-designed coaxial transducers with triple HF tweeters. The three tweeters are aligned vertically and act as an “array within an array” to better control vertical directivity at higher frequencies.



Coaxial transducer with triple tweeters developed specifically for Iconyx

The vertical alignment maintains consistently broad horizontal dispersion, allowing each Iconyx array to cover a wider section of the audience.

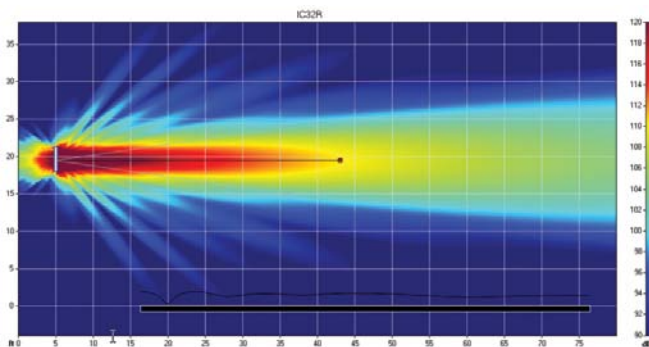


Conventional Transducer

Coaxial Transducer

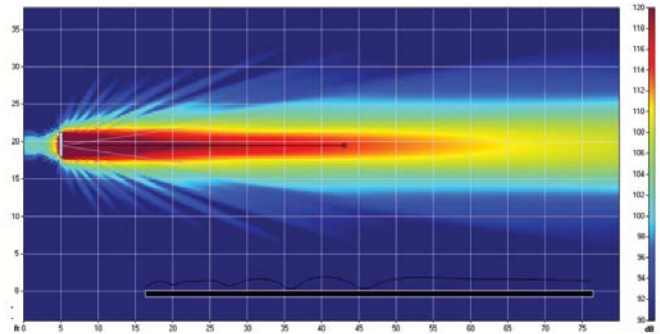
Coaxial transducers with triple tweeters provide more consistent horizontal coverage, broader HF beamwidth

The three tweeter “array within an array” design also produces a more coherent high frequency output with greatly reduced grating lobes. Notice the tight vertical control and minimal grating lobes in the graphic shown below.



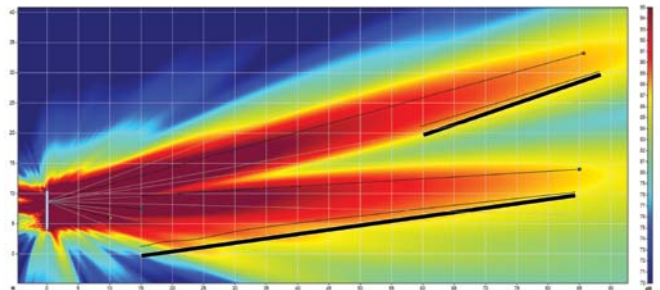
BeamWare display of an Iconyx array at 2 kHz illustrating the reduced grating offered by Iconyx IC-R-II arrays with their improved algorithms and evenly spaced triple dome HF tweeters.

The graphic below shows that the tight beam control continues as the frequency increases.



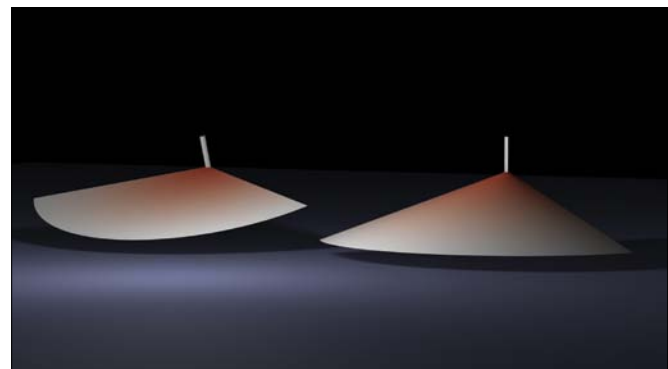
BeamWare display of an Iconyx array at 4 kHz illustrating the reduced grating offered by Iconyx IC-R-II series arrays with their improved algorithms and evenly spaced triple dome HF tweeters.

Iconyx IC-R-II arrays are also capable of producing and controlling multiple acoustic beams.



BeamWare display showing the multi-beam capabilities of Iconyx arrays

The digital steering used in Iconyx IC-R-II arrays produces an “umbrella” polar pattern: the steering works in all directions, not just along the lobe’s axis. This reduces the amount of energy bouncing off the side walls. The end result is more direct sound and less reflected energy; the classic recipe for superior intelligibility.



Compared to passive column arrays (left) Iconyx arrays (right) deliver an “Umbrella” of sound

Expandable Modular Systems

To suit different needs, Iconyx systems are available in four sizes: all are constructed from the basic eight-channel IC8-R-II module to simplify shipping and transportation. The modules are easily transported and quickly joined together in the field. A single module forms the IC8-R-II, two modules form the IC16-R-II, three the IC24-R-II and four the IC32-R-II. All bring high output, crisply articulated, naturally balanced sound to every listener.



RHAON is the first practical system to combine individual loudspeaker control and supervision of self-powered loudspeaker systems with digital audio distribution. RHAON makes it easy to connect, control and monitor multiple Iconyx IC-R-II series arrays and a mixture of other Renkus-Heinz powered loudspeakers using standard Ethernet cabling and switches - all over a single Cat 5 cable.

Powerful Algorithms, Intuitive Interface

The software algorithms that shape and aim the output of an Iconyx array, control and supervise it are complex, but the user interface is intuitively simple. Large, easy-to-understand windows guide users through the process of Connecting, Controlling and Supervising the system.

Multiple Input Options

Iconyx IC-R-II arrays equipped with RHAON offer a variety of input options. Dual analog inputs are standard along with a serial AES/EBU digital input and multi-channel digital audio via CobraNet. Priority override allows any input to be given override capabilities over other inputs. Selection is accomplished quickly and easily from a centrally located computer

Advanced Digital Signal Processing

A powerful DSP inside each Iconyx IC-R-II array on the network is controlled by RHAON. It provides eight bands of parametric EQ plus high and low frequency shelving filters, input level control, muting, up to 340 ms of delay, compression and beam steering.

Our BeamWare software, an integral part of RHAON, lets you model the audience area, then drag and drop beams until coverage is optimized. BeamWare then calculates a set of FIR (Finite Infinite Response) filters that control the array's beams. At installation time, simply download the full set of FIR filters from your computer to the Iconyx IC-R-II series modules over the Ethernet network.

The beams can be easily adjusted from your computer after the Iconyx array is installed. If the array was hung too low, simply raise the array's acoustical center using software instead of re-hanging the array.

Multiple Presets, Easy Selection



RHAON's comprehensive network capabilities make it easy to add one-touch presets and Iconyx R-II series arrays can store up to 10 different configurations in their DSP memory.

For example, you might optimize one configuration for small events on the main audience area, and another for larger occasions with listeners in the balcony. Once the configurations are stored, it's easy to switch from one to another. Up/Down buttons and a readout on the rear panel of the array allow an operator to scroll through the available presets. This function

can also be performed remotely from the central control computer, by means of a remote control panel if a central computer is not being used or from third party controllers such as those made by Creatron.

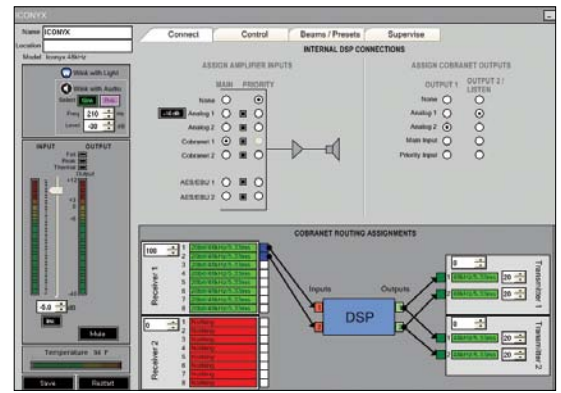
Continuous Supervision



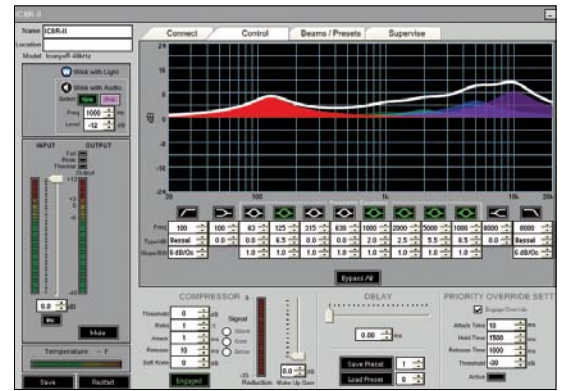
RHAON tracks critical operating parameters such as signal clipping, amplifier output voltage and current and temperature with automatic alert functions. Whenever a failure occurs, the icon

representing that loudspeaker will turn from green to red to alert you to the problem. The associated Supervisory window provides more details.

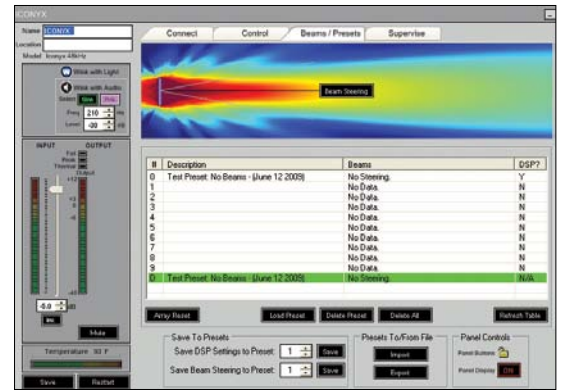
RHAON is not pre-certified as a life-safety system, but it has been designed to meet the requirement of most local authorities. Redundant signal paths and programmable priority override functions are built in. Continual monitoring of each networked loudspeaker, with automatic operator alert and logging functions, help you make sure the system is available when it's most urgently needed.



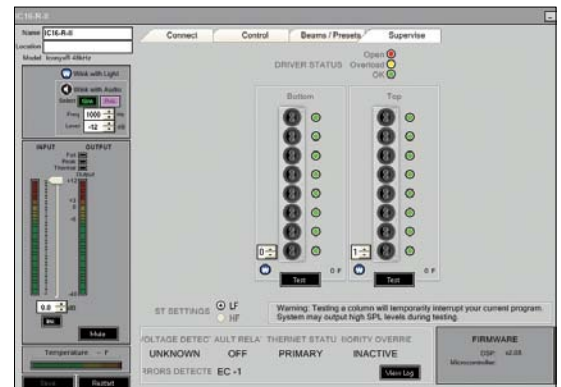
Connect Setup Window



Control Window Setup Window



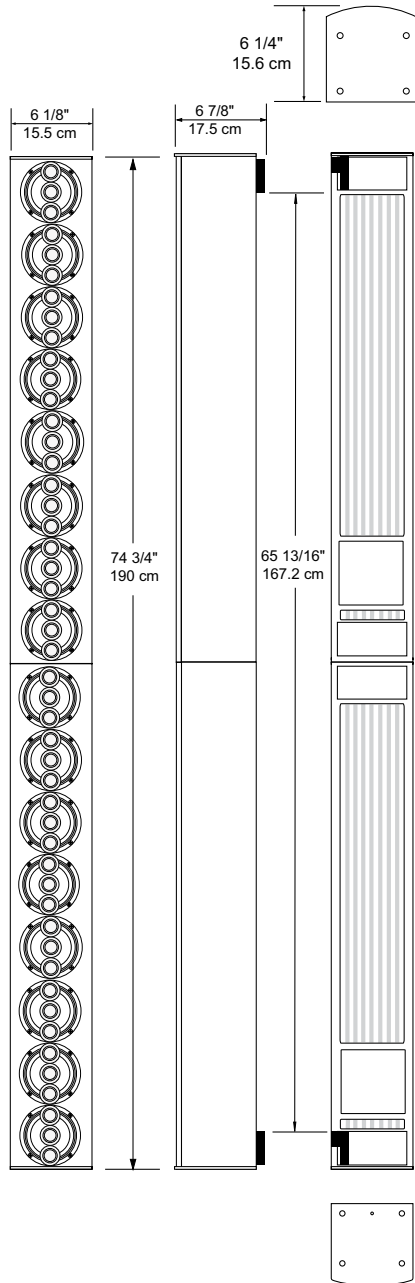
Beam Control & Preset Window



Supervisory Window



IC16-R-II & IC16/8-R-II Specifications



Sensitivity: 1.0 V (for rated power output)

Freq. Range: 120 Hz to 18 kHz

Max SPL: **IC16-R-II:** 99 dB peak, @ 100 Ft. (30.5 meters);
IC16/8-R-II: 96 dB peak, @ 100 Ft. (30.5 meters);
(3-octave bandwidth centered at 2 kHz)

Horiz. Dispersion: 150° up to 3 kHz; 120° above 3 kHz

Vert. Opening Angles: 20°, 25° and 30°

Vert. Aiming Angle: **IC16-R-II:** adjustable from -30° to +30°
IC16/8-R-II: adjustable from -10° to +10°

Typical Throw: 135 Ft. (40 meters)

Beam Control: Effective down to 400 Hz

№. Transducers: 16 coaxial transducers, each having triple tweeters

№. Amp. Channels: 16 in IC16-R-II; 8 in IC16/8-R-II

Dimen. (W/mtg Hinges): 74 3/4" H x 6 1/8" W x 6 7/8 D
(190 cm x 15.5 cm x 17.5 cm)

Weight: IC16-R-II; 72 Lbs (32.7 Kg). IC16/8-R-II: 62 Lbs (28.1 Kg)

Hanging Method: 2-point hinges or Metric M6 thread eye-bolts.
Enclosure: Extruded Aluminum with perforated steel grille;

Transducers: Coaxial with a 4" woofer and triple 1" tweeters,
RH model SSL4-7; 25 W RMS, 50 W pgm

Inputs: Analog Audio: 2 inputs (primary & secondary),
Phoenix 6-pin connectors (looping 3-in, 3-out)

CobraNet: Dual RJ45 connectors (for CAT 5 cable)
Fiber Optic input for primary CobraNet
input available as an option.

AES/EBU: Phoenix connector

Power: IEC power connector
Surge Protector available as an option

Controls (Rear Mounted): Mute button, Up & Down Output Level buttons,
10 dB pad (on Analog 1 input)
Push-To-Reset circuit breaker
Preset Configuration Selector (10 configurations)

Computer Controls: Gain, Mute, On/Standby, Input Selection;
Compression, 8-Band Parametric EQ, Shelving &
Rolloff Filters, Delay, Preset Configuration Selection

Status Indicators: Power, Signal, Overdrive, Thermal, Mute, Input Pad,
Preset Configuration Selection Readout

Finish: White paint standard; optional finishes, black and
custom color paint; weather resistant

DSP/AMPLIFIER

Type: 8-channel, Class D amplifier/DSP processor
One used in IC16/8-R-II; two used in IC16-R-II

Input Impedance: >20K Ohm balanced differential

Max Input: +24 dBu (Pad in); +14 dBu @ 1V sensitivity (Pad out)

Power Rating: 50 Watts RMS per channel

Freq. Range: + 3, - 3 dB, 100 Hz to 20 kHz

THD Distortion: < 0.05% typical

Hum & Noise: <100 dB (A weighted)

**Power Required-
for each Amp Module** Universal 90/260 V AC, 50/60 Hz
24 VA Idle; 325 VA @ rated output
200 ma Idle; 2.7 Amps at RPO (@ 120 V)

Note: All analog inputs and outputs comply with AES Standard 48-2005 on interconnecting, grounding and shielding.