



New Directions for Live Event Production

Magnificent architectures add excitement and allure to any live event. But it can also create acoustical problems. Iconyx Live arrays use advanced digital beam steering technology to deliver impeccable sound while staying in the background visually.

Iconyx Live arrays provide an elegant solution to long standing acoustical problems with slim enclosures that blend into any environment. Individual driver control maximizes the acoustical advantages of this design. The result is unsurpassed vertical pattern control – essential for delivering intelligible speech in reverberant spaces. Iconyx Live beams can be steered up or down while the array remains vertical – and nearly invisible.

IC Live arrays are also powerful. Their 6.5 inch low frequency neodymium transducers and 1 inch throat titanium nitride coated HF drivers produce surprisingly high sound levels for their size. They are equally at home delivering intelligible speech during corporate stockholder meetings, cutting through the crowd noise at political conventions or shaking the walls with rock music during product introductions.

Transparent Solutions

- Corporate Events
- Live Concerts
- Political Rallies
- Theatrical Productions.
- Museums: lobbies, galleries, etc.
- Resorts, Theme Parks
- Any environment where enjoyable music and/or intelligible speech are critical

POWERFUL • MUSICAL • INTELLIGIBLE

Adaptable, Articulate, Invisible

Digital beam steering puts IC Live output where it belongs: on the audience, not walls or ceilings. Computer software lets you define the opening angles for as many as four sonic beams from each IC Live array module (up to 8 beams when stacked) and aim them up or down. Meanwhile, the slim enclosure stays vertical and inconspicuous. Two ICL-R modules can be stacked for even tighter control and higher output.

Powerful, Accurate, Musical

Iconyx transparent technology controls sound with DSP intelligence, not cumbersome brute-force techniques. Multi-channel class D digital amplifiers with Integral DSP engines control every single array element with programmable precision. High-current audiophile output stages power each light, efficient transducer in the Iconyx array individually. Even at 100 feet, SPL is an impressive 105 dB (108 dB when stacked). Output is flat from 80 Hz to 20 kHz. Low frequency energy can be extended to 40 Hz or below with matching subwoofers.

Portable, Scalable, Versatile

Iconyx IC Live arrays are engineered for portable applications, with a comprehensive hardware system that makes setup simple. Two IC Live arrays can be combined for added output and control. When full range musical output is important to the program, one or two IC215-S dual 15-inch subwoofers can be added to either array. The subwoofers can act as tall or wide bases for IC Live arrays using the interlocking hardware system.

One-Touch Presets, Intuitive Software

RHAON empowered IC Live arrays provide a full set of remote control and supervision functions, along with the ability to store up to ten preset configurations in memory. The presets adapt the arrays 150° wide horizontal coverage for typical applications such as hotel meeting rooms or auditoriums. For more complex situations, Iconyx BeamWare software makes it easy to shape the array's coverage to the audience area.

IC Live Digitally Steerable Line Arrays



ICL-R

For All Portable Applications
Quick Setup, Beam Presets



ICL-R Array shown with companion
IC215S-R Subwoofer

Natural Speech, Enjoyable Music - Anywhere

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 IC Live uses an audiophile-quality multi-channel amplifier to drive high performance transducers. They reproduce the full frequency spectrum with accuracy and balance, so instruments and voices sound as they should.

"Up close and personal" communication happens when sound arriving directly from the source, whether it's a live person or a loudspeaker, is much louder than sound that's reflected off the walls, windows, floor and ceiling. As you move farther away, the direct sound loses volume twice as fast as the reflected sound. In very reverberant spaces, it can be hard to understand someone speaking in a normal tone of voice more than a couple of arm's lengths away.

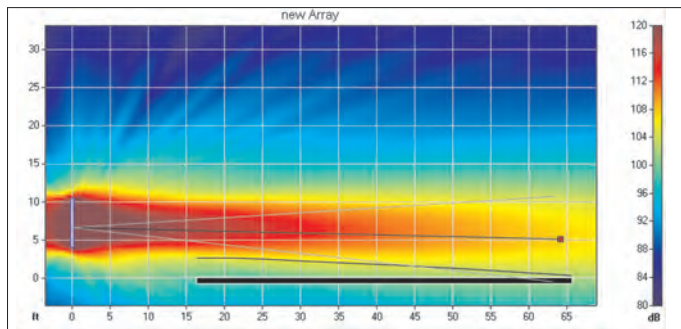
Iconyx arrays produce tightly focused, precisely aimed beams of acoustic energy that retain their intensity over long distances. Because most of the highly directional sound from an Iconyx array is focused on the listeners, very little is left to bounce around the room and confuse the ears. That's how Iconyx arrays let you sit hundreds of feet away from the speaker or musicians and still hear words and music as if they were right "in your face."

Many venues need the energy and excitement of live music as well as clear communication via the spoken word. Iconyx Live excels in both roles, with a unique combination of precise control and abundant acoustical power. Each IC Live ICL-R module has 800 Watts of pure digital amplification. To turn electrical power into accurate, natural, exciting sound, IC Live uses five 6.5-inch cone drivers high-energy neodymium magnets along with three 1-inch exit Titanium HF drivers for superior efficiency and reduced weight.

With its highly efficient amplifiers, advanced transducers and precisely focused output, a full IC Live stack produces an impressive 108 dB peak SPL at 100 feet. IC Live arrays are engineered to project the energy of live performance throughout the entire listening area, with intimate detail and exciting impact.

Iconyx uses complex software and individual DSP control over each array element to focus sound without bulky horns or boxes that block sight lines. Iconyx digitally controlled arrays give you the power, accuracy and flexibility to handle reverberant spaces of all shapes and sizes. Advanced DSP software shapes and aims up to four beams from each module. Up to ten preset configurations speed setup.

The software algorithms that shape and aim the output of an Iconyx array are complex, but the user interface is intuitively simple. Our BeamWare Windows application lets you define the audience area, then adjust the beams until coverage is optimized.



Typical BeamWare display

Portable Modular System

IC Live array systems were engineered from the start for portable use in live event productions. Six system configurations are available from just two items, the ICL-R array module and its associated subwoofer which doubles as a solid support base for the array.

The ICL-R array module can be used alone or stacked two high, or combined with either one or two subwoofers.

They are easy to transport and set up quickly and easily. A unique interlocking hardware system with quick release pins joins the modules and/or subwoofers together into a solid and secure assembly in a minute or two.

Preset array configurations adapt the system to anything from a small hotel meeting to a live concert for thousands of people.



ICL-R array with horizontal subwoofer



ICL-R array with dual horizontal subwoofers



Stacked ICL-R array with horizontal subwoofers

MAXIMUM CONTROL



RHAON is the culmination of more than 20 years experience integrating electronics with loudspeakers. RHAON makes it easy to connect, control and monitor multiple ICL-R arrays and a mixture of other Renkus-Heinz powered loudspeakers using standard Ethernet cabling and switches. On one network, you can distribute multi-channel digital audio with CobraNet, control array-specific DSP functions, and supervise the entire loudspeaker system from a centrally location computer.

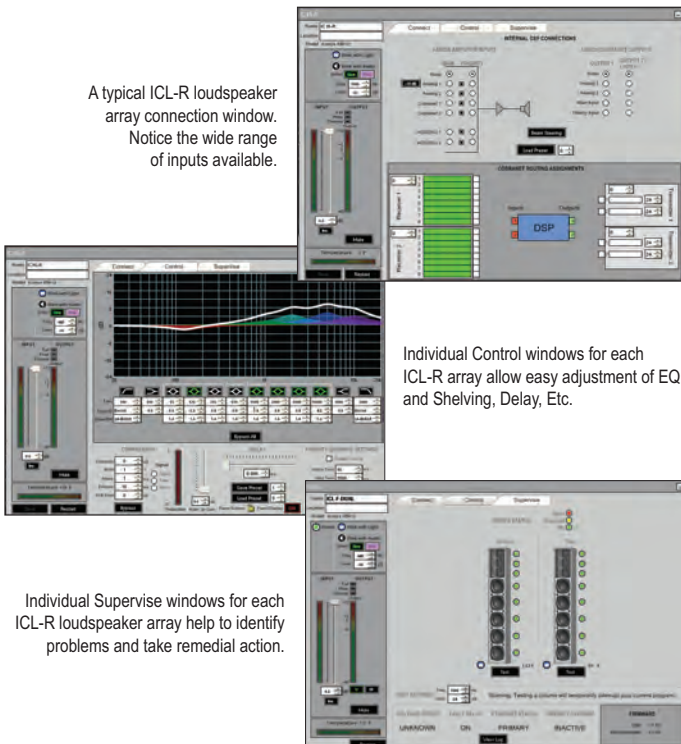
RHAON's comprehensive network capabilities make it easy to add one-touch presets, zone control and life safety functions to any ICL-R system.

RHAON gives you maximum control of:

- Real time digital audio distribution over standard Ethernet using proven CobraNet technology to deliver multiple channels of high quality digital audio over a single CAT 5 cable.
- A powerful DSP inside each ICL-R array on the network. Adjust eight bands of parametric EQ, high and low frequency shelving filters, input level control, muting and delay in real time; store up to 10 preset configurations.
- Our Beamware software with its ability to individually shape, steer and control multiple sonic beams to cover almost any audience area.
- Monitoring and supervisory functions. RHAON tracks critical operating parameters such as signal clipping, amplifier output voltage and current and temperature with automatic alert functions.

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.

A typical ICL-R loudspeaker array connection window. Notice the wide range of inputs available.



ARRAY CONFIGURATION SOFTWARE

Powerful Algorithms, Intuitive Interface

The software algorithms that shape and aim the output of an Iconyx array are complex, but the user interface is intuitively simple. 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 IC Series modules over the Ethernet network.

The beams can be easily adjusted from your computer after the Iconyx array is installed.

RHAON also allows you to adjust the output level, EQ, high and low frequency shelving, muting and delay of ICL-R arrays from your computer.

Multiple Presets, Easy Selection

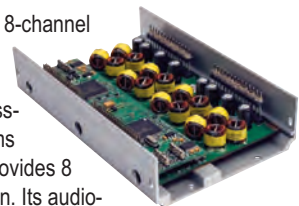
ICL-R can store up to 10 different configurations in the loudspeakers DSP memory. For example, you might optimize one configuration for small events on the main audience area, and another for larger occasions with listeners in the balcony. Once the configurations are stored, it's easy to switch from one to another. Up/Down buttons and a read-out on the rear panel allow an operator to scroll through the available presets. This function can also be performed remotely from the central control computer or by means of a remote control panel if a central computer is not being used.



IC-RC1 Remote Control

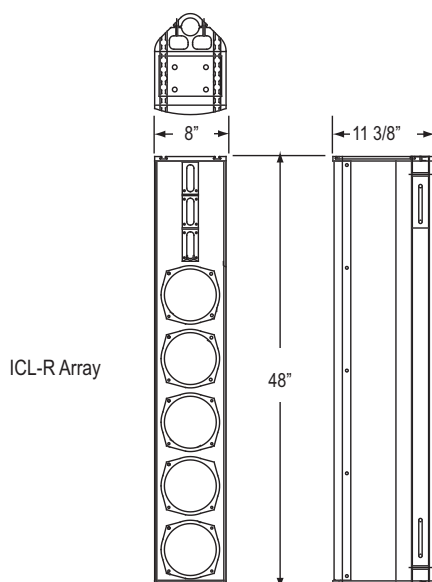
Advanced DSP Processor / Amplifier

The brain of each ICL-R module is the 8-channel DSP processor / amplifier developed specifically for Iconyx. It not only performs the complex digital signal processing needed to shape and aim the beams without creating side lobes, but also provides 8 channels of Class D digital amplification. Its audio-ophile, high-current output section and integral DSP engine control each high-performance coaxial transducer with total precision. The Class D digital amplifiers are lightweight, efficient and cool: no fan noise. Fully regulated switching power supplies operate from 90 to 260 Volts, 50/60 Hz AC.

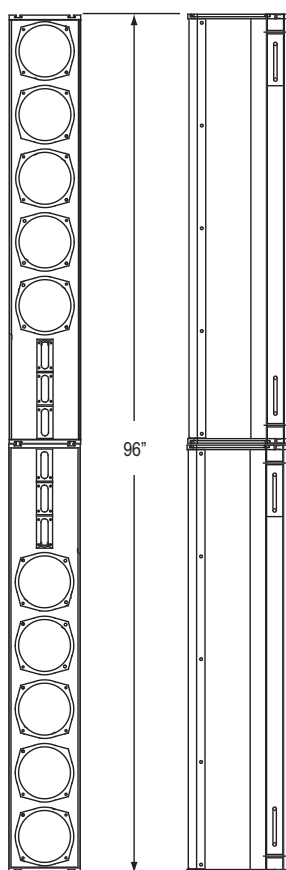


Multiple Input Options

ICL-R arrays offer a variety of input options. Dual analog inputs are standard equipment along with a choice of two digital inputs, Multi-channel digital audio signal distribution via CobraNet and a serial AES/EBU digital input.



ICL-R Array



ICL-R Stacked Array,
showing proper
orientation

Sensitivity: 01.0 V (for rated power output)

Freq. Range: 80 Hz to 20 kHz

Max SPL: 102 dB pgm, 105 dB peak @ 100 Ft. (30.5 meters),
105 dB pgm, 108 dB peak when stacked
(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° (5°, 10°, 15° and 20° when stacked)

Aiming Angle: Adjustable from -30° to +30°

Typical Throw: 66 Ft. (20 m) 132 Ft. (40 m) when stacked

Beam Control: Effective down to 800 Hz (400 Hz when stacked)

No. Transducers: Five 6.5-inch cone transducers with neodymium magnets
(per module) Three 1-inch HF titanium nitride compression drivers

No. Amp. Channels: 8 (per module)

Dimensions: 48" H x 8" W x 11.3" D (121.5 cm x 20. cm x 28.7 cm)

Weight: 61 Lbs (27.7 Kg)

Hanging Method: AeroQuip Fly-Track

Enclosure: Finnish Birch with Aluminum end caps and
perforated steel grill; suitable for outdoor use

Inputs: Analog Audio Inputs: Looping XLR (female in, male out)
and Phoenix 6-pin (looping 3-in, 3-out)
CobraNet: Dual RJ45 connectors (for CAT 5e copper cable)
AES/EBU: Phoenix connector

Controls (Rear Mounted): Mute button
Up & Down Output Level push buttons
10 dB Input pad (on Analog 1 input), Power On/Off,
Push-To-Reset circuit breaker, Configuration PreSet Selector

Computer Controls: Gain, Mute, On/Standby, Input Selection
Compression, 9-Band Parametric EQ, Shelving & Rolloff
Filters, Delay, Configuration Preset Readout

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

Power Connector: Powercon locking connector

Finish: Black paint

Network Digital Format: 16, 20 or 24 bit PCM; 48 or 96 kHz sample rate;
selectable network latency

DSP/AMPLIFIER

Type: 8-channel, Class D amplifier/DSP processor

Power Rating: 100 Watts RMS per channel, 150 Watts Burst

Freq. Range: + 3, - 3 dB, 80 Hz to 20 kHz

THD Distortion: < 0.05% typical

Hum & Noise: <100 dB (A weighted)

Power Required: Universal 90/260 VAC, 50/60Hz. 29 VA Idle;
(per module) 500 VA @ Rated Power Output
(250 ma Idle, 4.2 Amps @RPO at 120 V)

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



RENKUS-HEINZ

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