IP Intercom

the networked broadcast intercom system from Axia

Imagine a digital intercom system with no central matrix.

Actually, don't bother — we've built one. Axia IP Intercom saves on cost, space, and installation time, and eliminates special plug-in cards altogether. It's real plug and play that works every time — even when you need to add a station, or reconfigure the ones you've got.

Why use Ethernet for an intercom system? The advantages of IP and Ethernet – low cost, easy installation and maintenance, efficient infrastructure – are well known. Thanks to its efficient Ethernet backbone, installing IP Intercom is a simple single-click connection. Of course it's easily scalable: plug as many stations into your switch as you want and add on from there. Then start talking! And if you move to a new location, no problem — just pick up the gear and take it with you. IP Intercom is portable so there's no expensive, hard-wired, custom-cable multi-pair infrastructure mess to deal with.

Don't have an Axia studio network? That's OK. You can still save money, increase efficiency, and decrease the hard-wired infrastructure hassle by choosing IP Intercom. It's a stand-alone system with I/O that will accommodate multiple consoles.

But if you do have an Axia system, you'll get more operational goodies. Like seamless console integration that gives your operators benefits other systems can't. For instance, you can take broadcast quality intercom audio directly to air. And you can feed IFB audio directly to intercom callers.

We're broadcasters. We believe that if you can hear it, you should be able to record it, edit it, or get it on the air. If you can talk to it, you should be able to cue it and feed it mix-minus IFB. With IP Intercom, there are no barriers between your broadcast audio and your communications channels. IP Intercom gives you unlimited full bandwidth access to any studio, news or sports venue, office, hallway, broom closet or wherever.

Building an IP Intercom network is easy: just place stations in studio turrets, TOC racks — wherever communications are needed. Connect them to your nearest core or edge switch, and after some fast setup using your Web browser, you're ready to let the conversation flow. Talk and listen to individuals or groups hands-free, with no echo or feedback — IP Intercom features exclusive new AEC advanced echo cancellation from Fraunhofer Labs (the inventors of MP3), so there's never any open-mic feedback during conversations. Ever.

IP Intercom is completely digital inside and out. Other intercom systems try to make you think they're digital by piping their analog signals over CAT-5 cables. Who are they trying to fool? The last thing you need during a breaking story or transmitter failure is hum and buzz getting between you and the guy you need to talk to. With IP Intercom, there isn't any.

So you've gotta be a genius to use it, right? Actually, anyone with an index finger can operate this system with ease. The web interface makes setup simple. Sharp, high-resolution OLED displays are easy to read from anywhere in the room. And our clever callback feature makes sure you'll never miss a call, no matter what you're doing.

IP Intercom comes in several rack-mount and desktop styles, plus drop-in modules for Axia Element consoles. Mix and match to build your customized intercom system

Rack-mount Stations

The IC.20 intercom panel features 20 station presets for quick contact with frequently-called stations. Perfect for Master Control or TOC, the IC.20 includes a keypad and associated display for fast access to stations system-wide, plus group talk and auto-answer functions. Keypad can also dial outside phone lines (using an optional telephone hybrid). 2RU rackmount package features high-visibility 10-character OLED (organic LED) displays, built-in speaker, front- and rear-panel mic connections, 4-pin locking headset jack, analog I/O presented on both XLR and StudioHub-compatible RJ-45 connectors, GPIO connection for speaker mute/dim and external line-status tallies, and an Ethernet jack for single-cable network connection.

The ICX.10 Intercom Expander pairs with the IC.20 intercom panel. It adds 10 station presets (each with a sharp 10-character OLED display and talk and listen keys) to the IC.20 for a total of 30 station presets. A single Ethernet connection is all that's needed for connection; presets are programmed via the ICX.10's built-in Web interface.

The IC.10 is a 10-station version of the IC.20 shown above. It has 10 station presets with high-resolution OLED displays, a built-in speaker, front- and rear-panel mic connections, 4-pin locking headset jack, analog I/O on XLR and StudioHub-compatible RJ-45 connectors, GPIO connection for speaker mute/dim and external line-status tallies, and an Ethernet connection.

The IC.1 is a cost-effective way to add intercom capabilities to any studio. It features 10 LED-backlit film-cap buttons that are easily labeled with station names; like other IP Intercom station, programming is via Web interface. IC.1 has a built-in speaker and front-panel 4-pin locking headset jack, front- and rear-panel mic inputs, analog I/O with XLR and RJ-45 connectors, GPIO speaker mute/ dim control. An Ethernet jack completes the connection complement.

Desktop Stations

The IC.1D 20-station desktop intercom is perfect for producers, screeners, etc. IC.1D has 20 preset stations presented on LED-backlit button caps; an economical way to add intercom function to any space. 20 LED-backlit film-cap buttons can be labeled with station names and programmed using a built-in Web interface and any browser. The OLED callback window lets users identify and answer calls from remote stations that aren't programmed on a local "speed" key. IC.1D includes a built-in speaker and front-panel 4-pin locking headset jack. All it takes to add it to your intercom network is a single CAT-5 connected to the rear-panel Ethernet port; a built-in auto-sensing power supply eliminates nasty "wall warts."

The IC.20D is the desktop version of the IC.20 rack-mount station (opposite page). The 20 station preset locations are equipped with high-resolution OLED displays; the OLED callback window and dialing pad let operators call any station not programmed to a preset location. Naturally there's a built-in speaker, front-panel 4-pin locking headset jack, front-panel mic input, an Ethernet port for fast hookup, and internal auto-sensing power supply.

Console Modules

You don't need to own an Axia console to use IP Intercom — rack-mount and desktop stations integrate with any broadcast mixer to route intercom traffic to air instantly — full-bandwidth, broadcast-quality audio, not tin-can-and-string noise. But if you do own an Axia Element 2.0 mixing console, these drop-in modules make communications even easier by turning your board into an intercom station!

Element owners rave about how easy it is to use the built-in Talkback functions for seamless communication between board ops, hosts, studio guests - even phone and codec callers. Element IP Intercom modules bring this same ease and flexibility to intercom operations. Modules are available in both Element color schemes (Silver and Bronze).

The 20-Station OLED intercom module *(far right)* requires two frame positions and provides access to 20 pre-programmed intercom stations. Individual talk and listen buttons are combined with high-resolution OLED displays for fast access to frequently-called stations; auto-answer functions are also provided. Mic audio is taken directly from the console operator's microphone; speaker audio is directed to the console's preview speaker. There's a dedicated listen volume control, individual mic and speaker mute keys and group talk functions; the overbridge display works with the Element monitor module numeric keypad to give direct access to any station systemwide. Station presets and GPIO functions are programmed using any standard Web browser.

The 10-Station Film-Cap intercom module *(center)* features ten LED-backlit film-cap buttons for single-button calling of up to 10 preset stations. This module occupies one frame position, and also provides a dedicated listen volume control, speaker and mic mute buttons. It uses a single frame position.

The 10-Station OLED intercom module *(left)* occupies one console frame position and includes ten preset locations with 10-character OLED displays, auto-answer functions, dedicated listen volume control, and mute keys for speaker and mic.

IP Intercom specifications

Like all Axia products, IP Intercom uses only premium, studio-grade audio components to guarantee maximum performance.

Microphone Preamplifiers
- Source Impedance: 150 ohms
- Input Impedance: 4 k ohms minimum, balanced
- Nominal Level Range: Adjustable, -75 dBu to -20 dBu
- Input Headroom: >20 dB above nominal input
- Output Level: +4 dBu, nominal

Analog Line Inputs
- Input Impedance: 20 k Ohms
- Nominal Level Range: Selectable, +4 dBu or -10dBv
- Input Headroom: 20 dB above nominal input

Analog Line Outputs
- Output Source Impedance: <50 ohms balanced
- Output Load Impedance: 600 ohms, minimum
- Nominal Output Level: +4 dBu
- Maximum Output Level: +24 dBu

Frequency Response
- Any input to any output: +0.5 / -0.5 dB, 20 Hz to 20 kHz

Dynamic Range
- Analog Input to Analog Output: 102 dB referenced to 0 dBFS, 105 dB “A” weighted to 0 dBFS
- Analog Input to Digital Output: 105 dB referenced to 0 dBFS
- Digital Input to Analog Output: 103 dB referenced to 0 dBFS, 106 dB “A” weighted
- Digital Input to Digital Output: 125 dB

Equivalent Input Noise
- Microphone Preamp: -128 dBu, 150 ohm source, reference -50 dBu input level

Total Harmonic Distortion + Noise
- Mic Pre Input to Analog Line Output: <0.005%, 1 kHz, -38 dBu input, +18 dBu output
- Analog Input to Analog Output: <0.008%, 1 kHz, +18 dBu input, +18 dBu output
- Digital Input to Digital Output: <0.0003%, 1 kHz, -20 dBFS
- Digital Input to Analog Output: <0.005%, 1 kHz, -6 dBFS input, +18 dBu output

Crosstalk Isolation and CMRR
- Analog Line channel to channel isolation: 90 dB isolation minimum, 20 Hz to 20 kH
- Microphone channel to channel isolation: 80 dB isolation minimum, 20 Hz to 20 kHz
- Analog Line Input CMRR: >60 dB, 20 Hz to 20 kHz
- Microphone Input CMRR: >55 dB, 20 Hz to 20 kHz

Power Supply AC Input, rackmount and desktop stations
- Auto-sensing supply, 90VAC to 240VAC, 50 Hz to 60 Hz, IEC receptacle, internal fuse
- Power consumption: 35 Watts or less

Operating Temperatures
- -10 degrees C to +40 degrees C, <90% humidity, no condensation

Dimensions
- IC.20: 3.5 inches x 19 inches x 8.5 inches, 5 pounds
- IC.10X: 1.75 inches x 19 inches x 8.5 inches, 4 pounds
- IC.10: 1.75 inches x 19 inches x 8.5 inches, 4 pounds
- IC.1: 1.75 inches x 19 inches x 8.5 inches, 4 pounds
- IC.20D: 18.25 inches x 6 inches x 5.75 inches, 6 pounds
- IC.1D: 13.5 inches x 8.5 inches x 4.5 inches, 6 pounds

See AxiaAudio.com/intercom/ for more details.