Wheatstone consoles and control surfaces

Between 2000 and 2013 Wheatstone has sold over 10,000 consoles. Virtually every one of them is still in service. As are the many thousands sold before 2000. Wheatstone carved a niche for itself, pushing the radio console into the modern age. Today, we're considered the standard in audio consoles for radio.

Our IP-12 and IP-16 extend Wheatstone' reach into the world of the WheatNet-IP Intelligent Network. With its modular design, it is quickly adaptable to be an on-air or production board, customized to any configuration you need. WheatNet-IP compatibility extends its reach outside the studio and opens it to unlimited sources from virtually anywhere.

WheatNet-IP: The Intelligent Network

We looked at the world of AoIP Networking and thought long and hard before jumping in. The stuff that was out there was OK, but left a LOT of room for improvement. For starters, the way the workload was distributed had to change. Rather than having a single point call the shots, we thought it important to have distributed intelligence built into WheatNet-IP. What this means is that every BLADE (or node) has the DNA of the entire network and can operate in any position on the network. It means that the network can configure itself, as every BLADE is self-aware. It means the network can heal itself - if a BLADE fails (fat chance) just put a new one in its place and watch it set itself up. We also incorporated gigabit Ethernet speed throughout the entire network, giving you 10 times the bandwidth of the common stock.

WheatNet-IP's Intelligent Network is what the industry has been waiting for – WheatNet-IP is what YOU'VE been waiting for!

the surface

all the fit, feel, function, and flexibility in an affordable control surface

The IP-12 and IP-16 offer a great way for a small to medium radio operation to enter the world of networked audio. By moving the audio, logic and interface functions out of the board and into a single rack-space unit (called a BLADE), we are able to provide a significant boost to the flexibility, power and futurability of this console.

Tapping into the power of WheatNet-IP Intelligent Network technology through the use of the included IP88CB Console Audio BLADE, it's a perfect low-cost, small-footprint solution. AND it's a great way to start or expand a WheatNet-IP network.

The IP-12/IP-16 starts with a 12- or 16-fader control surface that looks and feels exactly like a self-contained console. Each of the input modules is equipped with an LED source name display and an A/B source selector whose sources can be set via a rotary encoder in the master section.

Each input module has access to four program busses and has cue and talkback switches. A 100mm high-quality long-throw fader and lighted channel ON/OFF switches round out the module.

The master section offers control room, studio, and headphone controls with source selection, as well as an onboard amplifier and headphone jack. Timer controls, a master talkback button, and a built-in cue speaker with level control are provided. There are four event switches and six programmable buttons available for user functions.

The meter bridge has three stereo pairs of bright 30-segment horizontal LED bar graph meters, as well as an on-board timer with controls located in the master section.

- 12- or 16-fader compact control surface
- 4 stereo program busses
- LCD source name displays
- LED-illuminated switches
- A/B source selector on each input module
- Guarded channel ON/OFF switches
- Headphone output with built-in amplifier and level control
- Control room and studio monitor outputs with independent source selectors and level controls
- Four event switches

- CUE bus with built-in amplifier and speaker
- Three pairs of bright, 30-segment stereo bargraph meters
- Six programmable buttons
- Individual Channel Mix-Minus outputs with talkback interrupt
- Source Selectable Studio Output with talkback interrupt
- On-board timer
- Uses the IP88CB Console Audio BLADE, WheatNet-IP compatible
- Modular control surface design

cool stuff about the IP-12 and IP-16
it's exceptionally powerful while being exceptionally easy to use...

Modular Architecture

For the IP-12/IP-16, we've moved the logic, audio and interface to a single space rack unit we call the IP88CB Console Audio BLADE. This mix engine node handles all the interfacing and heavy lifting. It connects to the IP-12/IP-16 control surface via standard Ethernet. The two of them together make an incredibly powerful self-contained console. But there's more – they enable you to become a part of the WheatNet-IP network (if you have one, of course). This means that with the IP-12/IP-16, you've got the first building block to a networked facility or you've got another station on your existing network. Either way, the functionality you get with the IP-12/IP-16 is pretty breathtaking.

Modular Construction

We've built the IP-12/IP-16 (in New Bern, NC USA, by the way) to be easily accessed by you. No 'one-surface, gotta take the whole thing apart construction' here. If you need access to a channel, all it takes is two screws and you're in. Makes it a breeze to service or simply swap out a module.


Source Select

Any input can be called up on any channel on the IP-12/IP-16. This means that the feed you've got plugged into input 7 on the back of the BLADE (or ANY BLADE), for instance, can show up on channel 2...or any channel. Same with any input! Not only that, you can assign a backup or different source to the same channel and switch on the fly by using the SOURCE A/B buttons. As if this isn't cool enough by itself, think about the flexibility if/when you decide to link the IP-12/IP-16 up to a network. Imagine having any source on the network at your fingertips, with no patching.

Mix-Minus / Direct Outputs

Each fader has a dedicated Mix-Minus output (activated by the TB switch) that includes all active faders on its selected source bus, except for itself. These auto generated monaural Mix-Minus signals may be routed to feed telephone hybrids or other devices as required.

Alternately, these outputs may be set to provide a separate direct output from that channel-only, that consists of the source assigned to that channel. This is very useful for multitrack production work.
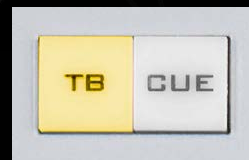
Audio
Out

1. Using standard CAT-6 cables, plug the IP-12/IP-16
control surface and the BLADE into a
managed gigabit Ethernet switch.

2. Plug some of your own audio sources
into the Console Audio BLADE.
Take the output of the BLADE to
wherever you want your audio.

3. Turn it on and start mixing!
That's it!

the network

With the modern, intelligent WheatNet-IP audio networking, you can:

Make wholesale studio changes...
...or switch studios from any seat, reconfigure control surfaces for multiple purposes, and even change audio processing settings automatically when, say, a certain mic turns on. It's all in the WheatNet®.

Bring on the devices.
WheatNet-IP gets along with everyone, including MADI gear like ProTools and TDM systems, and interfaces to more than 40 third-party brands and/or products for end-to-end, seamless operation from the microphone to the stick. In addition, new third-generation WheatNet-IP access units are AES67 compatible, which means you can integrate your audio network with other AES67 compatible devices and systems.

Integrate audio routing and automation.
Imagine interfacing your audio network to your automation system with no sound cards, external logic connections or added routers. Or, better yet, imagine fully integrated audio automation and routing so an announcer seated at the playout system can set a fader for a console located anywhere in the facility. That's WheatNet-IP.

Access any audio, anywhere.
WheatNet-IP handles native analog, microphone, AES/EBU, SPDIF, AoIP, MADI, SDI and even AES67, which is now included in our third-generation access units. Ingest any audio format into the WheatNet-IP, and convert to any audio output — analog to digital, AES to IP, microphone to AoIP or MADI to AES67.

Control and route audio all on the same cable.
No more having to chase down or create new logic commands for sources every time you change control surfaces or studios. Logic follows audio. Audio and control for that audio travel down the same cable, so you can pick up feeds and the logic for those feeds anywhere along the network. Route any audio input to any or all outputs in the network.

Relax, you have switch-over silence detection.
Let's say an operator misses a cue or leaves a fader down. No problem. When WheatNet-IP senses silence, it can take the automation system directly to air until the operator catches up. Every single audio output channel can be programmed with silence detection and automatic switch-over function.

Simplify things.
No need to assign IP addresses or allocate bandwidth or pay someone else big money to do it. Just plug it into your managed gigabit Ethernet switch and let WheatNet-IP do the rest. Add codecs, processors and controllers or change I/Os in a snap. You spend less time configuring the system, and more time on what's important: creating awesome sound.

Call the shots.
You call the shots, not some PC. WheatNet-IP distributes the workload to all access points in the system for better overall network stability. Each WheatNet-IP BLADE access unit has its own embedded processor with operating system that allows it be a powerful standalone router or part of a larger system. WheatNet-IP is an embedded system that does not require outside intervention or control from 3rd party software running on PCs. The configuration of the entire network is stored in each BLADE.

Self-pruning multicast trees.
A lot of older IP audio networks don't manage the multicast streams, which could require you having to periodically manage this yourself or getting a bigger, more expensive switch to handle the mounting volume of streams. Not WheatNet-IP, which continually prunes unused source groupings from the network so that you never run out of switch or time having to delete unused channel assignments that are no longer in use.

Avoid costly system failures.
A distributed and intelligent network means no more centralized points of failure to go wrong, plus more points of recovery. Each WheatNet-IP BLADE access unit is self-aware, and can reconfigure itself in an emergency. In fact, each BLADE in the network can recover settings for your entire studio operation!

Stay ahead of the curve with Gigabit Ethernet architecture.
You might not be in a hurry now with 100mbps throughput, but we promise you'll want the system that has 1 gigabit/second Ethernet throughput once you get your audio network up and running. All WheatNet-IP BLADEs use gigabit Ethernet. This makes all the difference in network throughput, near-zero delay, reliability – and a whole lot more.

Get more on the network for less cost.
Some IP audio nodes are mere input/output devices. Each WheatNet-IP BLADE I/O access unit, by comparison, comes standard with routable utility mixers for mixing, summing and controlling audio in lieu of costly DAs, plus newer BLADE-3s include a multi-band stereo processor for "spot" processing satellite feeds, headphone audio, web streams or any audio feed routed throughout the network. Also included in our new BLADE-3 access units is embedded audio playback that can be used to put emergency audio on the air, and much, much more. With all that functionality built in, WheatNet-IP can save you substantially in hardware costs alone.

Eliminate audio latency problems.
Finally, an audio IP system that can keep up with audio, which means your automation system won't ever drop a satellite feed or skip a commercial because of delay again. Gigabit Ethernet is why.

Get way more for less.
We're talking full-featured routable mixers, stereo processor, and automation control in each BLADE-3 I/O unit , so operators can pan audio, turn channels ON/OFF, set fader levels, and do audio fades, ducking, source assignments – and lots more. The possibilities are mind-boggling.
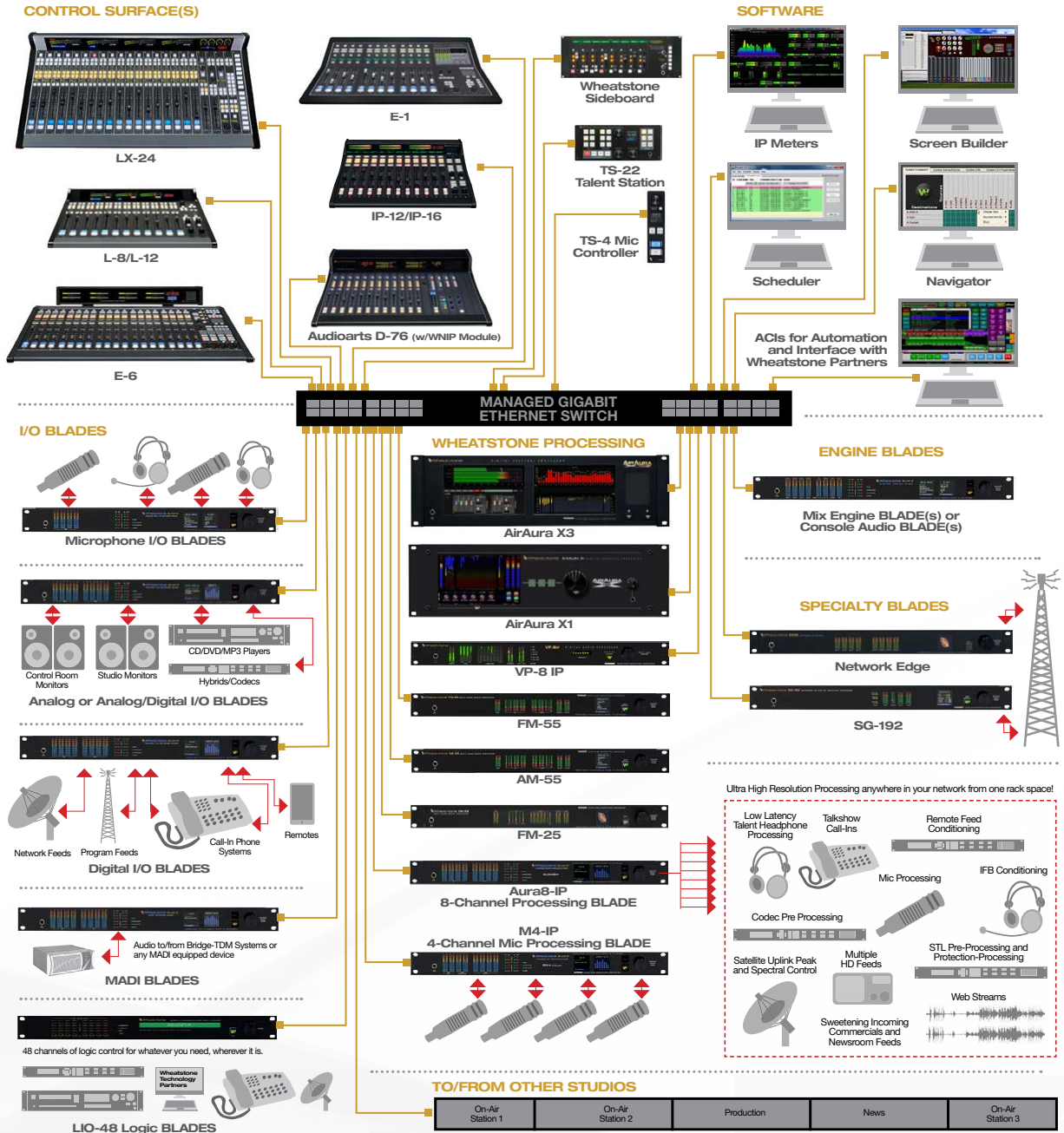
Expand your network at any time, for less.
With control and intelligence built into every WheatNet-IP BLADE I/O access unit, you already have most of the networkability you need to grow with the times.

the network
building the audio ecosystem

CONTROL SURFACE(S)

LX-24

L-8/L-12

E-6

E-1

IP-12/IP-16

Audioarts D-76 (w/WNIP Module)

Wheatstone
Sideboard

TS-22
Talent Station

TS-4 Mic
Controller

SOFTWARE

IP Meters

Screen Builder

Scheduler

Navigator

ACIs for Automation
and Interface with
Wheatstone Partners

**MANAGED GIGABIT
ETHERNET SWITCH**

I/O BLADES

Microphone I/O BLADES

Control Room
Monitors

Studio Monitors

CD/DVD/MP3 Players

Hybrids/Codecs

Analog or Analog/Digital I/O BLADES

Network Feeds

Program Feeds

Call-In Phone
Systems

Remotes

Digital I/O BLADES

Audio to/from Bridge-TDM Systems or
any MADI equipped device

MADI BLADES

48 channels of logic control for whatever you need, wherever it is.

Wheatstone
Technology
Partners

LIO-48 Logic BLADES

WHEATSTONE PROCESSING

AirAura X3

AirAura X1

VP-8 IP

FM-55

AM-55

FM-25

Aura8-IP
8-Channel Processing BLADE

M4-IP
4-Channel Mic Processing BLADE

ENGINE BLADES

Mix Engine BLADE(s) or
Console Audio BLADE(s)

SPECIALTY BLADES

Network Edge

SG-192

Ultra High Resolution Processing anywhere in your network from one rack space!

Low Latency
Talent Headphone
Processing

Talkshow
Call-Ins

Remote Feed
Conditioning

Mic Processing

IFB Conditioning

Codec Pre Processing

STL Pre-Processing and
Protection-Processing

Satellite Uplink Peak
and Spectral Control

Multiple
HD Feeds

Web Streams

Sweetening Incoming
Commercials and
Newsroom Feeds

TO/FROM OTHER STUDIOS

| On-Air
Station 1 | On-Air
Station 2 | Production | News | On-Air
Station 3 |
|---|---|---|---|---|

beyond the surface

there's a world of Wheatstone smart control panels, software, BLADE-3s and other surfaces for you to put to work.

I/O BLADE-3s

I/O BLADEs are access points on the WheatNet-IP Intelligent Network, converting each hardware physical input — audio or logic — to a data stream on the network, and converting data streams to hardware digital outputs. They provide the means of interfacing and controlling all of the audio equipment on your network.

The IP88A (analog), IP88D (digital), IP88AD (analog/digital) and IP88M (mic level) BLADEs handle your standard audio I/O requirements. Each has 8 stereo channels, 16 mono channels, or any combination totaling 16 discrete channels. The A/D versions are half analog, half digital. And the mic BLADE has 8 XLR inputs with high-quality mic preamps.

Special Purpose BLADE-3s

Another I/O BLADE is the MADI BLADE, which converts a 64-channel MADI input to data streams on the network, and converts data streams to 64-channel MADI outputs.

The LIO-48 Logic BLADE provides 48 universal logic I/O ports, each individually configurable, for turning devices on or off by time or event, for automatically adjusting the audio processing settings when a certain mic turns on, and for any other logic control you need in your studio operation.

Mix Engine & Console Audio BLADE-3s

We have several BLADES built to handle specific tasks. First are the Engine BLADES: IP88E and IP88CB. The IP88E is a BLADE that houses all DSP power for an individual control surface or Glass-E virtual mixer, and distributes the four stereo PGM busses, four stereo AUX sends, per-channel mix-minus feeds, monitor outputs, and other bus signals to the network. Once on the network, they are available as sources and destinations anywhere. This creates an extremely flexible system, where program outputs from one surface can be a source on any other surface. For example, a news mixer's program bus can come up as a source on the air studio control surface. While the IP88E doesn't house audio I/O, it does include 12 universal logic (GPIO) ports.

The IP88CB provides powerful interface options, including four AES inputs, four stereo analog inputs, four AES outputs, and four stereo analog outputs on RJ45s; control room and studio stereo analog outputs on XLRs, two mic level inputs with gain trim and switchable phantom power on XLRs; cue and headphone outputs on both RJ45 and 1/4" TRS, and 12 GPI logic ports on RJ45.

WheatNet-IP Overview & Planning Guide

Get a good overview of the Intelligent Network. Learn about all of your console options, details about all BLADEs and compatible processors, all accessories, details on WheatNet-IP technology, interface ideas and more.

This guide is downloadable from any WheatNet-IP product page on our website.

Or, just go to:
http://ip-overview.wheatstone.com

Audio Processing BLADE-3s

Placing a processor everywhere you'd like one has been costly and impractical. Until now. A single Aura8-IP gives you up to eight processors to use as you wish. Use it as a standalone processor with analog and digital inputs or make it a part of your WheatNet-IP network. Either way, the Aura8-IP is a powerhouse.

The M4-IP Microphone Processor BLADE combines four high-quality microphone preamps, four channels of Vorsis embedded microphone processing, and a WheatNet-IP BLADE interface, allowing you to place four microphone inputs anywhere in your WheatNet-IP Intelligent Network. The preamps and processors are accessed and controlled from any point on the network via its Windows-based GUI.

There are several other processors that are WheatNet-IP native as well. These include the VP-8IP, AirAura X3 and FM-531HD.

NOTE: As of August 2014, our original BLADEs are still available. Please contact your Wheatstone sales engineer for further info.

Small Control Surfaces

1. TS-4 Talent Station
Provides lighted on/off/cough and talkback switches for a single talent microphone. A rotary headphone source selector is provided along with an OLED display for identifying the selected source.

2. TS-22 Talent Station
This full featured Talent Station turret plugs into the WheatNet-IP intelligent network to provide microphone control, headphone (with built-in amplifier) and speaker levels, plus source select, programmable soft buttons and timer control. No outboard equipment required and no wiring it all together; a single CAT6 cable handles it all. Also available as a flush-mount countertop panel.

3. Sideboard Control Surfaces
This small control surface is available in 4 or 8 input, tabletop or rack versions and provides an extensive tool set, yet simple operation. Includes built-in headphone amp and controls, source select, and programmable buttons. As with the Talent Stations, just plug it into the WheatNet-IP network and go.

Controllers

HBX8-R Controller
An eight button rackmounted source controller for rapid access to eight preprogrammed sources. An encoder knob with associated display allows access to any signal on the network.

XYE-R IP Controller
A rackmounted controller with full dialup source and destination control. Any signal accessible in a networked system is fully routable.

IP Meters GUI Software

Get a quick read of any audio source, destination or stream in your WheatNet-IP Intelligent Network. Our new IP Meters GUI app displays a "wall of meters" on your computer screen for ongoing monitoring of audio peak levels and average levels at selected points throughout the entire network. Included is a separate analysis meter for spectral readings plus visual alerts should a channel go dark.

Glass-E Software
Wheatstone's Glass-E is the ultimate remote access tool. Use it where you don't need a physical control surface, or to augment one that already exists. Think of it as a glass cockpit for your control room. With it, any of our LX-24, E-6 and E-1 control surfaces can be controlled remotely. Use GLASS-E to take command of a console from anywhere that has network access to the system – ideal for running the board from a remote or for assisting an unfamiliar operator from the engineer's home!

(Note: not compatible with Wheatstone IP-12/IP-16 series consoles.)

GP Series Control Panels

GP8 and GP16 Panels
More than simple switch arrays, these 8 and 16 button panels come with their own scripting wizard. At the simplest level they can do source selection, push-to-talk, and preset/salvo activation. But the intelligence in each panel allows them to query the entire network and make switching decisions based on what they find. Conditional switching using Boolean logic functions allows for complex switching scenarios such as IF Studio B has requested the airchain, AND Studio A has acknowledged, THEN fire the Studio Change salvo.

GP3 Panel
A straightforward headphone panel with level control, 1/4" headphone jack and a switch with LED tally (typically used for the COUGH function, but can be custom wired). Connectorized with both RJ45 and Phoenix screw terminals.

GP4 Panel
A 4 button switch array for remote mic functions (typically ON, OFF, COUGH, TALKBACK). Interfaces with any available BLADE GPIO ports. Of course, all four switches can be custom wired for other functions as well.

GP Turret
A compact desktop turret designed to house up to three (or six in our double width version) GP Panels.

The Wheatstone Touch
Our protocol allows us to interface with commercially available third party touchscreens. You can create customized touch panels that are perfect for your application.

the details
all the panels – everything you need to mix - right there at your fingertips

input

INPUT:
Selects between two preset sources. A and B sources allow a redundant source to be preset for immediate backup use.

ASSIGN:
Directs the module's signal to any of three stereo output busses, plus "OL" (off line), a prefader stereo bus.

TB:
Routes the selected talkback mic to the module's individual Mix-Minus output.

CUE:
Routes the module's prefader signal to the CUE bus.

FADER:
100mm Long-throw Penny + Giles fader for module level control.

ON/OFF:
Switches the module's audio on and off.

master

CUE:
Sets the volume of the cue speaker.

METERS:
Sets the switchable meter pair to display the AUX or offline bus, or one of two external sources.

SOFT KEY:
Six programmable keys to handle frequently utilized user functions.

ENCODER:
Rotary control used to select sources for the selected channel "A" or "B" preset.

TAKE:
Assigns the source selected on the rotary encoder.

SOURCE:
Selects one of four busses or two external sources for listening in the control room.

CONTROL RM:
Level control for the control room output.

monitor

EVENT:
Recalls one of four user-programmable console snapshots.

SOURCE:
Selects one of four console busses or two external sources to feed the studio monitors.

STUDIO:
Level control for the studio monitor output.

TB:
Engages talkback to the studio monitors.

TIMER:
Buttons for auto-start, start/stop, reset, and hold for the built-in timer in the meter bridge.

HEADPHONE:
Level control for headphone amplifier output.

the nitty gritty
specifications and other important stuff you should know about

PHYSICAL DIMENSIONS IP-12:

Dimensions (tabletop mount)	22.625"/57.5cm wide 16.5"/42cm deep 5"/13cm high (rear) 1.75"/4.5cm high (front)
Weight	18.1lbs/8.2kg

PHYSICAL DIMENSIONS IP-16:

Dimensions (tabletop mount)	28.625"/73cm wide 16.5"/42cm deep 5"/13cm high (rear) 1.75"/4.5cm high (front)
Weight	21.5lbs/9.75kg

Rear Panels: IP-12 (top), IP-16 (bottom)

IP-88CB Console Audio BLADE

The IP88CB provides powerful interface options, including four AES inputs, four stereo analog inputs, four AES outputs, and four stereo analog outputs on RJ45s; control room and studio stereo analog outputs on XLRs, two mic level inputs with gain trim and switchable phantom power on XLRs; cue and headphone outputs on both RJ45 and 1/4" TRS and 12 GPI logic ports on RJ45.

Specifications and features subject to change without notice
WheatNet® is a registered trademark of Wheatstone Corporation

Wheatstone & WheatNet-IP Are Automation and Control Ready

The power of Wheatstone's advanced mixing router includes handshaking technology with many of the broadcast industry's leaders: Agile, Audioarts, AudioVault, Audio Compass, AVT, Burli, BSI, Calliope, Crestron, Dalet, Davicom, DE Broadcast Shop, Digital Jukebox, Enco, Eventide, FLEX, Genesys, Grass Valley, iMediaTouch, Macromedia, Miranda, Moseley, MRZ Broadcast, Netia, NewsBoss, Op-X, Pulsar Multimedia, RCS, Reality Check Systems, Rivendell, Ross, SkyView, Sony, StreamSolution (XDEVEL corp.), Tieline, Utah Scientific, Vorsis, VoxPro, WideOrbit, WinMedia, Wire Ready, and Zenon X Media. And more are partnering with us every day.

Designed and built by
Wheatstone Corporation
600 Industrial Drive | New Bern NC 28562-5440 USA
phone 1.252.638-7000 | fax 1.252.635-4857
wheatstone.com | sales@wheatstone.com

Wheatstone
BROADCAST AUDIO PERFECTIONISTS®

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