

ALLEN&HEATH

iLive 



Fixed Format MixRacks

iDR-16 iDR-32 iDR-48 iDR-64

Getting Started Guide

Publication AP7445

Safety Instructions

Before starting, read the Important Safety Instructions printed on the sheet supplied with the equipment. For your own safety and that of the operator, technical crew and performers, follow all instructions and heed all warnings printed on the sheet and on the equipment panels.

System operating firmware

The feature set of the iLive system is determined by the firmware (operating software) that runs it. Firmware is updated regularly as new features are added and improvements made, and is available for download from the Allen & Heath web site. This guide relates to **Version 1.7** firmware. Some of the details shown in this guide may differ from those in the current release of firmware. Refer to the web site for the latest version and read the Release Notes that come with each version of firmware for further details.

Note: Make sure all your iLive MixRacks and Surfaces are running the same version of firmware, and that the Editor software running on your laptop is compatible.

This user guide

This guide provides quick start information for the fixed format iLive Series iDR-16, iDR-32, iDR-48 and iDR-64 MixRacks. The modular iDR10 and iDR0 MixRacks are referred to here but please see their user guides for further information about those models. The guides can be downloaded from the Allen & Heath web site.

Further information

For further information, refer to the user guides associated with each system component. Refer also to the [iLive Fixed Format Systems Getting Started Guide AP7141](#). Use the **HELP MANUAL** available from the iLive Surface TouchScreen **UTILITY** menu and the Editor software. Refer to the [Allen & Heath web site](#) for the latest information on iLive and additional resources for download.

IMPORTANT- Please read carefully

By using this Allen & Heath product and the software within it, you agree to be bound by the terms of the relevant **End User Licence Agreement** (EULA), a copy of which can be found on the Allen & Heath website in the product's pages. You agree to be bound by the terms of the EULA by installing, copying, or otherwise using the software.

iDR-16, 32, 48 and 64 MixRack Getting Started Guide AP7445 Issue 3

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ALLEN & HEATH

Designed in the United Kingdom by Allen & Heath Limited, Kernick Industrial Estate, Penryn, Cornwall, TR10 9LU, UK

<http://www.allen-heath.com>

Introduction

iLive is a state of the art system of components providing a uniquely flexible solution dedicated to live sound mixing and associated applications. It separates the mix engine from the control surface putting the audio and the DSP where it is needed near the stage, and offering a host of control and audio networking possibilities. Refer to the Allen & Heath web site to find out more about the iLive system.

The MixRack is the heart of the system. It is the mixer itself complete with audio sockets, DSP to process the audio, and control and audio networking ports. The MixRack is typically connected to one of the many iLive Surfaces available, but can also be controlled at the same time as or even without a Surface using a laptop running the iLive Editor software, or preconfigured to run with PL Series remote controllers. Walking the stage with a wireless laptop or touch tablet opens up a whole new world of mixing...

- Distributed system – Separate MixRack (DSP) and Surface (controller)
- Network, wireless laptop, touch tablet control
- Editor software for online or offline PC/Mac control
- System can be run without a Surface using laptop only
- Choice of 6 MixRacks (DSP only, modular, 16, 32, 48, 64 mics)
- Mix and match any combination of MixRack and Surface
- Digital snake for local audio at the Surface – ACE™ single CAT5 up to 120m
- Port B audio network option for digital mic splitting and system linking
- Choose from ACE™, ES, MADI, ADAT, Aviom™ and more
- 64x32 RackExtra DSP engine with 8 stereo FX processors
- 32 buses can be configured as mono/stereo groups, auxes, mains, matrix
- Main mix types – none, M, LR, LCR, LCRplus, LRSub, LCRSub and more
- Unique Sub main mix mode for instant access to separate sub bass level
- Monitor mix capability with engineer's Wedge and IEM monitors
- 64 channels configurable as mono or stereo
- Two MixRacks can be linked in Dual-Rack mode to provide 128 input channels
- Up to 72 sources to the mix including FX returns (136 in Dual-Rack mode)
- 3 Dynamics, PEQ, HPF and Delay on all 64 inputs
- 2 Dynamics, PEQ, 1/3 octave GEQ and Delay on all 32 mixes
- 8 Stereo FX with dedicated returns, PEQ and DFX Shaper
- FX emulations of popular industry standard devices
- Input, output and insert soft patchbays
- Up to 8 channel Gangs with choice of which parameters to link
- 16 DCAs with DCA or Mute Group mode
- Built-in signal generator and RTA
- User definable channel names and colours
- Libraries, Scenes and Show memories with USB transfer and Scene filter
- Firmware and memories compatible across all models
- Store all or selected items in Scene memories
- Get started quickly with built-in Template Shows
- 8 Password protectable User Profiles
- Compatible with Allen & Heath PL remote controllers and iDR Series
- MIDI interface at both the MixRack and Surface
- High performance, recallable mic/line preamps
- Digital +/-24dB Trim for FOH/Monitor gain sharing
- Low latency, low noise, very high preamp and mix headroom
- Relay protected outputs
- Redundant backup PSU capability



iLive MixRack Range

There are 6 versions of MixRack to choose from. All MixRacks feature the same powerful 64 channel x 32 mix bus, 8FX RackExtra DSP mix engine and have 64 channel bi-directional network capability. The main difference is the number of physical input and output sockets available.

Choose the rack to suit your application and budget, whether the modular iDR10 for maximum I/O and flexibility, iDR0 with DSP only fed from digital mic split, or iDR-16, 32, 48 or 64 with different number of mic preamps and physical sockets.

Regardless of size or number of sockets, all iLive MixRacks can work with the full 64 channels when additional sources are patched via the Port A (surface audio) and Port B (expander) networks. This means that even the smallest iDR-16 can be linked as the 'slave' in a large format dual FOH/Monitor system using digital mic split from the 'master' rack.



iDR-16 The smallest stand alone MixRack ideal for compact applications mixing up to 16 mics, or FOH/Monitor systems with digital mic split.

- 3U fixed format MixRack
- 16 mic/line in, 8 XLR out
- ACE™ single CAT5 Surface link
- Port B network option slot
- External redundant supply option



iDR-32 Equivalent to a 32 channel console.

- 6U fixed format MixRack
- 32 mic/line in, 16 XLR out
- ACE™ single CAT5 Surface link
- Port B network option slot
- External redundant supply option



iDR-48 Equivalent to a 48 channel console.

- 8U fixed format MixRack
- 48 mic/line in, 24 XLR out
- ACE™ single CAT5 Surface link
- Port B network option slot
- External redundant supply option



iDR-64 Equivalent to a 64 channel console.

- 9U fixed format MixRack
- 64 mic/line in, 32 XLR out
- ACE™ single CAT5 Surface link
- Port B network option slot
- External redundant supply option



iDR10 Flagship MixRack with modular I/O and increased networking flexibility.

- 11U modular MixRack with RAB2
- Up to 80 sockets, up to 64 mic/line in
- Wide range of I/O module options
- Port A Surface link option slot
- Port B network option slot
- Built-in redundant supply option
- 4-pin XLR lamp socket
- Optional flight case

iDR0 DSP only, networked audio compliment to the iDR10 for linked systems using digital mic split.

- 2U modular MixRack with RAB2
- Port A and Port B option slots
- External redundant supply option

Front Panel

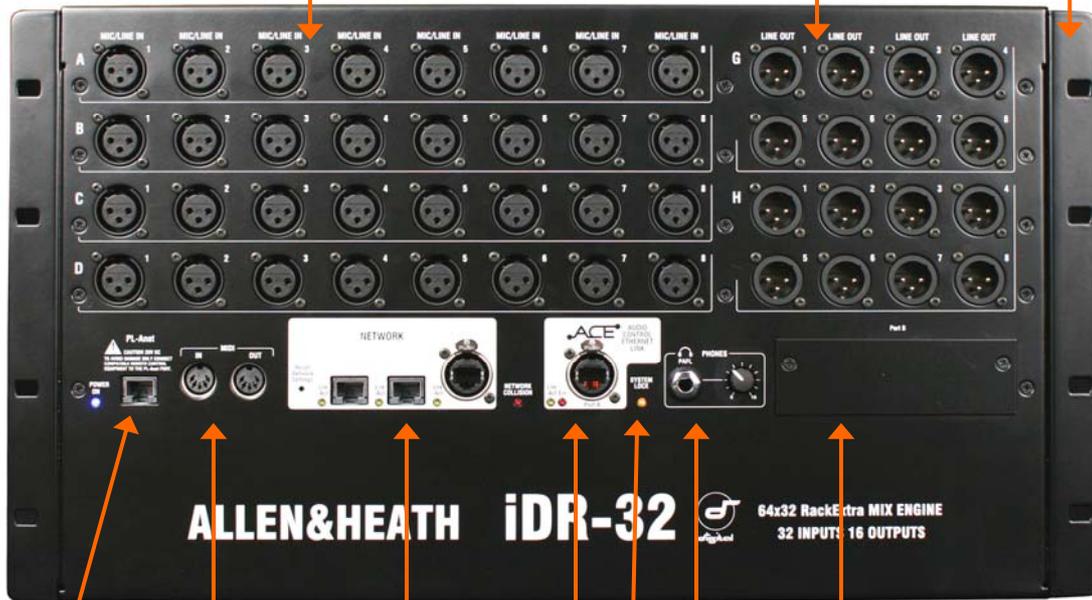
Mic/Line inputs High performance, recallable analogue preamps for balanced or unbalanced microphone and line level signals. Gain, Pad and 48V are digitally controlled within the preamp. Digital Trim and Polarity is available within the DSP channel.

Inputs are identified by Slot (card position) and Socket (number), for example **A1** or **C8**. Any input can be patched to any DSP channel using the **PREAMP** screen.

Line outputs Line level, balanced XLR outputs. Nominal level +4dBu with +22dBu maximum providing +18dB headroom.

iLive signals can be patched to any output socket using the **OUTPUTS** screen. The outputs are relay protected to prevent power on or off thumps.

Rack Ears Fit into a 19" rack or flightcase.



MIDI IN and OUT sockets. MIDI is tunnelled via ACE™ or Network to the MIDI port at the Surface. For more information about MIDI refer to the iLive MIDI Specification.

PL-Anet RS485 connection for Allen & Heath PL Series remote controllers. Several may be daisy chained together or routed individually via the PL-9 PL-Anet hub. PL controls can be assigned using the **SURFACE SETUP** screen or Editor software.



PL-9 hub

Port B audio network option slot Fit one of the option cards available for system expansion, digital mic splitting and distributed audio networking. Capable of bi-directional 64 channels, 48kHz sampling rate. Current options include ACE™, EtherSound, MADI, MMO. Refer to the A&H web site for more on available options.

PHONES 1/4" stereo socket and level control for the built-in headphone amplifier. The output follows the PAFL selection.

SYSTEM LOCK indicates MixRack digital audio sync lock.

ACE™ MixRack to Surface link Also used when linking a Slave MixRack to a Master in Dual-Rack expansion mode. A single CAT5 cable links audio and control. You do not need a separate Network cable because control is bridged over the ACE™ cable between MixRack and Surface.

Network Built-in 3 port switch. Connect one or more laptops running iLive Editor, a wireless router, other iLive systems or external network, or link control to a Surface not equipped with ACE™. All devices on the network must have compatible TCP/IP addresses. A recessed switch lets you reset the network settings to factory default.

Connect and power up

The Control Surface



If the system fails to connect:
Check cables,
Go to **Network Connections**
and **Change MixRack**
Read the **Help Manual**.

Connect Surface to MixRack

Plug a CAT5 cable up to 120m (depending on cable type) between the Surface and MixRack **ACE™** ports. Refer to the A&H web site for information on recommended cables.

An 80m drum of suitable cable is available from Allen & Heath (part number AH7000), or a 2m short cable AH7813.

Note: You only need one CAT5 connection between the Surface and MixRack if you are using ACE™. The control network is bridged with the audio via the single cable.

If your Surface does not have the ACE™ port then connect a CAT5 cable to a NETWORK port at each end. This provides control but not audio.

Network settings

iLive communicates over a TCP/IP network. There are 3 main components – the MixRack, Surface and TouchScreen (built into the surface). These and any other network devices such as a wireless router and laptop need compatible network addresses. Factory defaults are:

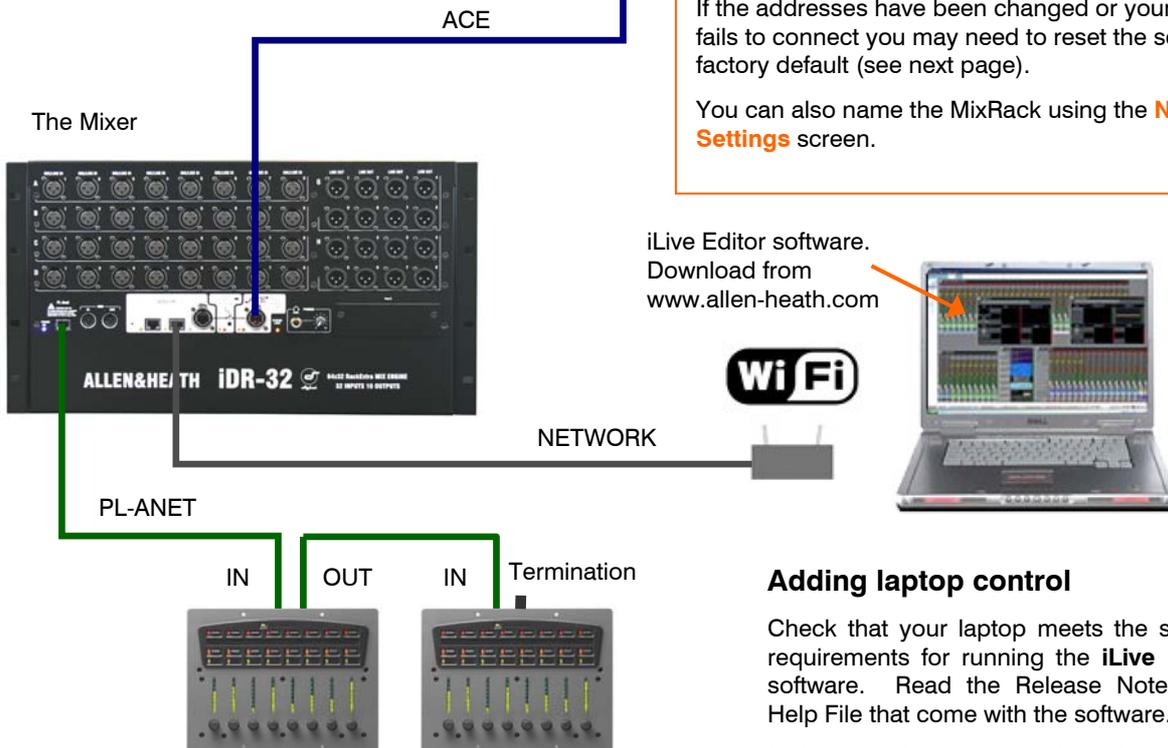
MixRack 192.168.1.1 Sub mask 255.255.255.0
Surface 192.168.1.2
TouchScreen 192.168.1.3

We recommend you set:

Laptop 192.168.1.10 Sub mask 255.255.255.0
Router 192.168.1.245

If the addresses have been changed or your system fails to connect you may need to reset the settings to factory default (see next page).

You can also name the MixRack using the **Network Settings** screen.



Adding PL Series controllers

Use CAT5 cable to connect the MixRack PL-Anet port to the PL device IN socket. Daisy chain OUT to the next unit, or use a PL-9 hub for star connection. Make sure the terminator provided is plugged into OUT of the last device in the chain.

Note: Once connected, the PL controls can be configured. Settings can be saved as library items and in Scene memories.

Adding laptop control

Check that your laptop meets the system requirements for running the **iLive Editor** software. Read the Release Notes and Help File that come with the software.

Make sure the laptop and wireless router have network addresses compatible with the iLive system. We recommend you use static addresses rather than DHCP for stand alone networks.

Plug your laptop or wireless router into any one of the NETWORK ports at the Surface or MixRack.

Start the **iLive Editor** program and connect online or offline.

BACKUP SUPPLY DC input for plugging in the **iPS10** redundant backup power supply unit. Rotate the plug until it locates in the socket, then tighten the locking ring. There is no need to use the CAT5 cable provided with the iPS10 with these MixRacks.

The MixRack will automatically switch between the supplies without interruption to the audio should one fail or lose power.

MAINS INPUT Power ON/OFF press switch, protection fuse and power ON indicator.

Note: Heed the safety warnings printed on the panel and Safety Sheet provided with the MixRack.

Note: Do not obstruct the fan or the ventilation slots on the rear and sides of the MixRack. The fan will increase in speed as the temperature rises.



Switch power on

Switch on the MixRack and Surface by pressing their rear panel power ON switches. If you need to switch them on one at a time then switch on the MixRack first. Also switch on any connected iPS10 backup supplies. The system remembers the settings on power down. These are restored when you switch the system on.

Mains cable securing clip

Loop the mains cable through the plastic clip provided. For added security you can refit the clip using the screw to lock the cable in place.

Boot up time

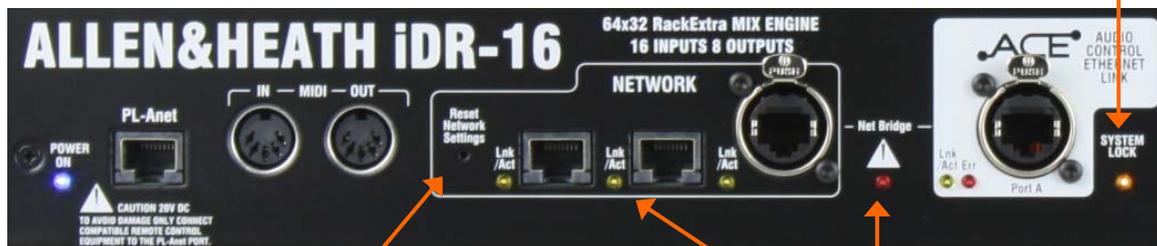
It takes around 15 seconds for the DSP to start passing audio with the same settings as at last power down. You should hear the relays click as they connect the outputs once the MixRack has booted. The Surface will light up and take control around 1 minute later, and the TouchScreen should be ready another minute after that. Editor running on a laptop takes around 2 minutes to connect.

SYSTEM LOCK

Indicates that the audio is sync locked to the selected clock source. If this does not light up then check that the correct Audio Clock Source has been selected using the Surface **MIXRACK SETUP** screen or Editor.

Status indicators

Once booted, check that the blue POWER ON indicators are lit and that the various system status LEDs indicating correctly.



Reset Network Settings

To reset the MixRack TCP/IP address first turn the system off. While using a thin, pointed object to press and hold in the recessed switch, turn the MixRack back on. Hold the switch in for at least 15 seconds while it reboots.

The yellow **Lnk/Act** LEDs for connected sockets flash at a steady rate once the network link is established.

If one or more pulse at a slow rate or the **red error indicator** remains lit then check that the cables are correctly plugged in and are not faulty.

The red error LED will light to indicate network collision if you connect both ACE™ and NETWORK to the Surface using two cables.

Port A and B digital audio networking

All iLive MixRacks provide two audio networking ports. These are Port A and Port B. Both can handle up to 64 channels of bi-directional 24-bit audio with 48kHz sampling rate. **Port A** is typically used as the Surface to MixRack link transporting mix position local audio to and from the MixRack, and is fixed as ACE™ for these MixRack models. Port B is an option slot able to accept one of several cards available from Allen & Heath. Refer to the Allen & Heath web site for more information on the options available as more are added as new standards become established.



Control network 3 port Ethernet switch. Connect laptops, wireless router, link iLive networks, connect external TCP/IP networks, or link to an iLive Surface that does not have an ACE™ port. Control only, no audio.

Port A ACE™ port to link audio and control between the MixRack and **Surface**. Network control is internally bridged via ACE™ allowing a single CAT5 cable to be used (separate Network cable is not needed).

Port A is also used when connecting a Slave MixRack to a Master in **Dual-Rack** mode to expand the system to 128 input channels.

Note 1: CH1-32 and 63/64 are reserved for Surface audio sockets, headphones and talkback. If you connect to a modular iLive Surface then you can use ACE™ CH33-62 to patch outputs to an MMO option card fitted to that Surface RAB2 Port B.

Note 2: The modular iDR10 and iDR0 MixRacks provide a RAB2 Port A option slot instead of ACE™ so that the user can choose which standard to use for the Surface link.

Port B option slot Capable of 64 channel bi-directional digital audio transmission at the iLive sampling rate of 48kHz. Fit none or one of the option cards available from Allen & Heath. Use for:

Digital mic splitter to link multiple MixRacks in FOH/Monitor/Recording/Broadcast systems,

Dual-Rack input expander to link two MixRacks to expand the number of inputs feeding the mix to 128.

Networking audio between iLive systems, mix and broadcast equipment,

Interfacing with popular industry standards such as EtherSound and MADI,

Multitrack recording using various popular formats,

Sending signals to personal monitor systems such as Aviom™ and Hearback™,

Linking to Allen & Heath IDR products including iDR-8, iDR-4, and iDR output expanders.

iLive signals can be patched to Port B channels using the **OUTPUTS** screen.

If you are linking two MixRacks, for example to digitally split the mic inputs from one to both racks, then set the 'Slave' rack to sync off the 'Master via Port B'. Set this using the **MIXER SETUP / Mixer Pref / Audio Networks** screen audio clock source option.



ACE™ Adds a second ACE™ port. Use one socket for the link. Use the second socket for a redundant backup connection if required. Use a short cable to bridge the NETWORK over the ACE™ cable if needed.

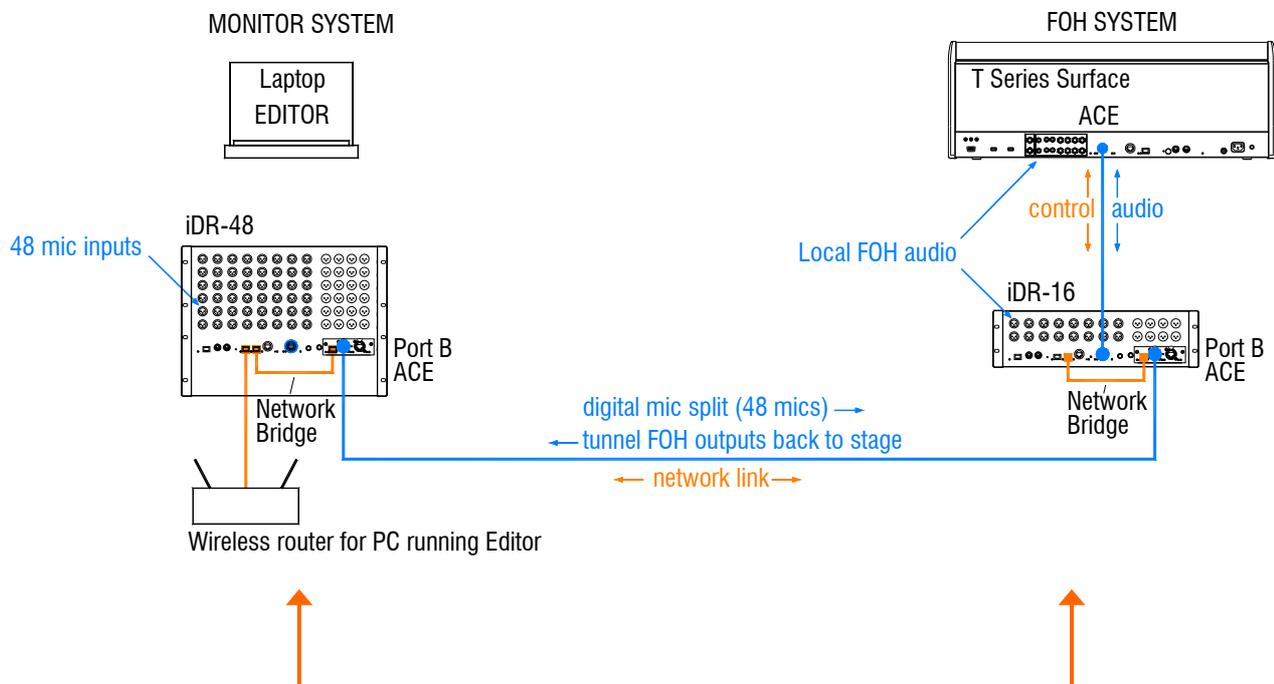
EtherSound Industry standard bi-directional 64 channel network. Control port allows connection of a laptop running an ES monitor program for advanced routing.

MADI Industry standard network popular with recording devices and broadcast systems. Up to 64 channels. Allows many options to daisy chain and split signals to multiple devices. Can work with external 48kHz word clock.

MMO Provides several popular digital formats – up to 24 track ADAT, 16 channel Aviom™ monitor system, Hearbus™, 2x 8-channel digital links to Allen & Heath iDR Series mix processors and output expanders.

System example

The following is just one of many system combinations possible with iLive. Here, two MixRacks are linked for digital mic split from one set of preamps feeding two independent mixers, one for FOH, the other for on-stage monitors. One engineer uses a compact T80 Surface to mix the house sound, the other uses a wireless laptop to mix monitors on stage.



Master system The iDR-48 provides a large number of mic inputs for sources on stage, and plenty of outputs to feed the wedge and IEM monitors.

Port B is used as the **digital mic splitter**. In this example ACE™ is used. Alternatives are MADI or EtherSound. Patch the **MixRack Inputs** to Port B using the **OUTPUTS** screen. This takes the signal straight after the preamp and ensures each engineer has their own channel Trim control.

The NETWORK is shown bridged at both ends to the ACE™ cards using short CAT5 cables. This is only necessary if you want your laptop to be able to access both systems via the wireless router. For audio connection only, leave the Bridge sockets unplugged.

Note: Make sure each MixRack, Surface and network device on the network has a unique IP address.

This MixRack is set as clock master. Check the **audio clock** is set to **Internal** using the **MIXRACK SETUP / Mix Pref** screen.

This example shows a compact two engineer system with wireless laptop controlling monitor mixes. Alternatively you could connect another Surface to the iDR-48 so that each engineer works with their own Surface. A laptop can be added at either or both ends in addition to or instead of the Surface.

Slave system The tiny iDR-16 with its 64x32 DSP can mix a full 64 channels even though it has just 16 inputs. It gets the 48 mics via the Port B digital split. The T80 provides 8 more inputs at the Surface for local sources. With the 8 internal FX returns this is the equivalent of a 64 channel analogue mixer.

Because the 48 mic sources are received via Port B it is necessary to **patch Port B inputs** to the iDR-16 channels instead of the local sockets. Do this for individual channels using their **PREAMP** screens, or for a range of channels from the **MIXRACK SETUP / Mix Pref** screen Quick Input Setup function.

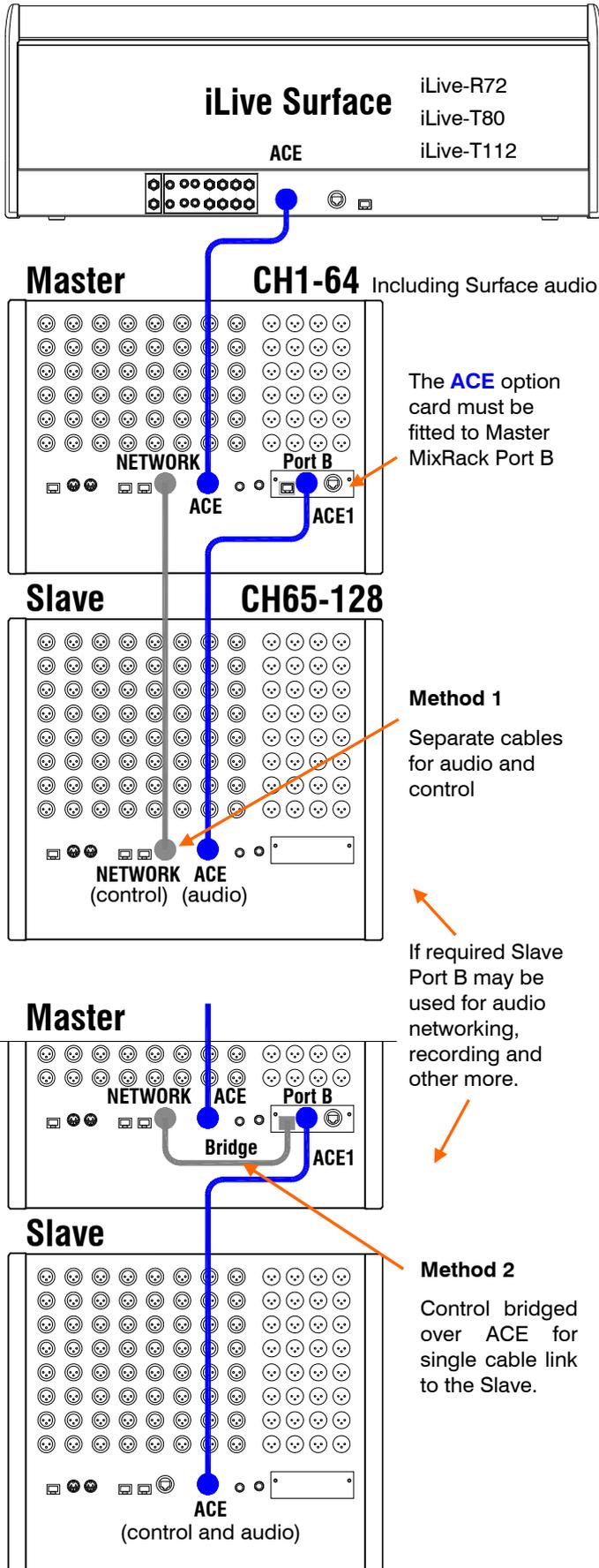
Feeds to the house PA can be routed from FOH or **tunnelled** back to the stage via Port B. These are patched to Port B at the sending end at to the iDR-48 sockets at the receiving end using the **OUTPUTS** screen.

The **audio clock** is set to sync off **Remote Port B** derived from the iDR-48 master. Set this using the **MIXRACK SETUP / Mix Pref** screen.

Gain Sharing – In this example the Monitor engineer has control of the rack microphone Gain, Pad and 48V because the preamps are in the iDR-48 MixRack. This affects both systems. However, the Monitor engineer can work with the channel +/-24dB Trim instead of Gain once set. In this way both engineers have independent Trim (gain) control. The Surface rotary control can be configured to provide Trim control instead of Gain. Set this using the **PREAMP** screen.

Dual-Rack input expansion

Two MixRacks may be connected in Dual-Rack mode to expand the number of input channels from 64 to 128. The number of physical inputs available depends on which MixRacks are used.



Step 1: Network settings

Note: Master and Slave MixRacks must have unique IP addresses and Unit Names.

Make sure both addresses and names have been set before the two MixRacks are connected together.

Set these in **Network Settings**

For example: 192.168.1.1 "Master 1-64"
192.168.1.4 "Slave 65-128"

Step 2: Connect Dual-Rack system

Connect the Surface to the Master MixRack using 1x CAT5 cable in ACE Port A.

Link the Master and Slave MixRacks using 2x CAT5 cables. According to your preference, choose:

Method 1 – Connect a Master Network port to a Slave Network port. Connect Master Port B ACE 1 to Slave Port A ACE. or

Method 2 – Link a Master Network socket to its Port B Bridge socket. Then use one cable to connect Master Port B ACE 1 to Slave port A ACE.

Refer to Allen & Heath web site for recommended cable type and maximum length.

Step 3: Set up Dual-Rack system

Using the Surface TouchScreen go to **Utility / Network / Dual MixRack Setup**.

Touch **Add Slave**. Highlight a MixRack in the list to add as Slave.

Touch **Inspect**. Details of the MixRack are displayed. Check that the firmware is compatible.

Touch **Apply** to add the MixRack as a Slave. The MixRack reboots and resets its parameters.

Note:

- Channels 1-64 are sourced from the Master MixRack (Preamps cannot be mapped across MixRacks).
- Channels 65-128 are sourced from the Slave MixRack.
- Surface audio can only be assigned between channels 1- 64 (connects to Master MixRack).
- Each MixRack processes its own channels 1-64 or 65-128.
- The Master MixRack processes the 32 buses.
- FX may be inserted on Master channels 1-64 only.
- Channels cannot be ganged across MixRacks.
- The Reset Network Settings recessed switch restores default single MixRack operation.

Limited One Year Manufacturer's Warranty

This product is warranted to be free from defects in materials or workmanship for period of one year from the date of purchase by the original owner.

To ensure a high level of performance and reliability for which this equipment has been designed and manufactured, read this User Guide before operating.

In the event of a failure, notify and return the defective unit to the place of purchase. If this is not possible then please contact the authorised ALLEN & HEATH distributor or agent in your country as soon as possible for repair under warranty subject to the following conditions.

Conditions Of Warranty

The equipment has been installed and operated in accordance with the instructions in this User Guide.

The equipment has not been subject to misuse either intended or accidental, neglect, or alteration other than as described in the User Guide or Service Manual, or approved by ALLEN & HEATH.

Any necessary adjustment, alteration or repair has been carried out by an authorised ALLEN & HEATH distributor or agent.

This warranty does not cover fader wear and tear.

The defective unit is to be returned carriage prepaid to the place of purchase, an authorised ALLEN & HEATH distributor or agent with proof of purchase. Please discuss this with the distributor or the agent before shipping.

If the unit is to be repaired in a different country to that of its purchase the repair may take longer than normal, whilst the warranty is confirmed and parts are sourced.

Units returned should be packed to avoid transit damage.

In certain territories the terms may vary. Check with your ALLEN & HEATH distributor or agent for any additional warranty which may apply.

If further assistance is required please contact Allen & Heath Ltd.