ALLEN&HEATH

iLive

Available with AES digital outputs

Fixed Format MixRacks

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

Getting Started Guide

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 1.9** 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, Surfaces and xDR expanders are running the same version of firmware, and that the Editor software, MixPad and Tweak apps are compatible. V1.9 is not compatible with V1.8 and earlier.

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 and the AES-Out option introduced with V1.9. For more on the modular iDR10 and iDR0 MixRacks, and the xDR-16 audio expander please refer to information and documentation on the Allen & Heath web site.

Further information

To find out more about the iLive range 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 within 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 4

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 to iLive

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 brain 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 or iPad, or preconfigured to run with PL Series remote controllers. Walking the stage with the freedom of wireless control opens up a whole new world of mixing…

- Distributed system – Separate MixRack (DSP) and Surface (controller)
- Network, wireless laptop, iPad and iPhone control
- Editor software for online or offline PC/Mac control
- MixPad, OneMix and Tweak apps
- System can be run without a Surface using laptop and iPad only
- Choice of 6 MixRacks (DSP only, modular, 16, 32, 48 or 64 mics)
- Versions available with AES digital out, or update an existing rack with option cards
- 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
- ACE™, Dante, ES, MADI, ADAT, Aviom™, Waves option cards available
- 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

Fixed Format MixRacks

iLive has two types of MixRack – Modular and fixed format. This guide is for fixed format iLive. Refer to the Allen & Heath web site to find out more about the modular iDR10 and iDR0 MixRacks.

There are 4 sizes of fixed format MixRack available. All feature the same 64x32, 8FX DSP mix engine and have audio and control network capability. The difference is the number of physical input and output sockets available. All models can work with the full 64 channels by patching additional sources via Port A (surface audio) and Port B (expander), or by adding one or two iDR-16 expander racks via Port B.

Each size has two versions available – All analogue XLR out, or the last 4 sockets replaced with two dual channel AES digital outputs. Existing racks can be modified to have one or more AES-Out option cards fitted.

iDR-16 Smallest, 3U fixed format MixRack for compact applications mixing up to 16 mics, or FOH/Monitor systems with digital mic split.
Order codes:

IDR-16/*	16 mic/line in, 8 XLR out
IDR-16-DO/*	16 mic/line, 4 XLR, 2 dual AES

iDR-32 6U fixed format MixRack equivalent to a 32 channel console.
Order codes:

IDR-32/*	32 mic/line in, 16 XLR out
IDR-32-DO/*	32 mic/line, 12 XLR, 2 dual AES

iDR-48 8U fixed format MixRack equivalent to a 48 channel console.
Order codes:

IDR-48/*	48 mic/line in, 24 XLR out
IDR-48-DO/*	48 mic/line, 20 XLR, 2 dual AES

iDR-64 Largest, 9U fixed format MixRack equivalent to a 64 channel console.
Order codes:

IDR-64/*	64 mic/line in, 32 XLR out
IDR-64-DO/*	64 mic/line, 28 XLR, 2 dual AES

xDR-16 I/O expander rack adding more input and output sockets plus a Port B card slot. Requires ACE™ fitted to MixRack Port B.

Order codes:

XDR-16/*	16 mic/line in, 8 XLR out
XDR-16-DO/*	16 mic/line, 4 XLR, 2 dual AES

AES-Out option Existing MixRacks can be upgraded to replace one or more I/O cards to provide AES digital outputs. The rack must be running firmware V1.9 before the card is fitted. This work should be carried out by a service agent.

Order code:

004-388KIT	AES digital out option kit
	8 mic/line, 2 dual channel AES

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.

AES digital out option Shown fitted in the last card position. Each socket handles two signals, in this case 5-6 and 7-8.

Rack Ears Fit into a 19" rack or flightcase.

ALLEN&HEATH iDR-32
64x32 RackExtra MIX ENGINE
32 INPUTS 16 OUTPUTS

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, recording and distributed audio networking. Capable of bi-directional 64 channels, 48kHz sampling rate. Current options include ACE™, Dante, EtherSound, MADI, MMO, Waves. Refer to the A&H web site for more on the available options.

PHONES ¼" 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

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.

A 2m short cable (part AH7813), 80m drum (part number AH7000) or 120m drum (part number AH8721) of suitable cable is available from Allen & Heath.

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.

ACE

The Mixer

PL-ANET

IN   OUT   IN   Termination

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.

If the system fails to connect:

Check cables,

Go to **Network Connections** and **Change MixRack**

Read the **Help Manual**.

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 wireless router and laptop need compatible network addresses. Factory defaults are:
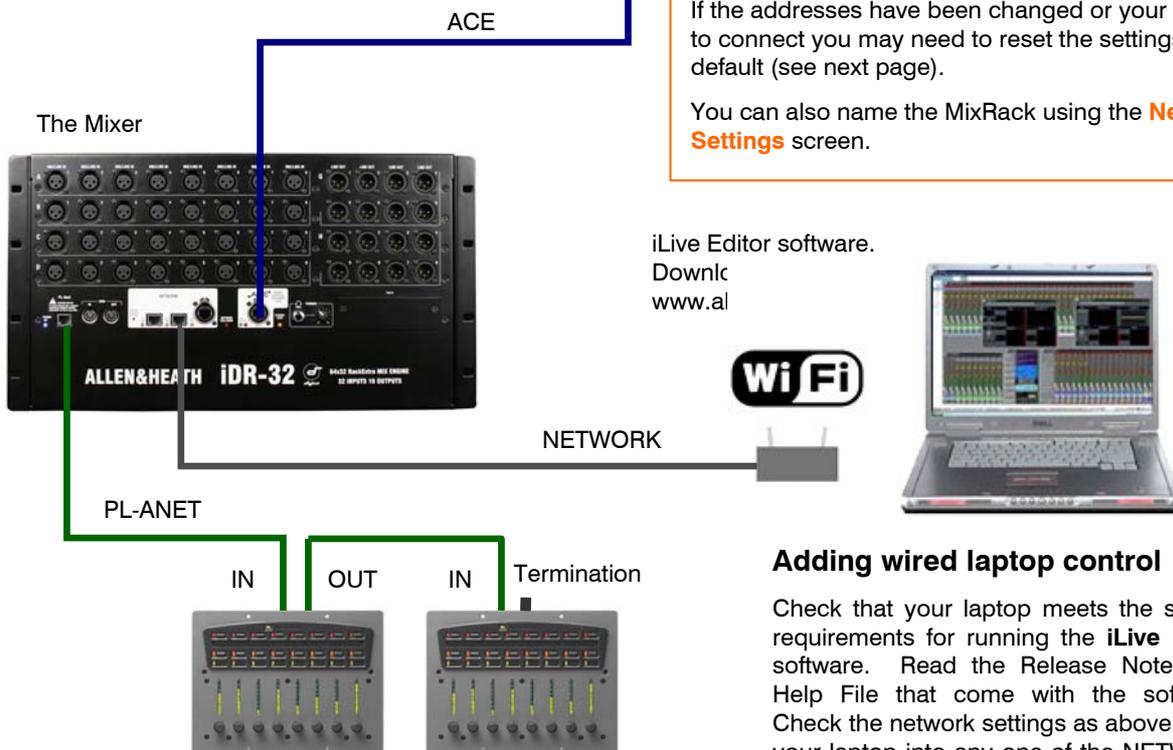
MixRack   192.168.1.1 Sub mask 255.255.255.0
Surface   192.168.1.2
TouchScreen   192168.1.3

We recommend you set Subnet mask 255.255.255.0 and:

Laptop IP 192.168.1.10 if wired LAN connection
Router IP 192.168.1.245
Router DHCP range 192.168.1.100 to 192.168.1.200

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.

iLive Editor software.
Downlo
www.al

WiFi

NETWORK

Adding wired 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. Check the network settings as above. Plug your laptop into any one of the NETWORK ports at the Surface or MixRack. Start the **iLive Editor** program and connect online or offline.

Adding wireless control

With a wireless router plugged into any iLive NETWORK port you can run **Editor** on a wireless laptop, **MixPad** or **OneMix** app on iPads and **Tweak** on an iPhone.

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.
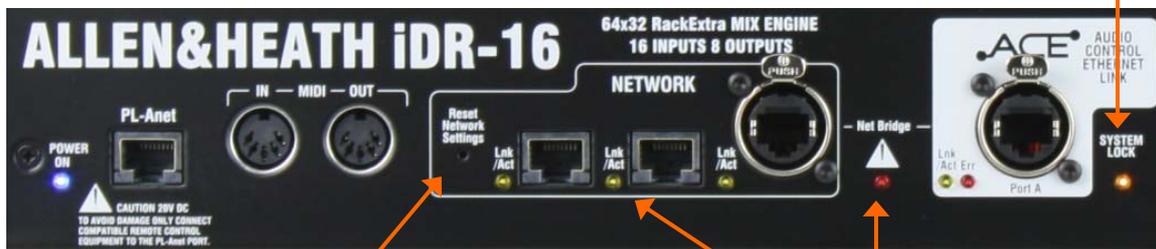
Boot up time

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.

Status indicators

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

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.

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.

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.

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,

xDR-16 expander to increase the number of input and output sockets and allow distributed audio.

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 using popular industry standards such as Dante, MADI or EtherSound.

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.

EtherSound Industry standard audio network able to handle complex routing.

MADI Industry standard commonly found in recording and broadcast systems. Allows many options to network signals to multiple devices. Can work with external word clock.

MMO Provides several popular digital formats: ADAT, Aviom™, Hearbus™, and links to Allen & Heath iDR Series mix processors and output expanders.

ACE™ Proprietary Allen & Heath 64 channel bi-directional point-to-point audio link, the most affordable and popular option for linking and expanding iLive systems.

Dante Ethernet based networking that can connect multiple devices using standard Gigabit switches and record direct to PC or Mac.
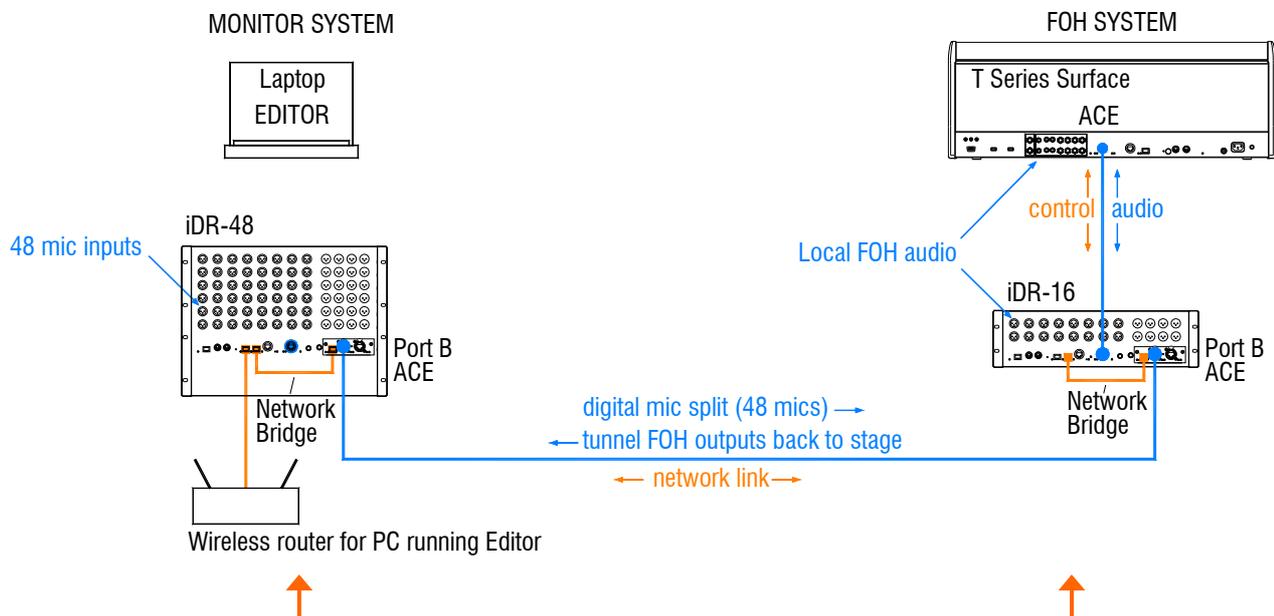

Waves Connect to a SoundGrid server to run popular low latency plug-ins or to a PC for multitrack recording.

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.

MONITOR SYSTEM

Laptop
EDITOR

FOH SYSTEM

T Series Surface
ACE

control   audio

Local FOH audio

iDR-48

48 mic inputs

Port B
ACE

Network
Bridge

Wireless router for PC running Editor

iDR-16

Port B
ACE

Network
Bridge

digital mic split (48 mics) →
← tunnel FOH outputs back to stage
← network link →

Master system   The iDR-48 provides a large number of **mic inputs for sources on stage, and plenty of o**utputs 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.

Check the Master **Port B ACE Mode** setting in the **MIXRACK / Mix Pref** screen.

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 a Surface to the iDR-48 so that each engineer works with their own Surface and rack. 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 / Mix Pref** screen Quick Input Setup function.
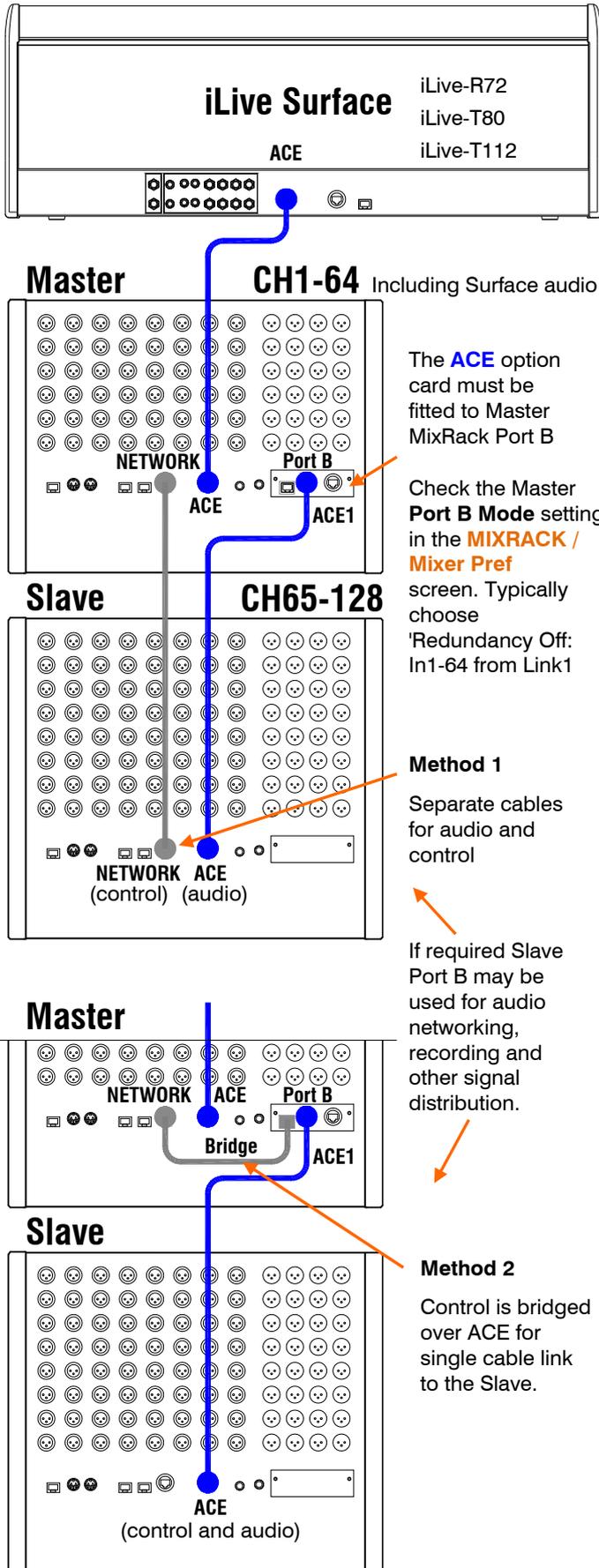
Feeds to the house PA can be routed from FOH or **tunnelled** back to the stage via Port B. These are patched to Port B at the sending end and to the iDR-48 sockets at the receiving end using the **OUTPUTS** screen.

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.

iLive Surface
iLive-R72
iLive-T80
iLive-T112
ACE

Master **CH1-64** Including Surface audio

NETWORK Port B
ACE ACE1

Slave **CH65-128**

NETWORK ACE
(control) (audio)

Master

NETWORK ACE Port B
Bridge ACE1

Slave

ACE
(control and audio)

The **ACE** option card must be fitted to Master MixRack Port B

Check the Master **Port B Mode** setting in the **MIXRACK / Mixer Pref** screen. Typically choose 'Redundancy Off: In1-64 from Link1

Method 1

Separate cables for audio and control

If required Slave Port B may be used for audio networking, recording and other signal distribution.

Method 2

Control is bridged over ACE for single cable link to the Slave.

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.
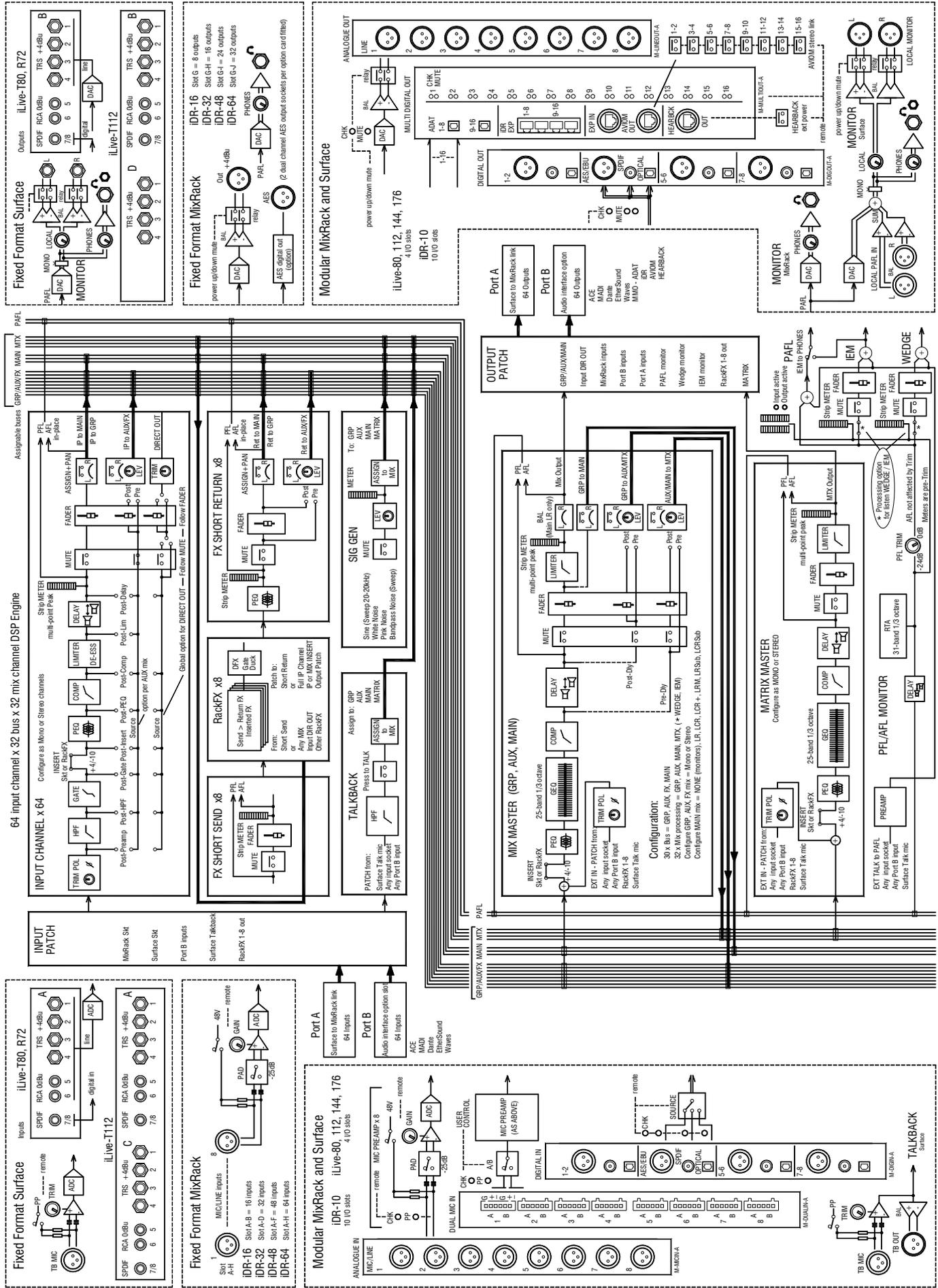
Limited One Year Manufacturer's Warranty

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.