ALLEN&HEATH

iDR-8

Digital Audio Mix Processor

USER GUIDE

Hardware Configuration

For software configuration refer to the iDR System Manager Help file

Publication AP4530

Limited One Year 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 ALLEN & HEATH Limited or its authorised agent as soon as possible for repair under warranty subject to the following conditions

Conditions Of Warranty

1. The equipment has been installed and operated in accordance with the instructions in this User Guide.
2. 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.
3. Any necessary adjustment, alteration or repair has been carried out by ALLEN & HEATH or its authorised agent.
4. The defective unit is to be returned carriage prepaid to ALLEN & HEATH or its authorised agent with proof of purchase.
5. Units returned should be packed to avoid transit damage.

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

iDR-8 User Guide AP4530 Issue 3

ALLEN&HEATH

Allen & Heath Limited
Kernick Industrial Estate, Penryn, Cornwall, TR10 9LU, UK

http://www.allen-heath.com

⚠ Important Safety Instructions – Read First

Read instructions: Retain these safety and operating instructions for future reference. Heed all warnings printed here and on the equipment. Follow the operating instructions printed in this User Guide.

Do not open: There are no user serviceable parts inside. Refer any service work to competent technical personnel only.

Power sources: Connect the unit to mains power only of the type described in this User Guide and marked on the rear panel. The power source must provide a good ground connection.

Power cord: Use the power cord with sealed mains plug appropriate for your local mains supply as provided with the equipment. If the provided plug does not fit into your outlet consult your service agent. Route the power cord so that it is not likely to be walked on, stretched or pinched by items placed upon or against it.

Grounding: Do not defeat the grounding and polarisation means of the power cord plug. Do not remove or tamper with the ground connection in the power cord.

Ventilation: Do not obstruct the ventilation slots or position the unit where the air flow required for ventilation is impeded. If the unit is to be operated in a rack, plinth or other furniture ensure that it is constructed to allow adequate ventilation.

Moisture: To reduce the risk of fire or electric shock do not expose the unit to rain or moisture or use it in damp or wet conditions. Do not place containers of liquids on it which might spill into any openings.

Heat: Do not locate the unit in a place subject to excessive heat or direct sunlight as this could be a fire hazard. Locate the unit away from any equipment which produces heat such as power supplies, power amplifiers and heaters.

Environment: Protect from excessive dirt, dust, heat and vibration when operating and storing. Avoid tobacco ash, drinks spillage, and smoke, especially that associated with smoke machines.

Handling: To prevent damage to the controls and cosmetics avoid placing heavy objects on the equipment surfaces, scratching the surface with sharp objects, or rough handling and vibration. Protect the controls from damage during transit. Use adequate packing if you need to ship the unit. To avoid injury to yourself or damage to the equipment take care when lifting, moving or carrying the unit.

Servicing: Switch off the equipment and unplug the power cord immediately if it is exposed to moisture, spilled liquid, objects fallen into the openings, the power cord or plug become damaged, during lightening storms, or if smoke, odour or noise is noticed. Refer servicing to qualified technical personnel only.

Installation: Install the unit in accordance with the instructions printed in this User Guide. Do not connect the output of power amplifiers directly to the unit. Use audio connectors and plugs only for their intended purpose.

⚠ Important Mains Plug Wiring Instructions

The unit is supplied with a moulded mains plug fitted to the AC mains power lead. Follow the instructions below if the mains plug has to be replaced.

The wire which is coloured Green/Yellow or Green must be connected to the terminal in the plug which is marked with the letter E or with the Earth symbol.

This appliance must be earthed.

The wire which is coloured Blue or White must be connected to the terminal in the plug which is marked with the letter N.

The wire which is coloured Brown or Black must be connected to the terminal in the plug which is marked with the letter L.

Introduction

This user guide is intended for the technical engineer in charge of the installation and configuration of the audio system. It is not intended for the day-to-day operator who should be provided with operating instructions specific to the application by the installer. The function, application, installation and technical details of the **iDR** hardware are described. It is kept short and to the point so that you can quickly find the information you need. The Technical Specification at the rear of the guide provides a complete and quick reference to the system parameters.

Please note : For details on the configuration of the DSP resources please refer to the Windows™ Help file which is part of the **iDR System Manager** software provided with the unit.

iDR is a growing system of components. Keep up to date with the latest additions and development by referring to our web site http://www.allen-heath.com. The latest version of the operating and system configuration software, communication protocols, user guide, application notes and additional support information can be downloaded.

For information on the status and availability of the features described in this user guide and any changes and new additions please refer to the Release Notes which come with the current version of operating software.

We are able to offer further product support through our world-wide network of approved dealers and service agents. Our web site provides full company and product range information. To help us provide the most efficient service please keep a record of the serial number, and date and place of purchase to be quoted in any communication regarding this product.

The guide is structured for the technical user. The information is displayed as follows:

Description Control, connector and system functions are briefly described together with related technical specifications.

ⓘ **Information** Where you see this symbol you will find an explanation or background information on a particular topic.

🖥 **Software** Where you see this symbol you will find a reference to the Allen & Heath iDR System Manager software required to configure the unit.

⚠ **Warnings** For your own safety and to prevent damage to equipment make sure you read and adhere to all warnings.

Model	
Serial Number	
Place of Purchase	
Date of Purchase	

Contents

Welcome to the iDR-8

The Allen & Heath **iDR** system is a set of components whose hardware, control and signal processing flexibility make it well suited to many installed, live sound and special project applications. The 2U rack or desk mount **iDR-8** is the main unit in the **iDR** system having all the DSP (digital signal processing) power needed for 16 input and 16 output channels. It has 8 XLR analogue mic/line inputs and 8 XLR analogue line outputs. You can add a further 8 inputs and/or 8 outputs bringing it up to a maximum 16x16 matrix by plugging in the **iDR-in** and/or **iDR-out** audio expanders. The signal can be routed at three key points: the input source patch bay, central matrix, and output source patch bay.

Although the **iDR** does not work with networked audio, the expanders can be located up to 250 metres away so providing remote analogue audio inputs and outputs connected using CAT5 cables. You can also daisy chain multiple **iDR-8** units in a distributed system. The units are linked using an 8 channel wide bus which plugs into the digital expander ports. Maximum matrix at any unit is 16x16 which includes the interconnecting bus. Several **iDR-8** units can be linked in this way, but you can have only one **iDR-in** and one **iDR-out** expander per system. This is described later.

A stereo audio monitor is included. This has both input and output TRS jacks so that the monitor can 'ripple through' chained **iDR** units. It also feeds a front panel headphones socket for local monitoring of any point in the audio signal path. The monitor can access the input and output channels so that they can be used with the matrix. For example, you can achieve a 10x10 matrix from an unexpanded **iDR-8**. A built-in signal/noise generator provides a further source which can be routed to the input channels for test and line up purposes.

There are many operator control possibilities. You can configure the 16 front panel keys and 32 3-colour LEDs, and use the DR-Link port to add up to 3 **iDR-switch** units for up to 72 additional switch closure and 48 open-collector logic outputs. In addition you can choose two of the following: MIDI, the Sys-Net serial port to interface with third party remote controllers, RS232 for modem communication, and the PL-Anet serial port for running a network of Allen & Heath PL wall plates and controllers.

The **iDR-8** features networked control. It is configured using the iDR System Manager software via an Ethernet port either connected directly to the installer's PC, or over a TCP/IP network. The PC control can be password protected for security. Once configured it runs stand alone using its built-in iDR Unit software with stored settings. **iDR** units can also be operated from networked PC workstations running PL Client software configured as 'virtual' wall plates by the installer using PL Designer software. An RS232 modem port lets the installer remotely interrogate units. A front panel RS232 port allows easy operating code update.

The **iDR** system offers tremendous flexibility. The system set up is stored in patches. Up to 99 patches can be programmed. You can decide which parameters are affected by each. To make best use of this it is important that you plan your installation carefully before you start. You can try out, prepare and archive different configurations offline before plugging in. Virtual panels and controllers are displayed so you can simulate how it will work for real. You can program the unit name, clock and IP address, and check diagnostic information and audio signal presence using the front panel menus accessed by removing the face plate. You can also attach your custom label here so that it is protected when the plate is refitted. For further information on the configuration of the unit please refer to the Help files which come with the software.


IDR-8 User Guide
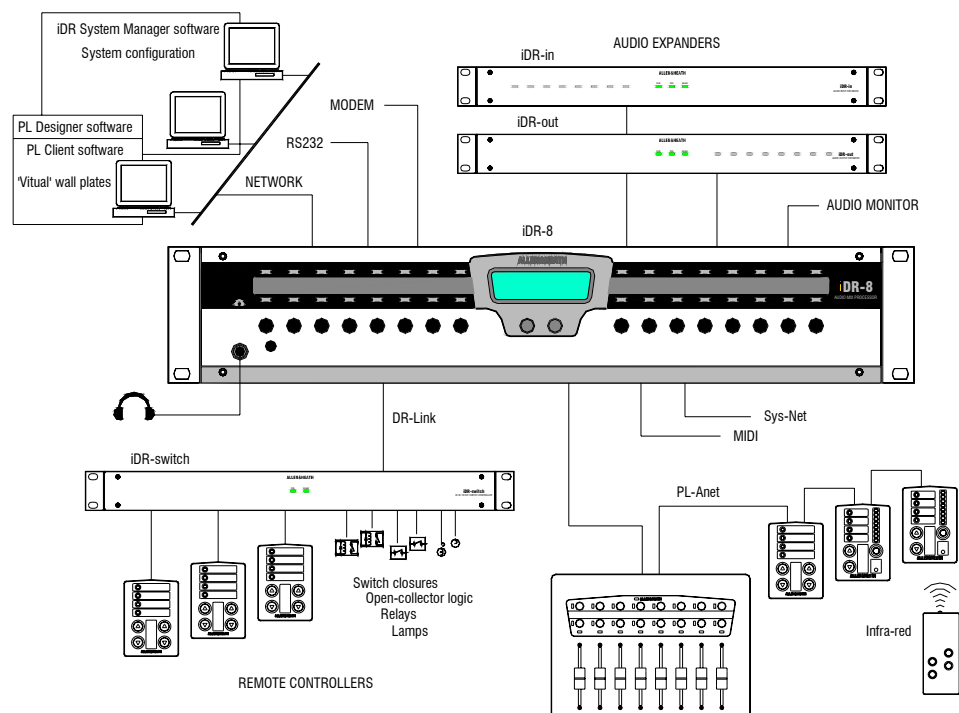
Main Features

- **iDR-8 main processing unit** 2U, 8 mic/line in, 8 line out audio mix processor with 16x16 channel matrix. The heart of the iDR system, it features 2 24bit Motorola DSPs.

- **Daisy chain iDR-8 units** Any number may be interconnected via the 8 channel digital bus using CAT5 cable. Many possibilities for flexible sound system solutions.

- **iDR-in** 1U, 8 mic/line input expander unit. Expands the number of inputs to 16. Can be up to 250 metres away for remote audio. Uses CAT5 digital link. One input expander per iDR system.

- **iDR-out** 1U, 8 line output expander unit. Expands the number of outputs to 16. Can be up to 250 metres away for remote audio. Uses CAT5 digital link. One output expander per iDR system.

- **iDR-switch** 1U add-on unit providing 24 contact closure switch inputs and 16 open collector logic outputs. Up to 3 units may be daisy chained for a maximum 72 switch and 48 logic outputs. Each unit can be separated by up to 250 metres. Connects via the DR-Link serial port.

- **PL wall plates and remotes** The Allen & Heath range of optional wall plates and controllers for remote switch, rotary encoder, infra-red, fader, LED indicator and logic output control. Connects via the PL-Anet serial port.

- **Desk top or 19" rack mounting** Rubber feet and removable rack ears provided.

- **Universal mains power input** automatically detects worldwide voltage from 100V to 240V AC.

- **Removable face plate** for accessing front panel setup menu system, RS232 connector and status indicators. Also provides a protected custom label facility.

- **XLR mic/line inputs** Electronically balanced, pin 2 hot, for microphone or line level equipment. Soft control of gain, pad switch and 48V phantom power. No internal adjustments needed.

- **XLR line outputs** Electronically balanced, pin 2 hot, 0dBu with +18dB headroom.

- **Stereo audio monitor** with front panel headphones socket and rear panel TRS jacks. Can monitor any point in the audio chain using manual or mouse selection. Can be used with the audio matrix as two additional channels, for example providing a 10x10 matrix from an unexpanded **iDR-8**.

- **Network port** connects to a PC or network for control using the iDR System Manager, PL Client software, Telnet, TCP/IP, remote access etc.

- **RS232 ports on front and rear** for connection to a PC for code update and to a modem for remote system interrogation.

- **SysNet port** for control by third part touch screens and other remote controllers.

- **MIDI port** IN, OUT and THRU sockets provided for remote control using show controllers and other MIDI equipment.

- **16 Front panel soft keys** can be assigned by the installer as level, mute or patch recall with different types of press action. Similar applies to the **iDR-switch** functions.

- **32 Front panel 3-colour soft LEDs** can be assigned by the installer as signal meters, mute or patch related indicators.

- **Front panel LCD display** A 16 character 2 line LCD can display combinations of clock, patch name, unit name and user defined text. This can be linked to the patches.

- **iDR System Manager software** for system setup. Once configured the PC can be removed and the system operated stand alone.

- **PL Designer and Client software** for creation of 'virtual' wall plates and controllers that can be run from networked PC workstations. Operator control can be restricted by the installer.

- **Powerful fixed architecture** with full processing on all 16 input and output channels. Familiar GUI makes setup and control an easy task.

- **48kHz operation** The **iDR-8** has processing for a full 16x16 matrix running at 48kHz. An upgrade to 96kHz may become available in the future.

- **Patchbays and crosspoint matrix** The input source patchbay selects any physical input to any input channel. The output patchbay selects any output channel to any physical output. The 16x16 matrix allows independent level control at each crosspoint.

- **Channel stereo linking and grouping** Input and output channels can be linked for true stereo operation, and grouped for master fader control.

- **Configurations** can be named, archived and opened using PC files. These store the system setup parameters such as communication options, names, stereo linking, scheduled events and set of patches.

- **Patches** Up to 99 patches can be created, named and stored within the configuration file. A patch can work with any number of selected parameters including signal processing, soft key and LED settings. This provides a unique flexibility in setting up complex changes with simple operator control.

- **Time and day of week** for display on the unit LCD, and for scheduled event patch recalls using the internal **iDR-4** clock.

- **Naming** Input channels, output channels, fader groups and PL devices can be named.

- **Channel processing** Includes faders, mute, polarity reverse, delay, parametric EQ, crossover filters noise gates, compressors and limiters.

- **Ducking, AMM and paging** System functions include a 16 priority level ducker, automatic mic mixer and two independent pagers.

- **Signal generator** provides sine wave, white, pink and band pass noise signals for system line up and test.

Front Panel Overview
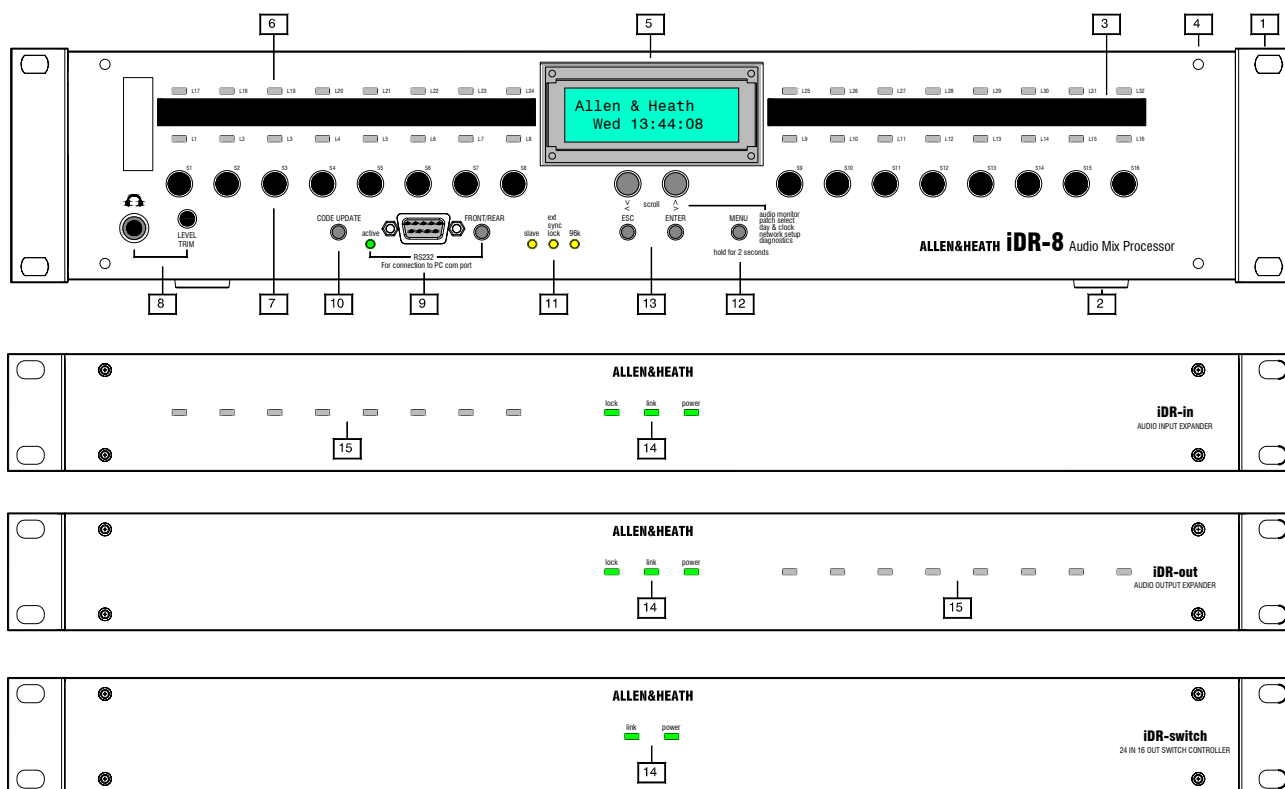
Shown with face plate removed.

1 **Rack ears** Mount the unit into a standard 19" equipment rack. Can be removed for stand alone desk or shelf mounting.

2 **Rubber feet** Provided separately. Press these into the base holes for stand alone desk or shelf mounting.

3 **Write-on label strip** To mark up the soft key and LED functions using a suitable marker pen or adhesive label. A Windows™ Word template is provided with the software.

4 **Face plate fixing holes** Fit the face plate using the four M3 screws provided once the unit is configured and labels fitted. A suitable 2mm hex Allen key is supplied.

5 **LCD display** Displays system information on a backlit 2x16 character LCD display. You can configure this to display different combinations of clock, patch name, unit name and user defined text.

6 **Soft LEDs** 32 3-colour LED indicators referred to as 'soft' because they can be assigned by the installer as audio meters, mute or patch related indicators. They can display red, green or yellow.

7 **Soft keys** 16 momentary action switches which can be assigned by the installer as level, mute or patch recall.

8 **Headphones output** A front panel socket is provided for stereo headphone monitoring. The level trim can be adjusted using a flat bladed screwdriver

9 **Front panel RS232 port** This is used for code update from a PC via its RS232 COM port. It can also be used for system configuration or checking using iDR System Manager software but the faster network port is recommended. Pressing the FRONT/REAR switch selects either the front or rear RS232 port. The active LED lights when the port is available.

10 **Code update switch** Puts the unit into code update mode ready to accept new operating code from a PC. Status is shown on the LCD.

11 **Status LEDs** Both the slave and ext sync lock LEDs light when the unit is correctly working as a slave in a daisy chained iDR system. The 96k LED is available for a possible future upgrade.

12 **Menu key** Press and hold this key for 2 seconds to access the setup menus. These let you set up the clock, unit name, TCP/IP and PPP communication parameters, select points in the channel signal path to monitor, and check system diagnostics.

13 **scroll keys** 4 keys are used to access the setup menus and change parameter values. The △ and ▽ keys are also used when the soft keys are assigned as up/down level controls.

14 **Expander status LEDs** These display the connection status. The link LED lights when communication is established via the DR-Link port. The lock LED lights when digital audio is working correctly.

15 **Expander soft LEDs** Can be assigned as audio meters, mutes or patch related indicators in the same way as the main iDR unit.

Rear Panel Overview
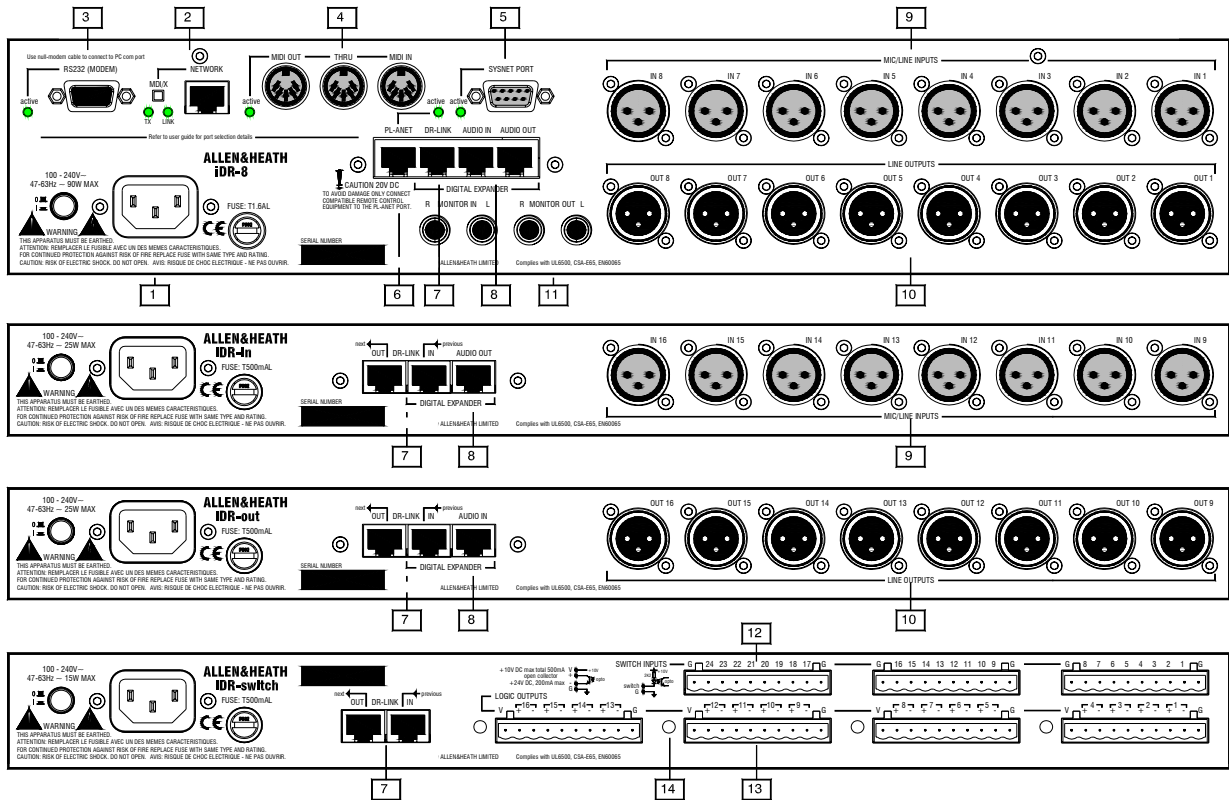
1 **Mains input** Use the IEC lead with moulded mains plug suitable for your local mains voltage. The protection fuse rating is marked on the rear panel. The on/off switch is positioned on the rear panel to prevent accidental operation.

2 **Network port** RJ45 socket for connection to an Ethernet network or PC using UTP CAT5 cable. This port is recommended for configuring the system with iDR software.   The MDI/X switch selects network or direct to PC operation. The link LED lights when communication is established. The TX LED lights when data is communicated.

Note: The RS232, MIDI, SysNet and PL-Anet control ports are not all available at the same time. A combination of two is selected using iDR System Manager. The associated active LED lights when the port is available.

3 **RS232 (MODEM) port**   This is used for connection to a modem so that the unit can be interrogated by a remote PC over a standard telephone line. It can also be used for system configuration using iDR System Manager software but the faster network port is recommended. Pressing the front panel switch selects either the front or rear RS232 port.

4 **MIDI port**   Standard opto-isolated MIDI port with IN, THRU and OUT connectors.

5   **SysNet port**   An RS232 serial port for communication with third party remote controllers running the Allen & Heath SysNet protocol.

6   **PL-Anet port**   An RS485 serial port for communication with a network of Allen & Heath PL wall plates and remote controllers using CAT5 STP cable.

7 **DR-Link port**   RJ45 socket for control of iDR audio and logic expander units using CAT5 STP cable. IN and OUT ports are provided on the expander units so that the control can be daisy chained through a system with more than one expander.

8   **Audio expander ports**   RJ45 sockets for communicating 8 channel digital audio between the **iDR-8** and its expanders using CAT5 STP cable.   Two cables are required between the expander and **iDR-8**, one for the audio, the other for DR-Link control.

9   **Mic/Line inputs**   Balanced XLR inputs for microphone and line level sources. Adding the **iDR-in** expands the **iDR-8** to 16 inputs.

10   **Audio outputs**   Balanced XLR line level outputs with maximum +18dBu level. Adding the **iDR-out** expands the **iDR-8** to 16 outputs.

11   **Monitor inputs and outputs** Balanced TRS jacks for L and R monitor inputs and outputs. These provide a line level version of the front panel stereo headphones output and can daisy chain through multiple iDR units.

12   **Switch closure inputs** These are provided on the **iDR-switch**. They can be hard wired from remote wall plate and controller switches and relays.

13   **Open collector logic outputs** These are provided on the **iDR-switch**. They can be used to control LEDs, lamps, relays and other devices.

14   **Earth terminals** These are provided to earth (ground) the switch and logic output cable shields.

System Processing Overview

The **iDR-8** has 8 analogue inputs and 8 analogue outputs. However, it has the onboard DSP processing for a full 16 input and 16 outputs. The extra 8 inputs and/or outputs are available when the **iDR-in** and/or **iDR-out** audio expanders are added. Only one of each may be added. This means that you can create an 8x8, 16x8, 8x16 or 16x16 system to suit your requirements. The stereo monitor input and output can also be added into the matrix in a non-expanded **iDR-8** to create a 10x10 system. **iDR-8** and **iDR-4** units can be daisy chained together using the 8 channel wide digital expander bus to create even more flexible systems with additional local inputs and outputs and a maximum 16x16 matrix.

The system architecture illustrating the expanded iDR is shown below:

PHYSICAL INPUTS — INPUT CHANNELS — OUTPUT CHANNELS — PHYSICAL OUTPUTS

NAME NAME

ANALOG INPUT · +48V · GAIN · PAD · ADC · SOURCE · DELAY · PEQ4 · GATE · ACTIVE · COMP · GR · FADER · MUTE · MIX MATRIX · DELAY · PEQ8 · FADER · MUTE · LIMIT · GR · SOURCE · DAC · ANALOG OUTPUT

EXPANDER INPUT · EXPANDER OUTPUT

FADER · SIG GEN · MUTE · FREQ · OSCILLATOR PINK NOISE WHITE NOISE 1/3 OCT BP · MONO · SEL · SIDECHAIN · FILTER · STEREO

PEQ8: HF SHELF, LF SHELF, BELL, HF FILTER, LF FILTER, XOVER FILTER

PAGER · AMM · DUCKING

MONITOR INPUT L R · ADC · ADC

ACTIVE MONITOR BUS · FADER · MUTE · SOURCE · DAC · DAC · PHONES TRIM · MONITOR OUTPUT L R

The channel architecture illustrating the processing blocks is shown above. For detailed instructions on using these please refer to the Help file which comes with the iDR System Manager software.

Physical inputs and outputs These are the hardware audio connections including XLRs, digital expanders, headphones and monitor.

Input and output channels These are processing channels. The input channels can be sourced from any physical input. The physical outputs can be sourced from any output channel. The input and output channels are interconnected through the crosspoint matrix. They are routed to and from the physical connections via the source patchbays. The **iDR-8** has enough processing built in for 16 input and 16 output channels when in 48kHz mode. The **iDR-in** and **iDR-out** expanders simply convert between analogue audio and the digital signals working with the **iDR-8** 16x16 matrix.

Analogue inputs The **iDR-8** and **iDR-in** each have 8 analogue XLR inputs. These feed high grade balanced mic preamp circuits. They accept a wide range of microphone and line level signals. Gain, pad and 48V phantom power switching are controlled using the iDR System Manager software so they can be part of the recallable patch system. There are no trimmers or internal adjustments needed.

Analogue outputs The **iDR-8** and **iDR-out** each have 8 analogue XLR line outputs. These are balanced and can produce up to +18dBu maximum signal level.

ADC and DAC converters These convert the analogue signals into digital (ADC) and processed digital signals into analogue (DAC). High grade 24bit converters are used.

Expander input and output 8 Channels of audio are communicated between iDR units using these RJ45 ports. The digital signals are fed to and from the associated virtual patchbays. Routing the signals through the patchbays in this way provides the flexibility for common sources to be networked between multiple iDR units using CAT5 cable.

Monitor inputs and outputs A front panel stereo headphones output is provided. Balanced line level L and R inputs and outputs are available on the rear panel. The inputs feed the active monitor bus and can also be routed into the source patchbay. The outputs are fed from a patchbay which gets its source from the active monitor bus or any output channel. In this way these connections can be used either as a monitor system or as channels in their own right.

Signal generator Provides another selectable source feeding the input channels through the patchbay. Variable frequency sine wave, pink noise, white noise or 1/3 octave band pass noise can be selected. These can be used for system line up and testing. The level is controlled using the fader and mute function.

Source patchbays These connect the physical inputs and outputs to the channels so providing a flexible 'virtual patchbay' routing system. One physical input can feed more than one input channel. One output channel can feed more than one physical output. Note that, as with any physical patchbay, you cannot route two sources into one channel, or two channels into one output.

Mix matrix This is the routing 'heart' of the system fed by all 16 input channels, and feeding all 16 output channels. It is known as a 16x16 crosspoint matrix. The signal can be switched or have its level independently controlled at any point. It is the matrix which provides the key to independent multi-source zone routing and level control.

Delay   Each input and output channel provides delay from 0 up to 340ms. It can be adjusted in ms, metres or feet and has compensation for temperature.

PEQ The input channels each provide a 4 band fully parametric equaliser, the output channels an 8 band equaliser. Compared with the graphic EQ these are by far more powerful and accurate tools for adjusting frequency response.   Selectable band types include HF shelf, LF shelf, bell, notch, HPF, LPF and crossover filter type. Variable or constant Q width can be used.   The resulting response is displayed on a frequency curve.

Gate   The input channel noise gate is used to turn the channel off when its level falls below a preset 'threshold' level. This shuts off unwanted noise such as ambient background pickup, equipment hiss and hum and so on. It provides threshold, depth, hold, attack and release controls. The sidechain can be switched in for frequency selective gating.

Compressor   The input channel compressor controls the dynamics of the signal. It can, for example, help the intelligibility of the human voice by reducing the gain of high levels and increasing the gain of low levels, in effect squashing the levels into a more manageable range.   The compressor provides threshold, ratio, hard/soft knee, makeup gain, attack and release controls. The sidechain can be switched in for frequency selective compression such as de-essing or LF contour.

Sidechain filter   This input channel filter can be switched into the gate and/or compressor so that the dynamic response is tailored according to frequency.   For example, you can reduce the 'pumping' effect of a compressor by slightly cutting the low frequencies in the sidechain, or prevent false opening by triggering a noise gate on the resonant frequency of an instrument using a bell response sidechain filter.   Full type and parameter control is provided.

Limiter   Each output channel includes a protection limiter to control the maximum level allowed at the outputs. This is typically used to protect loudspeakers and control maximum SPL listening levels. Threshold, attack and release can be controlled.

Faders, mute and polarity   The input and output channels each provide a fader, mute switch and polarity reverse. The fader offers +5dB boost above the unity gain '0' position. The matrix provides variable level crosspoints with independent fader control.

Groups and stereo linking   Faders can be grouped so that a master fader takes control of assigned input or output faders. Channels can be linked for stereo operation with single fader level control and linked processing throughout the audio path.

Active monitor bus   Any point in the audio signal path can be monitored. This is selected manually or by moving the mouse over an active window. The monitor can 'ripple through' several iDR units. With no monitor point selected, the signal from the previous iDR unit is passed through to the output. This means that one monitor output can be used to listen to any point in a multiple iDR system.

Metering   Full metering is provided from all the points marked with a meter bar in the diagram. Sidechain level, gain reduction, and stereo monitor meters are included.

Pager   Two independent paging systems are provided.   They are fully configurable with selectable paging mic, zones affected, and variable ducker depth.   They can be triggered from any soft switch and use any soft LED for indication. The switch action can be momentary or latching.

Ducking   Any input can override any combination of outputs with variable depth, threshold and release. There are 16 assignable priority levels. Ducking is useful for overriding background music during announcements, recorded messages, jukebox playback and so on.

AMM   The automatic mic mixer is popular in conference situations where several microphones can contribute to the mix. Microphones are only opened when they are being spoken into. The overall gain is reduced as more microphones are opened. The amount by which they are reduced is known as the NOM (number of open mics) setting. This maintains a more constant level and helps stop feedback.   The ambient level is the sum of all the mic channels. Threshold adjusts the point at which the microphone opens above the ambient level.

Level sense switching   The **iDR** logic outputs can be switched when channel signal activity is sensed. These could be used, for example, for video broadcast of a conference to switch between cameras when different microphones are spoken into.

Naming   Each input and output channel, input and output fader group, PL device and patch memory can be named for identification in the system.

Getting Started - Check the Contents
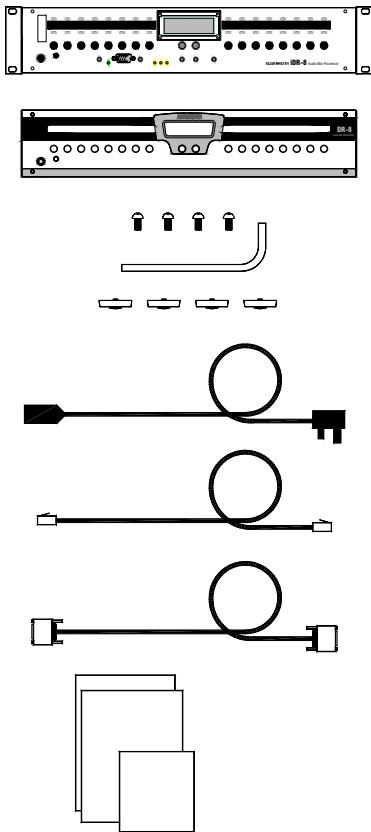
Keep the product packing in case you need to ship the product in the future. You should find the following components:

1x **iDR-8** UNIT. This is packed with its face plate removed and rack ears fitted. The ears can be removed for desk mounting.

1x **iDR-8** FACE PLATE. Separately packed so that you can start by configuring the unit using its front panel menu system.

4x SCREWS M3x12mm hex dome head. Part number AB4814. Use these to secure the face plate to the unit.

1x ALLEN KEY 2mm hex. Part number AT4819. For fitting the face plate screws.

4x RUBBER FEET. Part number AK0102. Press these into the underside holes if you want to desk mount the unit.

1x IEC MAINS LEAD with moulded plug suitable for connection to your local mains supply.

1x CAT5 UTP CABLE 2 metre RJ45. Part number AH4818. Connects the unit to your PC or to a network.

1x RS232 CABLE. Part number AL3653. Connects the unit to your PC for operating code update.

1x DOCUMENTATION PACK including Safety Sheet AP3345, this user guide AP4530 and the Registration Card AP3594.

The iDR System Manager Software Available

The self-extracting file iDRnnn.exe is available from the Allen & Heath web site. 'nnn' is the version number. For example iDR300.exe is version number V3.00. Once installed the software provides:

IMPORTANT: Before installing check the Allen & Heath web site to ensure you have the latest version.

README FILE Read this before starting.

RELEASE NOTES This file contains important notes about the related version of the software. Read before starting.

iDR SYSTEM MANAGER APPLICATION to configure and control the iDR system using a PC running Windows™.

WINDOWS™ HELP FILE for the iDR System Manager application.

iDR UNIT OPERATING CODE This is pre-installed in the **iDR-8** unit. However, check that it is the latest version. Update the code as described later if it is not.

HYPERTERMINAL .ht FILES for setting up communication between the PC and **iDR-8** for updating the operating code. Files are provided for COM1, 2 and 3.

SYSNET, TELNET and MIDI PROTOCOLS pdf files explaining how to use the SysNet and MIDI ports.

PL-Calculator, PL-Client and PL-Designer software for configuring physical and virtual wall plates and controllers.

CONFIGURATION FILES Two .cfg files are provided, DEFAULT and RESET. These give you a useful starting point.

LABEL TEMPLATE a Windows™ Word file for creating a customised label to fit to the **iDR-8** front panel. Use this to identify the key and LED functions.

Installing the iDR-8

The **iDR-8** and its expanders are supplied ready for 19" rack mounting. For desk top or shelf mounting remove the rack ears and fit the 4 press-in rubber feet provided. Use Torx (star head) screwdrivers.

Fit the face plate once you have configured the settings with the front panel menu system and fitted any labels required to identify the key and LED functions. The plate is packed separately. Fit this using the 4 hex screws and the 2mm Allen driver provided.

Allow adequate space behind the units for plugging in the connectors. The dimensions are shown below.
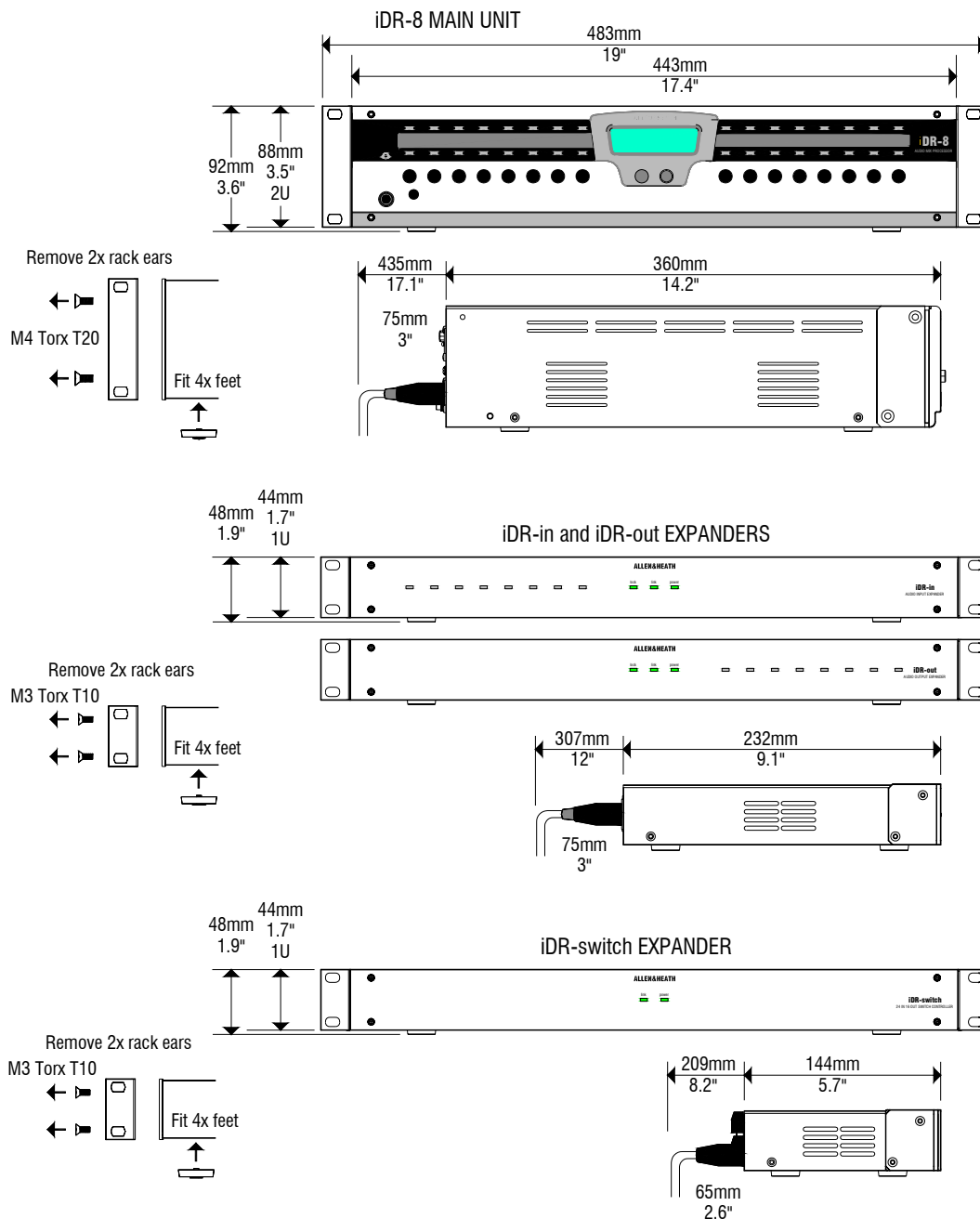
Plug the cables into their correct sockets. We recommend that you colour code or label the cables to avoid errors when replugging them in the future.

⚠ **Do not obstruct the side ventilation slots. Ensure adequate air flow around the units.**

⚠ **Do not install the units directly above or below heat or electromagnetic generating equipment such as power supplies and amplifiers.**

⚠ **To avoid damage to the internal assemblies do not fit screws or drill through the case metalwork.**

⚠ **Do not remove the cover of the iDR unit. There are no user serviceable parts inside. All configuration is carried out using the front panel menus and iDR System Manager software running on a PC**

iDR-8 MAIN UNIT

483mm 19"
443mm 17.4"
92mm 3.6"
88mm 3.5" 2U

Remove 2x rack ears
M4 Torx T20
Fit 4x feet

435mm 17.1"
360mm 14.2"
75mm 3"

iDR-in and iDR-out EXPANDERS

48mm 1.9"
44mm 1.7" 1U

Remove 2x rack ears
M3 Torx T10
Fit 4x feet

307mm 12"
232mm 9.1"
75mm 3"

iDR-switch EXPANDER

48mm 1.9"
44mm 1.7" 1U

Remove 2x rack ears
M3 Torx T10
Fit 4x feet

209mm 8.2"
144mm 5.7"
65mm 2.6"

Earthing

The connection to mains earth (ground) in an audio system is important for two reasons:

Safety - To protect the operator from a high voltage shock associated with the AC mains supply feeding the system.

Audio Performance - To shield the audio signals from interference pickup and to minimise the effects of ground loops which result in audible hum and buzz.

> ⚠ **WARNING**: **For safety it is important that all equipment earths are connected to mains earth so that exposed metal parts are prevented from carrying high voltage which can injure or even kill the operator. The installation engineer should check the continuity of the safety earth from all points in the system including microphone bodies, cables, racks and equipment panels.**

Earth is used to shield audio cables from external interference such as the hum fields associated with power transformers, lighting dimmer buzz, and computer radiation. Problems arise when the signal sees more than one path to mains earth. An earth loop results causing current to flow between the different earth paths. This condition is usually detected as mains frequency audible hum or buzz. To ensure safe and trouble-free operation we recommend the following:

Do not remove the earth connection from any iDR unit mains plug. The chassis of the unit is connected to mains earth through the power cable to ensure your safety. Audio 0V is connected to the chassis internally. If problems are encountered with earth loops use 'ground lift' switches or adaptors on connected equipment accordingly, or disconnect the screens from interconnecting audio cables at one end, usually at the destination.

Use a clean mains supply for the audio system. Ensure the audio mains supply is run separately from lighting, motor, kitchen equipment and any other potentially noisy mains supplies. Use a mains filter and surge protector for the audio supply if necessary. Take care to ensure good earthing in distributed systems such as those with audio units linked over long distances.

Connections and Cables

Use professional quality cables and connectors and check for accurate wiring and reliable solder joints.

Avoid running audio cables alongside mains, computer or lighting cables or near thyristor dimmer and power supply units. If unavoidable, cross the cables at right angles or run them in separate screened trunking to reduce the interference pickup.

Use low impedance sources such as 600Ω or less microphones to reduce susceptibility to interference. The outputs of the iDR are designed to operate at very low impedance to minimise interference problems.

Use balanced connections where possible as these provide further immunity by cancelling out interference that may be picked up on long cable runs. To connect an unbalanced source to a balanced Mic/Line input link the cold input (XLR pin3) to 0V earth (XLR pin1) at the unit. To connect a balanced Line output to an unbalanced destination, link the cold output to 0V earth at the iDR unit.

## Backup Power Supplies and Safety Standards

The iDR system is designed to conform to internationally accepted safety standards IEC60065 and UL6500. It uses a built-in mains voltage power unit to supply the various internal power rails. It is recommended that the iDR system be backed up using a UPS (uninterruptible power supply) in installations where public safety is at risk. This is a requirement when an alarm or voice evacuation system is integrated.

> ⚠ **Check which safety standards apply to your installation. A backup UPS supply may be required. The standards may also apply to the grade of cable and installation methods required.**

## Starting Offline with iDR System Manager Software
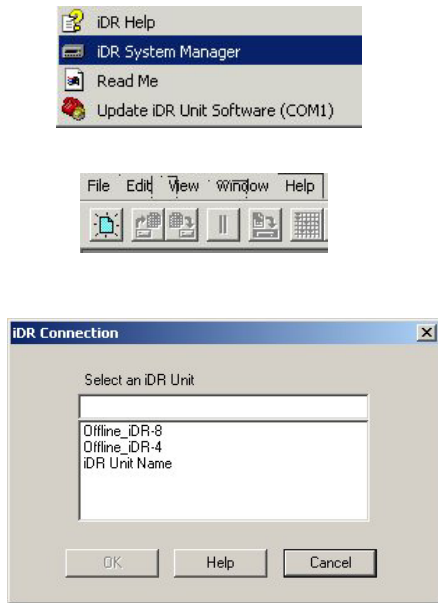
You need to install the iDR System Manager software on your PC. This requires Windows™ 95, 98, NT, ME, 2K or XP. We recommend that you check the Allen & Heath web site for the latest version. We are continually updating our software to add new features or make improvements. Download the latest version from our web site.

⚠ **IMPORTANT: Do not install this software over a previous version**. The setup utility will install the iDR System Manager into its own directory so that previous versions can be retained. A previous version can be uninstalled using the Windows™ Control Panel Add/Remove Programs application.

Run the self-extracting .exe file to install the software. Follow the on-screen instructions. Make sure you read the Release Notes before running the program. These may contain important information about the new software version.

Start the iDR System Manager from the Start / Programs / Allen & Heath menu. To open a new session click on the blue icon, press Ctrl+N, or open the New item in the File menu. Select "Offline iDR-8" to start an offline session to get familiar with the program before you connect the **iDR-8** unit. Use the Help menu to learn more about how the software works. You can archive your settings to load into the **iDR-8** later.

Turning the iDR-8 On and Off
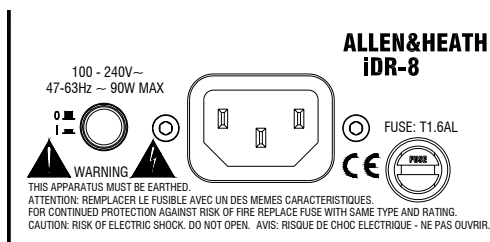
⚠ **Make sure you have read the Important Safety Instructions printed earlier. Also check that your local mains supply is compatible with that printed on the rear panel of the iDR-8. Ensure that the correct mains lead with moulded plug and IEC connector has been supplied.**

⚠ **To avoid any unexpected audible clicks or thumps always turn connected power amplifiers down or off before switching the iDR-8 or any other signal equipment on or off.**

Turn the unit on by pressing the rear panel power ON/OFF switch. The LCD display lights up and the message 'Please wait…' is displayed while the processor boots up. This is followed by a 'Recall..' message if a power-up patch is active. Finally, the normal display is shown.

Note that 'normal' display and control settings depend on the last configuration loaded and whether a power-up patch has been set.

Boot up time is normally around 10 seconds. However, this can be up to 35 seconds if the front panel menu *5.1 DHCP Setup has been set to YES and the unit is not connected to a DHCP network.

Parameters restored on power-up The **iDR-8** remembers its unit name and address settings on power up. The clock is always running so the correct time and day is retained. Configuration related parameters such as channel names, stereo linking and scheduled events are restored. Patch related parameters such as levels, EQ and soft control settings are recalled only if a power-up patch containing them has been set. If not, then all patch related parameters are reset according to factory default. Further details are provided in the section about Patches later in this user guide, and in the iDR System Manager Help file.

⚠ **IMPORTANT:** The iDR does not recall its last settings on power up. It initialises to reset state or recalls a 'power up' patch if one has been set. Read here >>>>>>>>

Checking the iDR-8 Operating Code Version

```
A&H iDR    V3.00
```

V scroll ^
<   >
ESC   ENTER   MENU
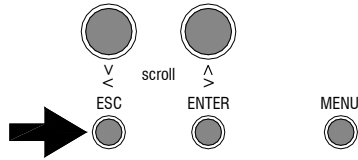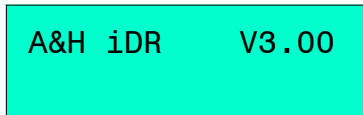
With the face plate removed, press and hold the ESC key to view the current version of operating code running in the unit.

Check that this code is the same version as the iDR System Manager software you have installed on your PC. View this by clicking on the software Help menu About item. If it is an older version then carry out the code update procedure described below. If you have several units connected over a network make sure you check each for the correct version number.

We recommend that you check the Allen & Heath web site for the latest version of software. Download and install this if it is different to that already on your PC.
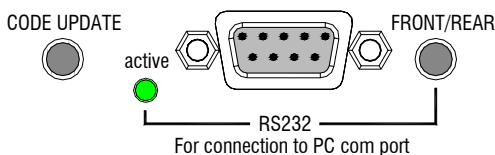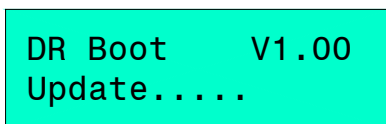
Updating the iDR-8 Operating Code

ⓘ **Operating code** is held in non-volatile memory within the **iDR-8** unit. It is the software which runs the unit once it is configured.

⚠ **IMPORTANT:** Make sure all iDR units to be controlled by the PC are running the same version software as installed on the PC.

ⓘ **HyperTerminal settings** If you prefer to use an alternative terminal or communications program, or you wish to configure the HyperTerminal connection manually, the required port settings are:

Baud Rate	115200
Data bits	8
Parity	none
Stop Bits	1
Flow Control	None
Protocol	1K Xmodem

iDR Help
iDR System Manager
Read Me
Update iDR Unit Software (COM1)

```
DR Boot    V1.00
Update.....
```

CODE UPDATE   FRONT/REAR

active

RS232
For connection to PC com port

ⓘ **Boot code** is the built-in software used by the **iDR-8** to manage its operating code. It lets the unit communicate with your PC when performing code updates. It is permanently stored and cannot be updated by the user.

The front panel RS232 port is provided for updating the unit operating code from a binary file on the PC. This is done using the Windows™ HyperTerminal application which sends the file to the iDR via the PC RS232 serial port. The file is provided with the iDR System Manager software.

NOTE: The operating code can also be updated using the **iDR** network port. This can only be done once communication with the PC is established and iDR System Manager is running. Select Upload New Program Code from the File menu.

RS232 Make sure your PC has the Windows™ HyperTerminal application installed and an available COM1 or COM2 port. Use a standard male to female RS232 lead such as the one supplied with the unit. Do not use a null modem cable.

Refer to any Release Notes which may apply. We recommend that you archive the current configuration before you start the update if the **iDR-8** has settings you wish to keep. Further information is provided in the iDR System Manager Help file.

1. **Start HyperTerminal** From the Start / Programs / Allen & Heath / iDR System Manager menu select the Update iDR Unit Software (COMn) item. Select the COM1 or COM2 version as appropriate for your PC. The HyperTerminal window is opened.

2. **Select the file to transfer** From the Transfer menu select the Send File item. Click on the Browse button. The file named 'iDR Unit Software V3_nn.bin' is displayed. Make sure the version number is the same as the one you want to load. Open the file. The Send File window is opened ready to send the file via the COM port. Do not do this until you have prepared the **iDR-8**.

3. **Prepare the iDR-8** With the face plate removed, plug one end of the RS232 lead into the appropriate PC COM port. Plug the other end into the **iDR-8** front RS232 port. Press the FRONT/REAR switch so that the green ACTIVE indicator next to the port lights. **Now press the CODE UPDATE switch**. The LCD displays the boot code version number and 'Update...'.

4. **Start the file transfer** Click on the HyperTerminal Send button. The transfer starts and a window displays information and a progress bar. The LCD displays 'Updating…' progress and then 'Update Complete'. The process can take a few minutes.

5. **Restore normal operation** Exit HyperTerminal. Deselect the CODE UPDATE switch. The unit reboots automatically. Deselect the FRONT/REAR switch if you want the rear RS232 port to become active. Press ESC to confirm that the correct version of operating code has been loaded.

REMOVE THESE SCREWS

PRESS AND HOLD FOR 2 SECONDS
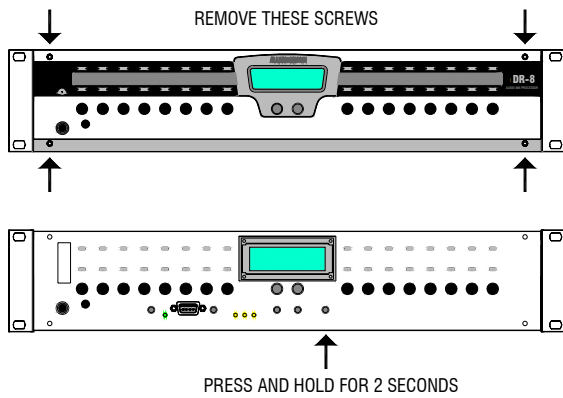
The iDR-8 Setup Menus

*1 Patch Select   Scroll through the available patches and recall the one you want. This can be useful for recalling test patches for system checking without the need for connecting to a PC.

*2 Clock   Change the time of the internal clock.

*3 Day of Week   Change the day held in the internal clock.

*4 Unit Name   Give the unit a unique name so it can be identified when connected to a PC or network. This is important if you have more than one **iDR** unit on the network.

*5 Network Setup   This must be done before connecting the unit to a PC or network using TCP/IP.   You can select automatic address allocation by a DHCP server, or enter the IP address and Subnet Mask manually.
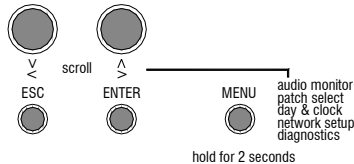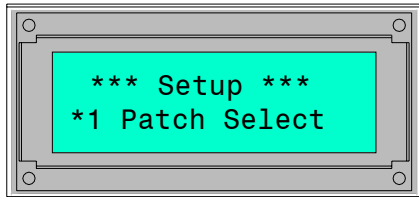
*6 PPP Setup   This must be done before communicating with a modem or PC via RS232 using a dial-up connection. Enter the host and client addresses, username and password.

*7 Monitoring   Lets you select any point in any channel for monitoring using the headphones and rear panel monitor output. It is a convenient way to check the audio signals without the need for a PC and without affecting the normal operation of the unit.

*8 Diagnostics Provides useful setup and status information.

Menu	Submenu	Value 1	Value 2	Value 3	Value 4
		PL-Anet Devs: nn			
		Locked: NO			
		Sync Slave: NO			
		Forced Mstr: NO			
		Audio Exp: None			
		Sampling: 48kHz			
		Num Connects: nn			
	*8.5 Comms Opt'n	RS232 Sys-Net			
	*8.4 MAC Address	0004C4-000000			
	*8.3 Gateway	0. 0. 0. 0.			
	*8.2 Net Mask	255.255.255.0			
*8 Diagnostics	*8.1 IP Address	192.168.0.2			
	*7.3 Point	Fader / Sidechain / Gate / Compressor / Eq / Delay / Source			
	*7.2 Channel	scroll channel / Channel 1			
*7 Monitoring	*7.1 Ip/Op	Output channel / Input Channel			
	*6.4 Password	scroll character A&H	scroll character A&H	scroll character A&H	Max 16 characters
	*6.3 Username	scroll character iDR	scroll character iDR	Max 16 characters	
	*6.2 Client IP	scroll numbers 192.168.0.2	scroll numbers 192.168.0.2	scroll numbers 192.168.0.2	scroll numbers 192.168.0.2
*6 PPP Setup	*6.1 Host IP	scroll numbers 192.168.0.1	scroll numbers 192.168.0.1	scroll numbers 192.168.0.1	scroll numbers 192.168.0.1
	*5.4 Set Gateway	scroll numbers 255.255.255.0	scroll numbers 255.255.255.0	scroll numbers 255.255.255.0	scroll numbers 255.255.255.0
	*5.3 Set Sub-Net	scroll numbers 255.255.255.0	scroll numbers 255.255.255.0	scroll numbers 255.255.255.0	scroll numbers 255.255.255.0
	*5.2 Set IP Addr.	scroll numbers 192.168.0.1	scroll numbers 192.168.0.1	scroll numbers 192.168.0.1	scroll numbers 192.168.0.1
*5 Network Setup	*5.1 DHCP Setup	Use DHCP: YES / Use DHCP: NO			
*4 Unit Name		scroll character iDR	scroll character iDR	scroll character iDR	Max 16 characters
*3 Day of Week		scroll day DAY: Tuesday			
*2 Clock		scroll hours TIME: 12:44:41	scroll minutes TIME: 12:44:41	scroll seconds TIME: 12:44:41	
*1 Patch Select		scroll patches 01 Name			

IDR-8 User Guide

Accessing the iDR-8 Setup Menus

```
*** Setup ***
*1 Patch Select
```

```
 v         ^
 <  scroll >
ESC    ENTER        MENU    audio monitor
                            patch select
                            day & clock
                            network setup
                            diagnostics
                    hold for 2 seconds
```

Before your PC can take control of the **iDR-8** you need to set up its unit name and communication settings. This is done using a simple front panel menu system. Once communication is established between the PC and **iDR-8** you use the iDR System Manager software to configure and control the unit.

To access the menus If it is already fitted, first remove the **iDR-8** face plate by removing the 4 corner screws using the 2mm hex driver provided. This exposes the menu access keys.

Navigating the menus Press and hold the MENU key for 2 seconds until '***Setup***' is displayed. Press the △ and ▽ keys to scroll through the available menu options. Each menu is numbered '*N.n' where 'N' is the main menu number, and 'n' the sub menu. When you find the menu you want, press ENTER. Press the △ and ▽ keys to change the value. Press the ▷ ENTER and ◁ ESC keys to accept or decline the changes and navigate through the sub menus. Always press ENTER to save your changes. When you are finished, press ESC to exit the menus.

Setting the Unit Name

```
 *** Setup ***
*4 Unit Name
```
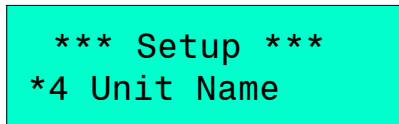
The **iDR-8** is identified to the PC or network by its unit name. This name is displayed in the list of available units when you open a new iDR System Manager session.

To change the unit name select menu item *4 Unit Name. Scroll through each character using the ▷ ENTER and ◁ ESC keys, and change the value using the △ and ▽ keys. The name can have up to 16 characters.

Checking the Current Settings and Status

```
 *** Setup ***
*8 Diagnostics
```
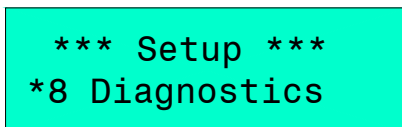
Select menu *8 Diagnostics. Scroll through the various sub menus to view the current settings.

Menu *8.1, *8.2 and *8.3 display the last current IP address, Subnet Mask and Gateway address if applicable. Make a note of these if you need to restore them later. Note that the address shown is likely to be temporary if the unit is working with a DHCP server. Menu *8.4 displays the unique MAC address belonging to the cpu card.

The 'Num Connects' item displays the number of connections active via the NETWORK port. For example, an **iDR-8** connected to a network with two PCs both running an active session of iDR System Manager would report 2 connections. It is a useful way of checking to see if the unit is being accessed.

The other information displayed includes which comms ports are active, which audio expanders are connected, digital audio sync status (locked, slave, forced master), and the number of remote devices connected to the PL-Anet port.

Rebooting the iDR-8

⚠ **To avoid any unexpected audible clicks or thumps always turn connected power amplifiers down or off before switching the iDR-8 or any other signal equipment on or off.**

It is necessary to reboot the **iDR-8** if you make changes to the network or PPP settings. You can do this two ways.

Power the unit off, then back on again, or

Press and then release the front panel CODE UPDATE switch. This takes around a minute as the unit searches but does not find update code. It reboots after the update search has timed out. Note that the code is not updated in this case.

Getting Started – Checking the Hardware

The **iDR-8** is supplied with its settings pre-configured so that you can turn it on and immediately get audio passing through it. This can be useful when you are installing a unit on site and need to carry out initial tests on the hardware before the custom configuration software is loaded. This can be done without the need to connect your PC and run the iDR System Manager software. When shipped, the **iDR-8** is loaded with the DEFAULT configuration. The iDR software provided with the unit also includes this configuration file so that you can load it again later if you want to restore the default settings.
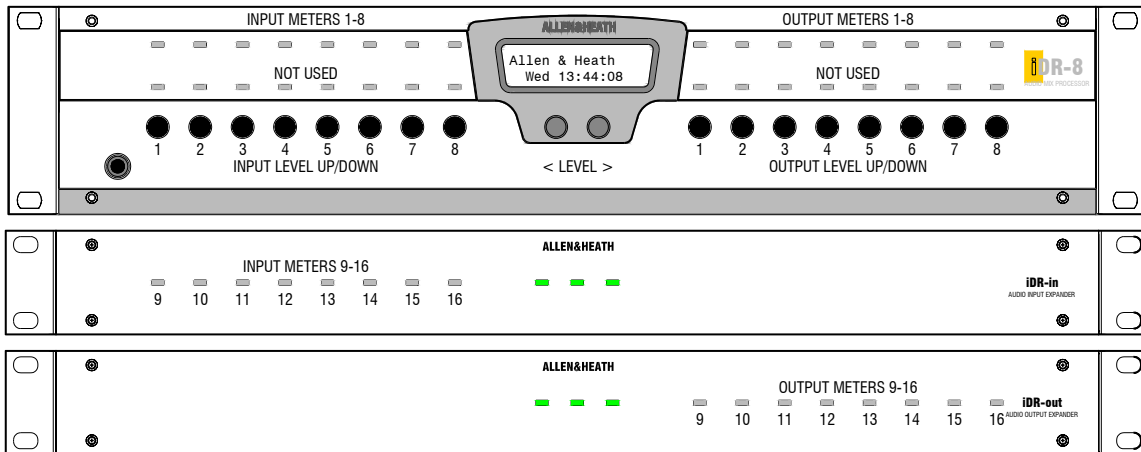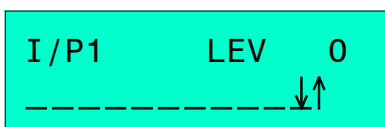
The diagram above shows how the LCD, soft keys and soft LEDs are assigned when you turn the unit on for the first time.

You can plug your test source such as a music CD into the XLR inputs, and route the XLR outputs to your system amplifiers. You should see the source signal displayed on the left hand side soft LEDs. Note that the input preamp gains default to 0dBu line level sensitivity with pad selected and phantom power off. To properly test microphone sources you need to run iDR System Manager software and correctly set the gains.

Signal Meters

Red   ■   +14dBu   4dB below clipping

Yellow   ■   0dBu normal level

Green   ■   -24dBu signal present

The channel faders default to fully off. The soft keys are assigned as level up/down selects to move the input and output channel faders up and down. Press the soft key for the channel you want. Now use the two middle keys to scroll the volume up or down. These time out after 2 seconds of inactivity. You should see the level displayed as a bar and number on the LCD display.

To get audio to pass through the unit you need to raise both the input fader and the required output fader. In this default configuration all inputs are routed through the matrix to all outputs. You can use one input to test each output by raising the output levels in turn. Similarly, you can use one output to test all input sources. The right hand side soft LEDs display output signal level.

Fader off

```
I/P1        LEV     0
_____↓↑
```

Fader 0dB

```
I/P1        LEV    92
██████████████  ↓↑
```

Fader +5dB

```
I/P1        LEV   100
████████████████ ↓↑
```

The levels can be adjusted from '0' (off) to '100' (+5dB boost). To set the fader to its 0dB unity position raise the level bar until it reads '92'. Note that all the channel processing such as equalisers and compressors is set flat or out. If you set both the input and output levels to '92' then you should get 0dB unity gain through the unit.

With the face plate removed you can use the Setup menus to listen to selected points in the channels using the stereo monitor and headphones outputs, adjust the time and day setting, and enter the communication settings ready to connect your PC.

For information on configuring the system run the iDR System Manager software and refer to its Help file.

Communicating with the iDR-8

The **iDR-8** is configured using a PC running the Allen & Heath Windows™ iDR System Manager application.

You need to connect your PC to the **iDR-8**. To get them to communicate you must first access the front panel Setup menus and set up a few communications settings. You also need to set up your PC to work with these settings.

The **iDR-8** communicates using well established computer communication methods. Full details are provided in the next section. There are two ways to connect your PC to the **iDR-8** :

Network Port

This uses a TCP/IP connection over Ethernet. You can connect direct to the network port on your PC or via a network, using a standard CAT5 network cable.

Your PC must have a network port or card fitted. Check that a suitable port is available.

You need to set up a unique IP address for the **iDR-8** unit using the front panel Setup menus. You should check that your PC uses its own unique but related IP address. This may involve making changes to your PC LAN network settings. We advise that you contact your network administrator or IT manager if you are unsure how to do this.

The network connection is very fast and reliable and is therefore recommended for configuring the iDR system.

RS232 COM Port

You can communicate with the **iDR-8** via the COM1 or COM2 RS232 serial port on your PC.

NOTE: By the nature of RS232 serial communication, it is much slower than the network connection. For this reason we recommend that you use it only when absolutely necessary, or when dialing up the unit using a modem via a telephone line to remotely interrogate the **iDR-8**.

To do this you need to set up a PPP 'dial-up connection' on your PC. This is similar to using your PC to dial into a remote Internet server provider or a modem over a telephone line.

The **iDR-8** has default PPP settings already set. You can use these to create the dial up connection on your PC. If you prefer or have reason to, you can change these using the front panel Setup menus.

To work with the dial-up connection you must first have a modem driver installed on your PC. If a suitable driver is not already installed you need to add one using the Windows™ Phone and Modem Options item.

Once installed, you can create and name the dial-up connection. It is held on your PC for future connection. Once the connection is made you open up the iDR System Manager and type in the Host IP Address set up on the **iDR-8**.

The type of RS232 cable you use depends on whether you are connecting to the **iDR-8** front or rear RS232 port, and whether you are connecting to your PC or direct to a modem.

Communicating Using A TCP/IP Connection
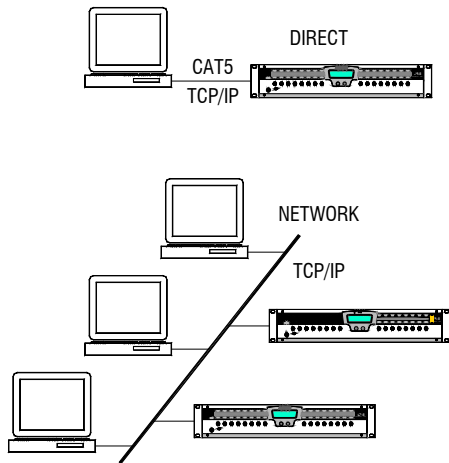
The **iDR-8** uses TCP/IP to communicate with a PC or distributed network via a CAT5 Ethernet link. It can also communicate over a dial-up connection using PPP via its RS232 port. The faster Ethernet connection is recommended for iDR configuration purposes. Note that the front panel RS232 port is intended for operating code update. The rear panel RS232 port is intended for remote interrogation of the unit via a modem.

You can connect the **iDR-8** directly to your PC using the Ethernet connection. Alternatively you can plug into a network so that any networked PC workstation running appropriate Allen & Heath software can control it. You can have several **iDR-8** units plugged into the same network. This provides the most flexible solution in today's world of networked technology.

Each **iDR-8** unit must have its own unique IP address. It needs to be related to the PC and network address ranges. It must be within the range of addresses allowed on the Subnet. It must not conflict with the addresses of other units plugged into the network. It is also possible that the PC you use to configure the **iDR-8** is also used with a network at your place of work. If it is served by a DHCP server then it is likely that it does not have its own permanent IP address as this is leased by the server. For these reasons it is very important that you take care when choosing and setting up the IP addresses.

⚠ **If you do not have administrative rights to your PC, or are not familiar with network configuration, or are unsure which addresses to use then please consult your network administrator or IT manager.**

Some networking terms explained:

ⓘ **LAN** (Local Area Network), the physical network that links many PCs and related devices in the same building.

ⓘ **Ethernet**, the most popular worldwide network system. It is defined by the IEEE802.3 standard and implemented over twisted pair cable.

ⓘ **CAT5** (Category 5), the standard used for network cabling and associated connectors.

ⓘ **UTP, STP** (Unshielded Twisted Pair or Shielded Twisted Pair), the type of cable used. The cable has four twisted pairs of wires. STP is shielded to reduce interference pickup.

ⓘ **TCP/IP** (Transmission Control Protocol / Internet Protocol), a set of layered industry standard protocols which define network communication.

ⓘ **IP address**, the unique 'soft' address which identifies each device connected to the network. It is made up of 4 numbers each from 0 to 255, for example 192.168.0.1. IP addresses are governed by the InterNIC organisation.

ⓘ **Subnet**, a subdivision of an organisations network, splitting it into smaller sections.

ⓘ **Subnet mask**, the number which is used to identify the subnet, for example 255.255.254.0. It determines the number of addresses in the subnet.

ⓘ **MAC address** (Media Access Control), a unique 12 digit hexadecimal number allocated by the IEEE to each network hardware device. The **iDR-8** has its number held in its cpu card. A look up table relates it to the active IP address.

ⓘ **DHCP** (Dynamic Host Configuration Protocol) A DHCP server automatically allocates IP addresses to networked devices from a pool of available addresses. It makes the task of connecting devices much simpler and prevents address conflicts. Each device connected should be set to 'DHCP ON', or have its address manually allocated by the network administrator.

ⓘ **MDI/X** (Medium Dependent Interface), a switch which determines the electrical connection. MDI is used when connecting to a network via a hub. MDIX (MDI crossover) is used when devices are connected directly instead of through a hub.

ⓘ **Host**, a networked device that provides a service to a client device.

ⓘ **Client**, a networked device that requests the services of a computer system or process.

ⓘ **Dial-up connection**, A temporary connection between devices, for example using a modem over a standard phone line.

ⓘ **PPP** (Point to Point Protocol), a simple protocol for data transfer using a dial up communication over a serial interface.

IDR-8 User Guide

SWITCH PRESSED

iDR

CAT5 UTP RJ45 CABLE

LAN PORT
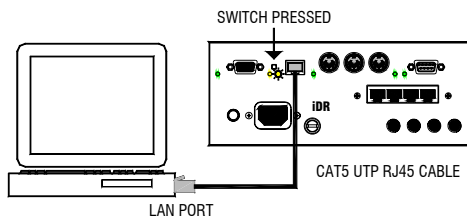
⌨ **Password protection** iDR-System Manager can be password protected to prevent unauthorised access to the **iDR-4** settings. This is usually required when the unit is accessible over a network from different PC workstations. For information on how to set up, enable and change the password refer to the Help file which comes with the application.

SWITCH OUT

iDR

CAT5 UTP RJ45 CABLE

LAN PORT

NETWORK SOCKETS
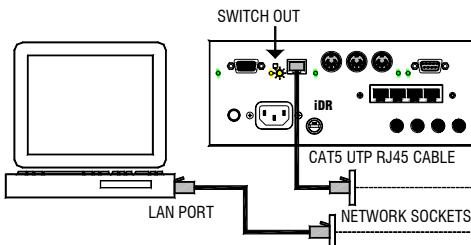
⚠ **Before starting it is important that you refer to the network administrator for the required DHCP settings and IP addresses. Failure to do this may result in address conflicts and service disruption.**

How to get the MAC address

If you need to obtain the unit hardware MAC address for network IP address administration then use the front panel Diagnostics Menu *8.4.

Connecting the iDR-8 Direct to the PC

[1] **Connect the PC to the iDR-8** Plug the PC Ethernet port into the **iDR-8** rear panel NETWORK port using the CAT5 UTP cable provided. Power up the PC and iDR unit.

[2] **Set the MDI/X switch in** This is located next to the NETWORK socket. Press the switch in for direct connection. The LINK indicator lights once communication is recognised.

[3] **Decide the IP addresses** Both should have manually assigned IP addresses. DHCP should be turned off (see below). If an address change is needed, consider whether you want to change it on the **iDR-8** unit or your PC. To make this decision you may need to consult with the network administrator if the unit or the PC is also used with a network, or the site engineer if other PCs are to be used with the unit.
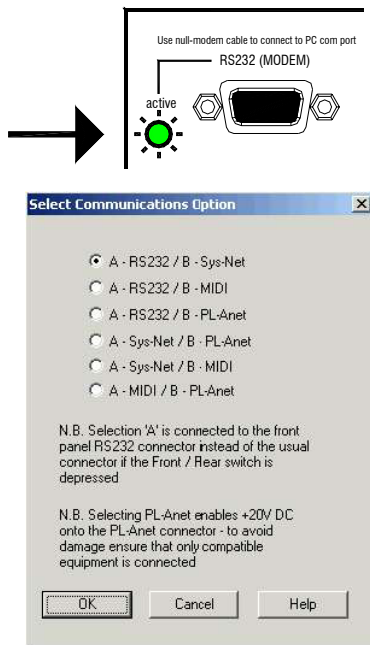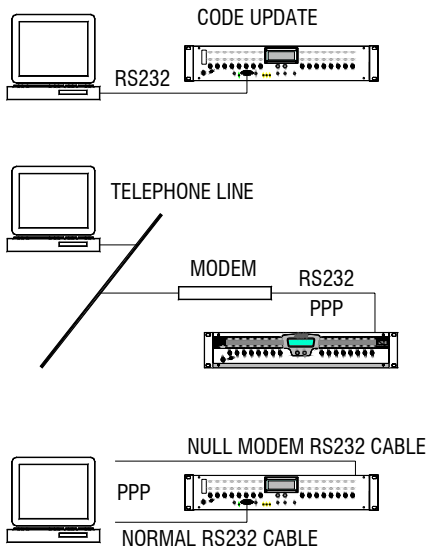
You may use the internationally agreed 'private network' block of addresses, which is 192.168.0.nnn, where nnn is any number from 0 to 255. Set the Subnet Mask to 255.255.255.0 to allow communication between all devices with addresses in the range from 192.168.0.1 to 192.168.0.254.

[4] **Check the iDR-8 IP settings** Access the front panel menu system. Go to menu *5 Network Setup. Under menu *5.1 set DHCP to NO. Then go to menu *5.2 and set the IP Address. Finally, go to menu *5.3 and set the Subnet Mask. Exit and reboot the **iDR-8** for the changes to take effect.

[5] **Check the PC IP settings** Under the appropriate Network Settings item find the Local Area Network TCP/IP properties. Set the required IP address and Subnet Mask. Note that the Subnet Mask must be the same for both the **iDR-8** and the PC, but the IP address must be different. Refer to your Windows™ Help file for further information on setting up your PC.

Connecting the iDR-8 to a Network

[1] **Decide the network settings** Power up the **iDR-8** but do not plug it into the network until you have configured its settings. Refer to the network administrator for the required DHCP setting and IP addresses.

[2] **Set the iDR-8 IP settings** Access the front panel menu system. Go to menu *5 Network Setup. Under menu *5.1 set DHCP to YES or NO as required. If set to NO then go to menu *5.2 and set the IP Address. Then go to menu *5.3 and set the Subnet Mask. Exit and reboot the **iDR-8** for the changes to take effect.

[3] **Set the iDR unit name** Use the front panel Menu *4 to give the unit a unique name up to 16 characters. This is important when more than one **iDR** is connected to the network.

[4] **Set the MDI/X switch out** This is located next to the NETWORK socket. Release the switch for network connection.

[5] **Plug the iDR-8 into the network** Use a CAT5 UTP cable such as the one provided. Plug the **iDR-8** NETWORK port into an available network socket. The rear panel LINK indicator lights once communication is recognised.

[6] **Set your PC network settings** If you are using your PC to configure the **iDR-8** over the network make sure it is correctly set to avoid address conflict and to communicate on the same Subnet. Refer to the network administrator for advice.

Communicating Using an RS232 Dial Up Connection

CODE UPDATE

RS232

TELEPHONE LINE

MODEM   RS232

PPP

NULL MODEM RS232 CABLE

PPP

NORMAL RS232 CABLE

Use null-modem cable to connect to PC com port
RS232 (MODEM)

active

Select Communications Option

- A - RS232 / B - Sys-Net
- A - RS232 / B - MIDI
- A - RS232 / B - PL-Anet
- A - Sys-Net / B - PL-Anet
- A - Sys-Net / B - MIDI
- A - MIDI / B - PL-Anet

N.B. Selection 'A' is connected to the front panel RS232 connector instead of the usual connector if the Front / Rear switch is depressed

N.B. Selecting PL-Anet enables +20V DC onto the PL-Anet connector - to avoid damage ensure that only compatible equipment is connected

OK   Cancel   Help

The default **iDR-8** PPP settings are:

> Host IP = 192.168.0.1
> Client IP = 192.168.0.2
> Username = iDR
> Password = A&H

PC dial-up connection settings required:

> Modem 56000 bps V90
> Dial-up server = PPP
> Internet Protocol TCP/IP
> Same Username as **iDR-8**
> Same Password as **iDR-8**

A front and a rear RS232 connection is provided. You choose which one to use by setting the front panel switch. Only one can be active at any time, indicated by a green LED. The RS232 port is selected as one of the communication options in the iDR System Manager Preferences item.

The front panel connection is for updating the iDR unit operating code via your PC COM port. You can also use it to run iDR System Manager with the unit by setting up a PPP dial-up connection. However, this is much slower than the recommended TCP/IP connection.

The rear panel RS232 port is for connection to a modem. This lets you communicate with the **iDR-8** remotely over a standard telephone line. You can also use it for direct connection to a PC running iDR System Manager but, once again, this is much slower than using the network port.

To use the RS232 port you need to access the front panel menu system to set the PPP settings. You also need to have RS232 selected as one of the communication options. This is done using the iDR System Manager software.

Selecting RS232 Communication Option

First check that the RS232 port is active. Deselect the front panel switch so that the rear RS232 port is selected. Now check that the 'active' indicator next to the rear RS232 connector is lit. If it is not then you need to use the iDR System Manager to make RS232 active. Note that doing this may disable one of the other ports being used with the system.

Using iDR System Manager Click on the File menu / Preferences / Communications Options item. This opens up the Select Communications Option window. You can select from the displayed combinations which options are associated with serial ports A and B. To use RS232 make sure one of the top three is selected. Reboot the **iDR-8** for the changes to take effect.
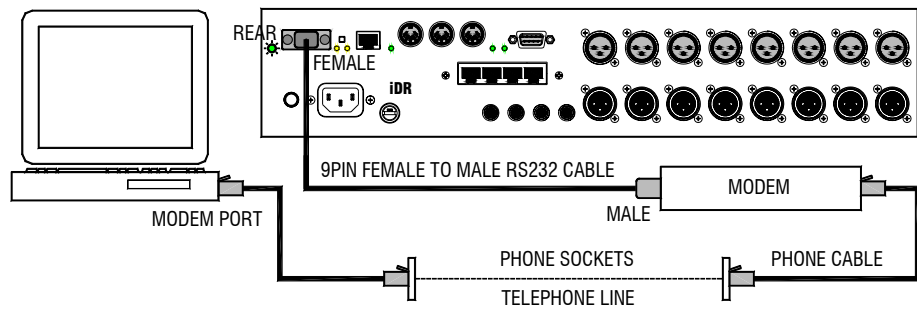
Setting up a Dial-up Connection

You can simply use the factory default PPP settings. In that case skip step 1 below. However, you can change these if you have a reason to do so. Do this using the front panel menus.

[1] **Changing the iDR-8 PPP settings** Go to menu *6 PPP Settings. Under menu *6.1 set the host IP address. The **iDR-8** is the host. Under menu *6.2 set the client IP address. The PC is the client. The **iDR-8** allocates the client address to the PC during the PPP communication. The host and client addresses must not be the same. Use menu *6.3 to set the Username, and menu *6.4 to set the Password. Both can have up to 16 characters and are case sensitive. You need to reboot the unit for the changes to take effect.

[2] **Setting up the PC dial-up connection** You need administrative rights to your PC. You must have a MODEM installed for the COM port you wish to use. Under the Network and Dial-up Connections menu select the 'Make New Connection' option. Use the same Username and Password as set up on the **iDR-8**. Name this connection for future use with the unit. If you need further information on how to set up the connection please refer to your Windows™ version Help file.

Connecting the iDR-8 to a Modem

9PIN FEMALE TO MALE RS232 CABLE

REAR
FEMALE
iDR
MODEM PORT
MODEM
MALE
PHONE SOCKETS
PHONE CABLE
TELEPHONE LINE

Starting the iDR System Manager

Open the application from Start / Programs / Allen & Heath / iDR System Manager Vnnn. Click on the blue icon or File menu New item. Type the Host IP Address into the window. This is as set in the **iDR-8** Setup menu *6.1 PPP settings. Click OK.
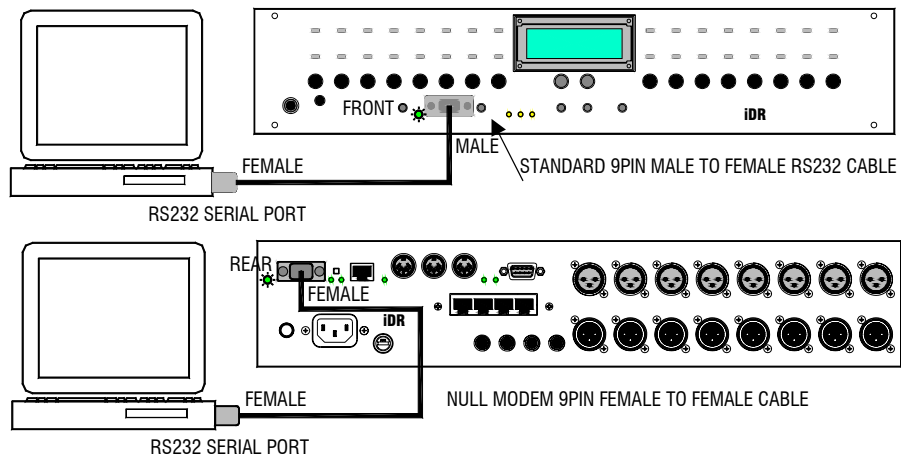
iDR Connection
Select an iDR Unit
192.168.0.1
OK   Offline   Cancel
Help

1   **Connect the iDR-8 to the modem**   Use the rear panel RS232 (MODEM) port. Check that the 'active' indicator next to it is lit. If it is not then select the RS232 communication option as described previously. Use a standard RS232 cable. Make sure that the modem is plugged into the telephone line.

2   **Dial up the iDR-8 using the remote PC**   Open up the previously created dial-up connection. Enter the correct username and password. Type in the phone number of the **iDR-8** modem. Click the Dial button.

3   **Run the iDR System Manager software**   Once communication is established with the **iDR-8** an icon appears in the task bar indicating that the PC is on line. Start the iDR System Manager application. Note that the program will run a lot slower than direct network connection. This is due to the nature of the slower serial connection.

Connecting the iDR-8 Direct to the PC

FRONT
MALE
iDR
FEMALE
STANDARD 9PIN MALE TO FEMALE RS232 CABLE
RS232 SERIAL PORT

REAR
FEMALE
iDR
FEMALE
NULL MODEM 9PIN FEMALE TO FEMALE CABLE
RS232 SERIAL PORT

1   **Connect the iDR-8 to the PC**   You can use either the front panel or the rear panel RS232 port. Check that the 'active' indicator is lit and that RS232 has been previously selected as the A port in the iDR System Manager File / Preferences / Communications Options item. Use a standard RS232 cable for front connection. Use a null modem (female to female) cable for rear connection.

2   **Dial up the iDR-8**   Open up the previously created dial-up connection. Enter the correct username and password. Click the Dial button.

3   **Run the iDR System Manager software**   Once communication is established with the **iDR-8** an icon appears in the task bar indicating that the PC is on line. Start the iDR System Manager application.

Working with the iDR System Manager

Having established a connection between your PC and the **iDR-8** you can run the iDR System Manager application and start to configure the unit.
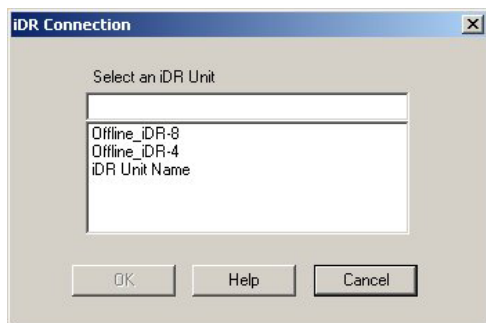
⌨ **Start the iDR System Manager** from the Start / Programs / Allen & Heath menu. To open a new session click on the blue icon, press Ctrl+N, or open the New item in the File menu. All iDR units currently available are shown in the list. Select the one you want to work with. Click OK to open its session. You can have more than one session open at the same time. Each has its own window. The status bar at the bottom of the window displays which unit the window is working with.

For TCP/IP communication the rear panel LINK indicator remains lit once communication is established. The TX indicator next to it flashes to show when data is being communicated between the PC and **iDR-8** when the software is running. If the LINK indicator is off check the setting of the MDI/X switch and the IP addresses.

Setting the Time and Day Clock
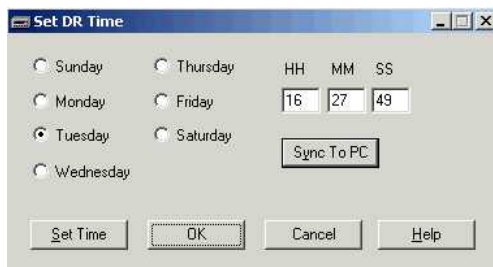
Before starting to configure the unit, check that the time and day of week are correctly set. Depending on the current LCD settings these may or may not be displayed. There are two ways to change the settings:

Front panel menus With the face plate removed, access menu *2 Clock and menu *3 Day of Week.

⌨ **iDR System Manager software** Click on the Edit menu Set Time item. You can manually enter the settings or use the Sync to PC button to load in the current PC time and day settings.

Archiving and Loading Configurations
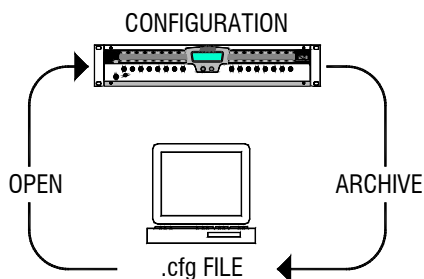
The way the **iDR-8** is set up and the contents of any patches which have been created is stored as a 'configuration'. It can be archived as a .cfg file on your PC. Any number of configurations can be named and stored. You can load a configuration back into the unit using the iDR System Manager. Refer to the section about Configurations and Patches later in this user guide and the iDR System Manager Help file for more details.
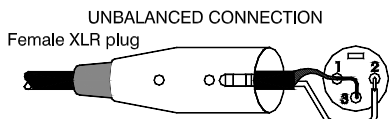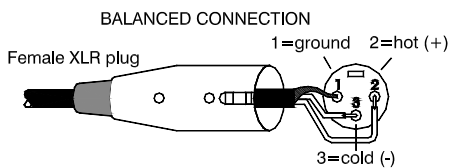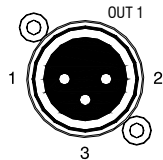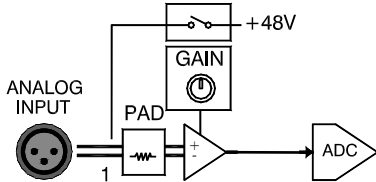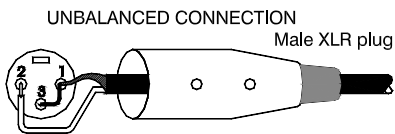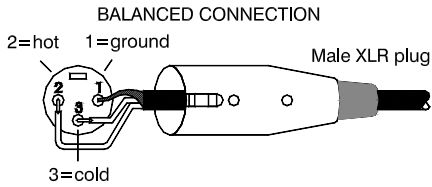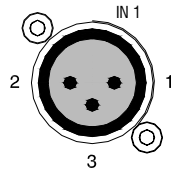
We recommend that you regularly archive the configuration when you are preparing and installing iDR systems, making changes to system settings on site, or updating the unit operating software.

The **iDR-8** is shipped with a DEFAULT configuration loaded. An additional RESET configuration is provided. These provide a useful starting point for configuring the system by clearing the memories and resetting the controls. DEFAULT provides a quick start for basic testing of the hardware and cabling before working with the configuration software.

⌨ **To archive or open a configuration** start iDR System Manager and use the File menu Archive Configuration (Ctrl+S) and Open Configuration (Ctrl+O) items or the toolbar icons.

XLR Analogue Inputs and Outputs

IN 1

BALANCED CONNECTION

2=hot   1=ground   Male XLR plug

3=cold

UNBALANCED CONNECTION

Male XLR plug

MIC/LINE Inputs   Plug analogue microphone and line sources in these inputs. The connections are differentially balanced XLR with pin2 hot (+), pin3 cold (-) and pin 1 ground. For unbalanced sources link pin 3 to pin 1 at the iDR input.

Phantom power   +48V DC can be switched to XLR pins 2 and 3 for powering condenser microphones and other equipment that needs phantom power. The voltage is fed through a 6.8k ohm resistor to each pin.

⌨   **The Input Source window**   From within the Input Channels window click on the Source button or the All button. This opens the window with the input controls. The controls shown are those associated with the physical input routed to that channel through the source patchbay. Check that the physical input number displayed is the same as the XLR input you are working with.

⌨   **Selecting phantom power**   Open on the Source window to access the +48V switch. If required, select +48V. Read the warnings below.

⚠ **To avoid loud clicks make sure that all channels fed by the input are turned down or muted before you switch +48V on or off or plug microphones into powered inputs. Do not connect unbalanced sources or cables to the inputs when +48V is selected. If phantom power is not required make sure +48V is turned off.**
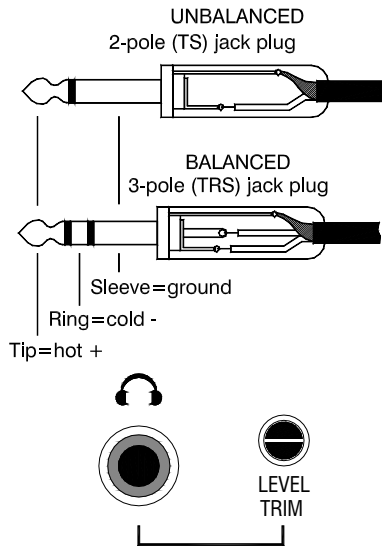
⌨   **Selecting PAD**   Select the -20dB pad if you are plugging in high level microphone or line sources. Open on the Source window to access the -20dB switch.

⌨   **Setting GAIN**   Open on the Source window to access the gain control. With audio active adjust the control so that the meter averages around '0' with loudest peaks no more than '+10'. The gain control ranges from +5 to +50dB gain, or -15 to +30dB gain with pad selected. Gain is adjusted in 3dB steps.

OUT 1

BALANCED CONNECTION

1=ground   2=hot (+)

Female XLR plug

3=cold (-)

UNBALANCED CONNECTION

Female XLR plug

LINE Outputs   Connect these to line level equipment such as amplifier inputs. Maximum output is +18dBu. Decide the normal operating level according to headroom required. Typical level is 0 or +4dBu. The connections are differentially balanced XLR with pin2 hot (+), pin3 cold (-) and pin1 ground. For unbalanced sources link pin 3 to pin 1 at the iDR output.

⌨   **The Output Source window**   Click on the XLR within the Output Select window to open up its Analog Output window. Check that the source channel number displayed is the one you want to send to the output XLR.

Monitor Inputs and Outputs

UNBALANCED
2-pole (TS) jack plug

BALANCED
3-pole (TRS) jack plug

Sleeve=ground

Ring=cold -

Tip=hot +

LEVEL
TRIM

```
*** Setup ***
*7 Monitoring
```

Monitor Settings window

Monitor Configuration
- Follows Mouse / Active Window
- Independent Outputs
- Manual Select (see below)

Manual Selection Settings
- Input Channel   Channel Number
- Output Channel   10

Monitor Point
EQ

Monitor Level
Fader / Meter
+ 5 / Clip !
0dB / +15
- 5 / +10
-10 / + 5
-15 / + 0
-20
-25 / - 0
-30
-35 / - 5
-40 / -10
-45
-50 / -15
-55 / -20
-∞ / -22

-10.0dB

Close   Help

Monitor TRS Input and Output   The monitor is available as a line level signal on the rear panel. A pair of TRS jack sockets accept an external stereo source as the input, and another pair present the stereo output. The L and R signals have separate sockets. Maximum level available is +18dBu. Decide the normal operating level according to headroom required. Typical level is 0 or +4dBu. Each TRS socket is differentially balanced and wired tip hot (+), ring cold (-) and sleeve ground. To use these with unbalanced equipment link the ring to the sleeve.

Monitor Headphones Output   This follows the TRS monitor output signals. Plug stereo headphones into the front panel socket. We recommend that you use high quality closed ear headphones from 30 to 600 ohms impedance. Adjust the level trimmer using a flat bladed implement such as a screwdriver. It can be accessed with the face plate on or off. In most cases re-adjustment should not be necessary once the unit is installed and operated normally.

Using the monitor   Plug headphones into the front socket. Connect the rear panel line outputs into a stereo amplifier driving monitor loudspeakers. You can select the source to monitor in three ways:

1. **Front panel Setup menu *7** With the face plate removed, press and hold the MENU key until the Setup menus are accessed.   Press ENTER to scroll through until menu *7 Monitoring is displayed. Press the scroll keys to select the input or output, the channel number and the point in the signal path you want to listen to. These are shown in the table earlier in this user guide. Once selected you should hear the signal in the monitor.
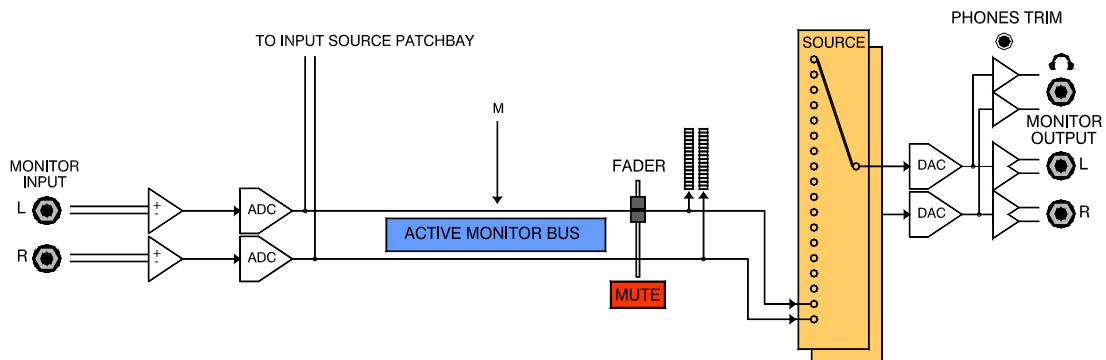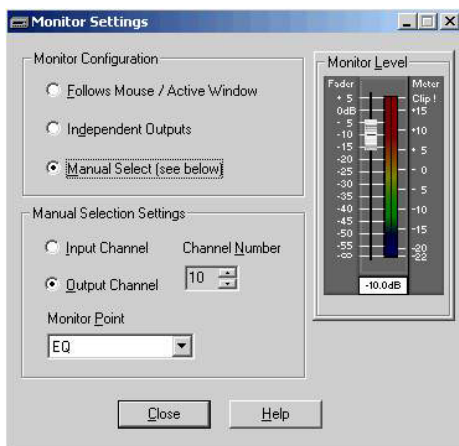
2. [icon] **iDR System Manager**   Open the Monitor Settings window. There are three options:
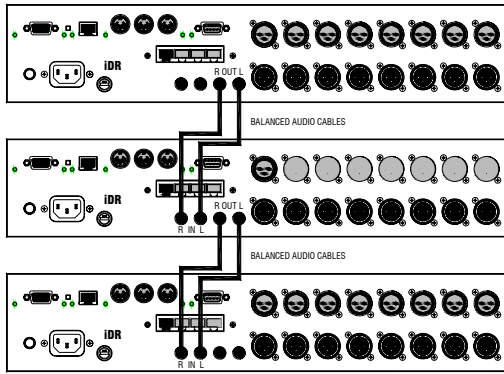
O   Follow Mouse / Active Window – Move the mouse over the active windows. It automatically selects the signal associated with any box that has meters in its display to the monitor bus.

O   Independent Outputs – Assigns the headphones and monitor sockets as additional channel outputs instead of audio monitor.   Do not tick this if you want to use the monitor function.

O   Manual Select – Manually enter the channel number and point you want to listen to.

3. **Patch recall** The manually selected monitor settings can be stored in the patches. You could assign patch recalls to the soft keys so that the monitor is selected from front panel or remote keys for normal day-to-day operation.

PHONES TRIM

TO INPUT SOURCE PATCHBAY

SOURCE

M

FADER

MONITOR
INPUT

L

R

ADC

ADC

ACTIVE MONITOR BUS

MUTE

DAC

DAC

MONITOR
OUTPUT

L

R

Daisy chaining iDR-8 monitors

The active monitor bus can ripple through multiple **iDR-8** units so that the last in the chain can be used to listen to any audio signal in the system. With no active monitor selected the signal from the previous unit is passed on to the next. Selecting an active monitor overrides the signal from the previous unit. Using the active mouse monitor you can switch between the iDR System Manager sessions and conveniently listen to any point in any unit on the same headphones.

Use well shielded balanced TRS audio cables to interconnect the monitor L and R signals over distances up to 250 metres. Take care to run the cables in such a way to avoid damage or interference pickup.
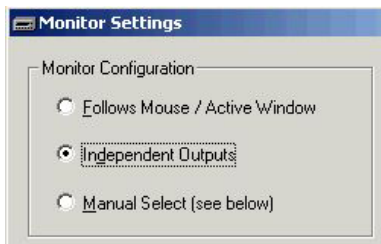
Using the Monitor as Additional Channels

You can use the monitor L and R TRS sockets as additional channel inputs and outputs. In the unexpanded **iDR-8** these combine with the XLR sockets to provide a 10x10 matrix as shown below.

Select Monitor IN Left and Right as the source for input channels of your choice, for example 9 and 10. Tick Independent Outputs in the Monitor Settings window to use the monitor output sockets with output channels of your choice, for example 9 and 10.
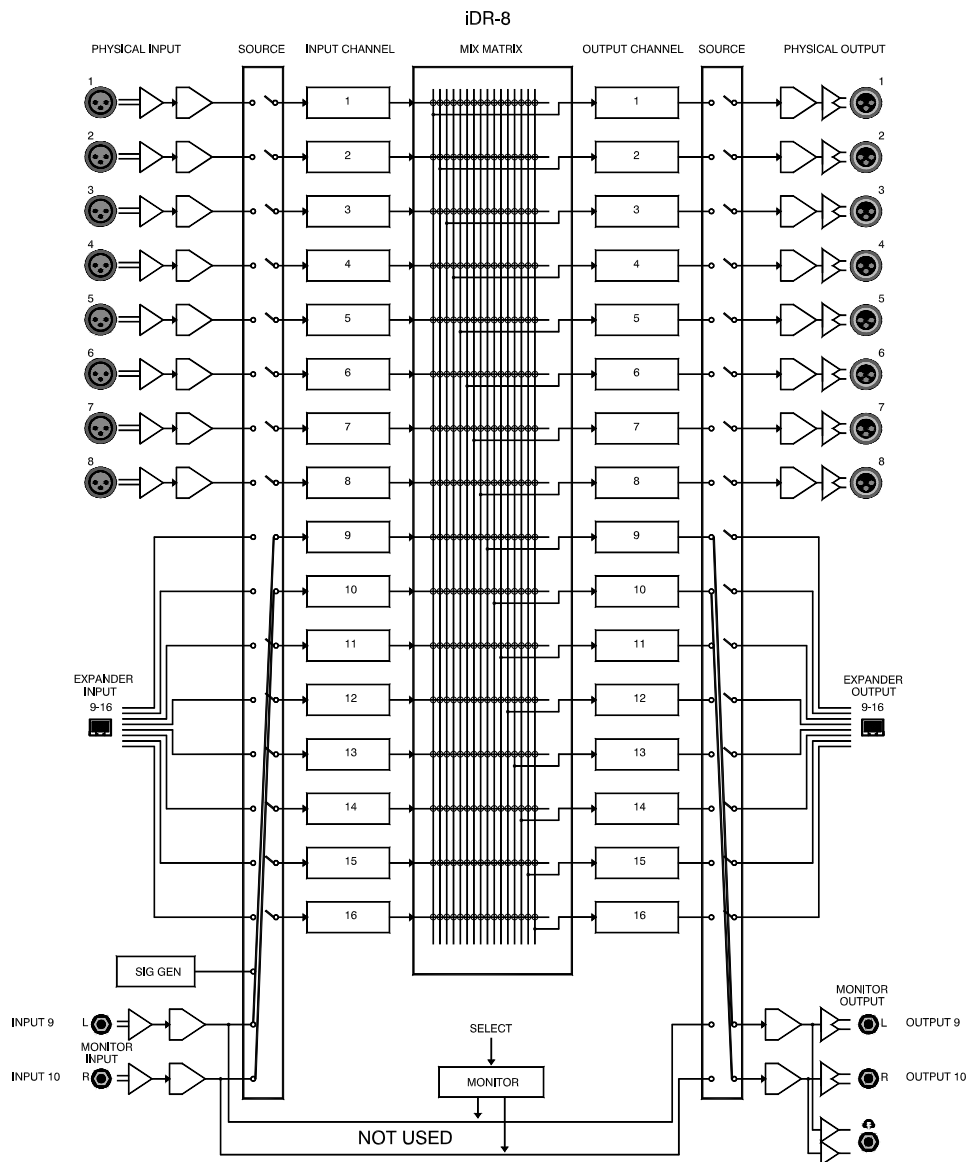
Adding the iDR-in and iDR-out Audio Expanders
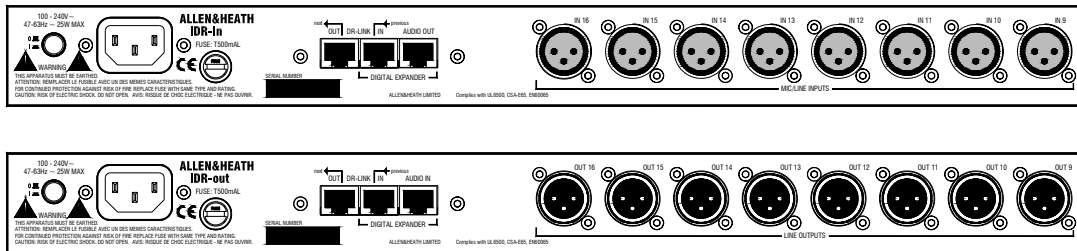
iDR-in and iDR-out are add-on audio expander units for the iDR-8 audio mix processor. They provide additional analogue audio inputs and outputs to add to those on the main unit. The iDR-in has 8 mic/line inputs, the iDR-out has 8 line outputs. Only one of each may be added to the iDR system bringing it up to a maximum 16x16 audio matrix. These units do not have any processing built in. They simply convert between analogue and digital audio to work with an 8 channel wide digital bus which feeds the main unit via a CAT5 STP cable. The processing is available on the main unit which features the full 16x16 matrix. Both units have 8 front panel LEDs in addition to the 3 status indicators. These are 3-colour soft LEDs which can be assigned as audio meters, mute indicators or static patch related indicators. They are programmed in the usual way using the iDR System Manager software. The iDR-in features the same input preamps as the main unit, complete with switchable 48V phantom power, 20dB pad and gain control. Control of the expanders is via the DR-Link port using a CAT5 STP cable. This means that two CAT5 cables are required to interconnect an expander to the main unit. Maximum distance between the units is 250 metres. Local mains power is required.
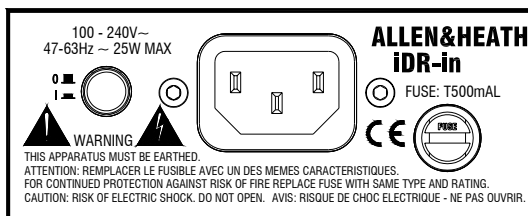
⚠️ **Make sure you have read the Important Safety Instructions printed earlier. Also check that your local mains supply is compatible with that printed on the rear panel of the unit. Ensure that the correct mains lead with moulded plug and IEC connector has been supplied. For your own safety and optimum performance make sure the system is correctly grounded.**

⚠️ **To avoid any unexpected audible clicks or thumps always turn connected power amplifiers down or off before switching the iDR or any other signal equipment on or off.**
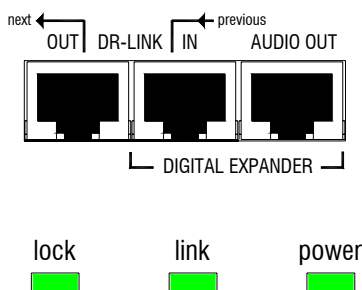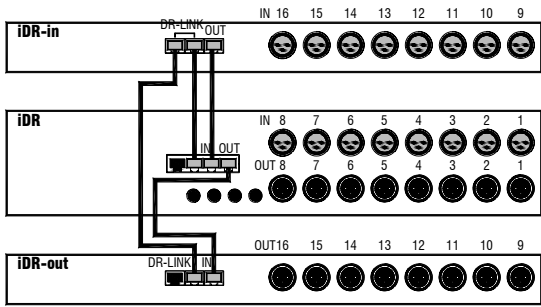
Check the connections
The iDR-in AUDIO OUT connects to the iDR-8 AUDIO IN. The iDR-out AUDIO IN connects to the iDR-8 AUDIO OUT. Ensure that the expander DR-Link IN connects to DR-Link on the iDR-8 it is associated with. If both expanders connect to the same iDR-8 then daisy chain from DR-Link OUT on one to DR-Link IN on the other.

Turning the expander on or off
Turn the unit on by pressing the rear panel power ON/OFF switch. The power LED lights up. The link LED lights if the DR-Link connection is established with the iDR-8. Then the lock LED lights once audio communication is established with the iDR-8. The iDR System Manager detects the presence of the expander.

## Checking for expanders
You can use the front panel iDR-8 Setup menus to check if any expanders are connected and working. This is useful when the expanders are located far away from the main unit. With the face plate removed access menu *8 Diagnostics and scroll to Audio Exp.

Fully expanded iDR-8

This diagram shows the **iDR-8** with both the input and output expander fitted. Note the connection of DR-Link which is daisy chained from one unit to the next. If an **iDR-switch** unit is also fitted then daisy chain DR-Link from the last expander to the switch box. Make sure you plug into the correct DR-Link socket.

Use CAT5 STP cable. A pair of standard 2 metre cables is provided with each expander. Maximum cable length is 250 metres. This means that the expander units can be used for remote audio over CAT5 cable.
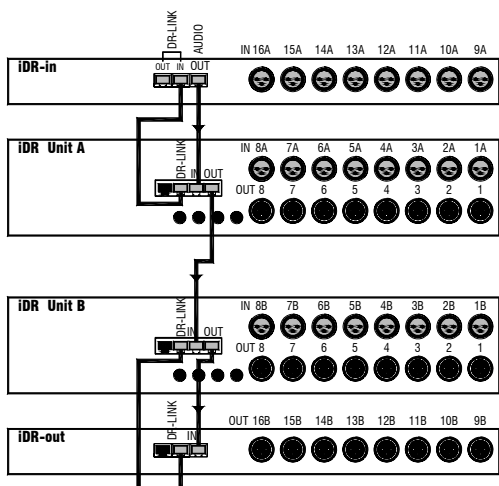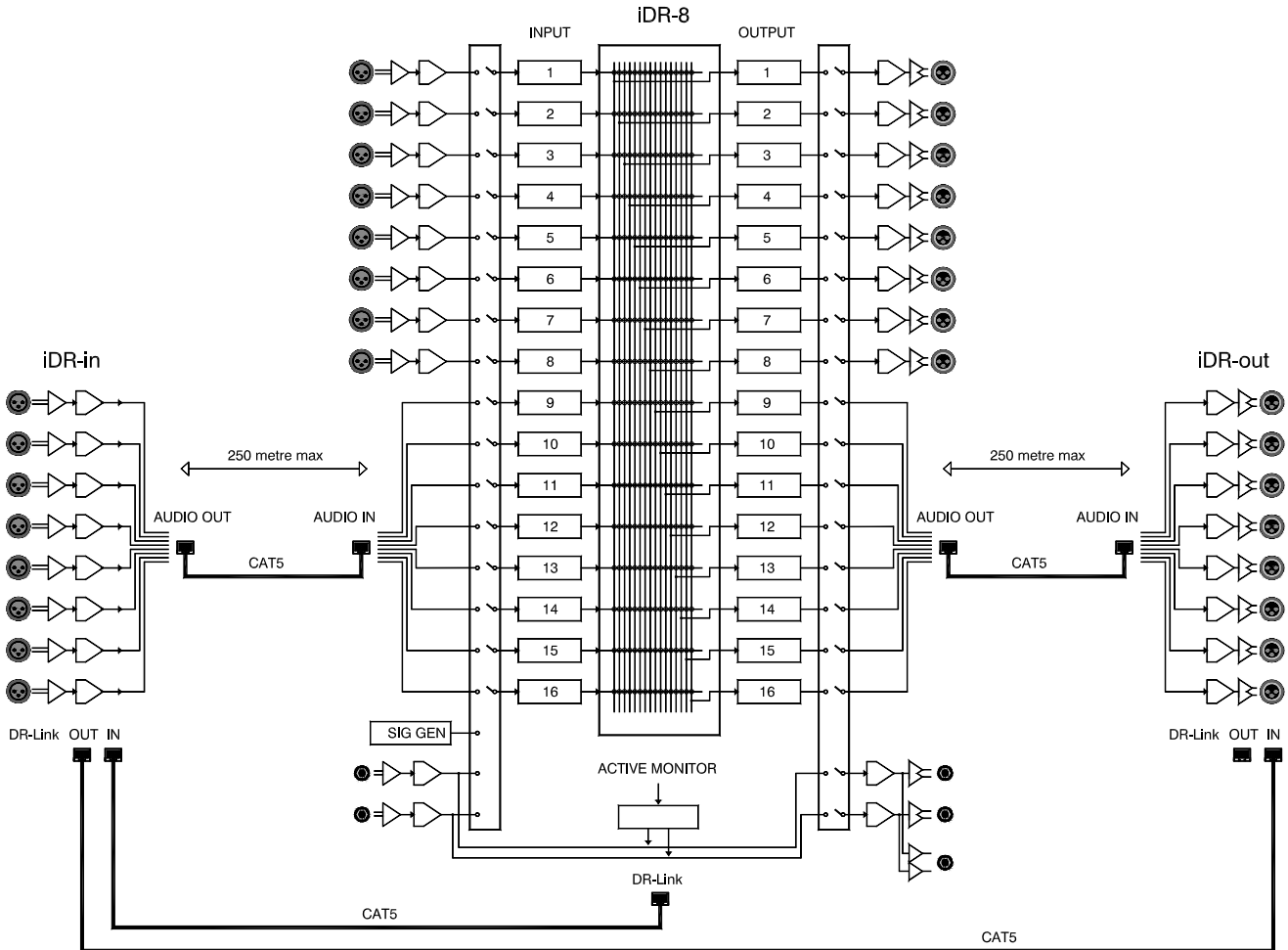
Expanded multiple iDR-8 system

This diagram shows an iDR system with two **iDR-8** units and both expanders fitted. DR-Link is only required to connect to the expanders, not between the main units. Make sure you connect DR-Link to the **iDR-8** associated with each expander. Make sure you plug into the correct DR-Link socket. In this case do not daisy chain DR-Link from one expander to the other.

Use CAT5 STP cable. Maximum cable length is 250 metres. Maximum audio matrix is 16x16. The audio link cable carries 8 channels. This can provide a distributed system with 8 common channels and 8 local channels at each unit.
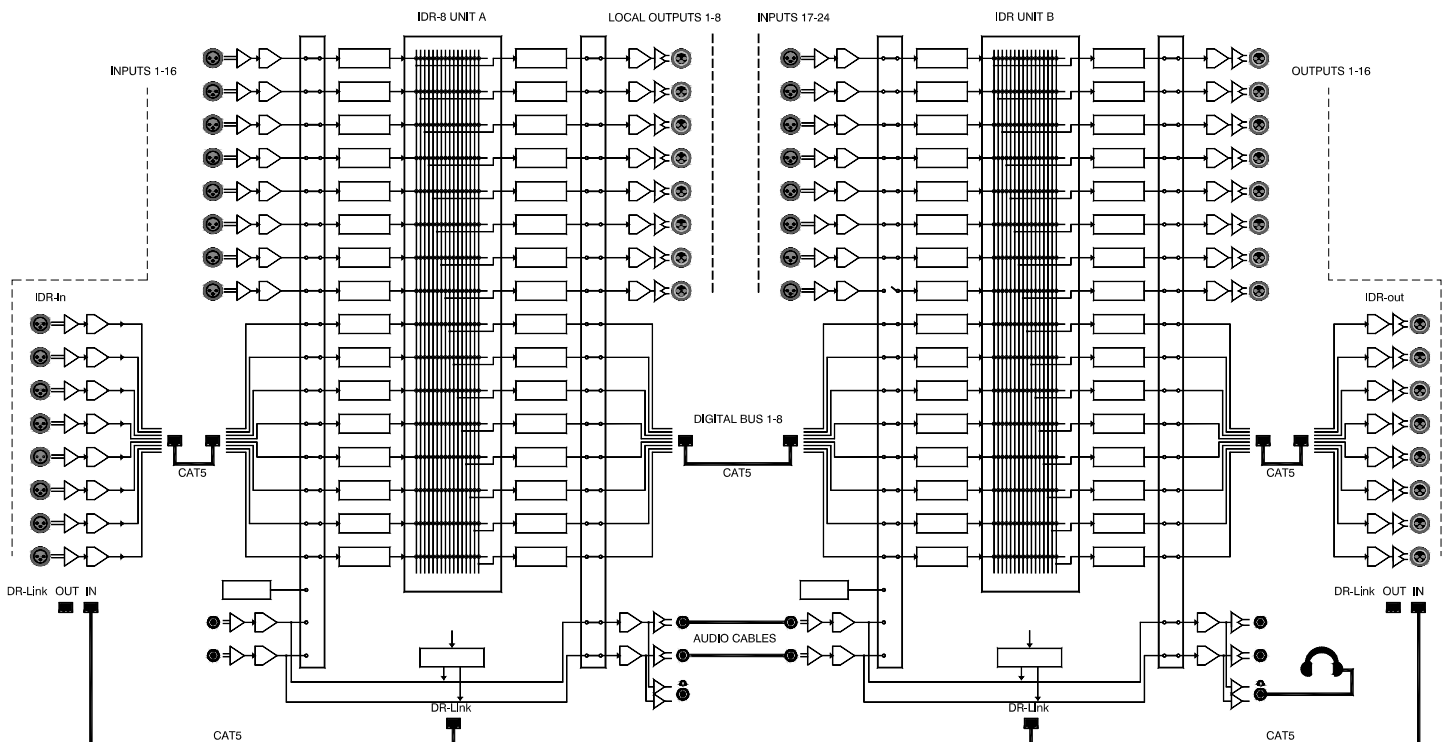
Linking iDR-8 Units

Several **iDR-8** units can be daisy chained together such that audio is passed between them using the 8 channel expander bus. An **iDR-in** expander can be added to the first unit in the chain, and an **iDR-out** expander can be added to the last unit. This provides a flexible solution for complex installations, for example one where each floor of a building has its own **iDR-8** with local inputs and outputs but have common audio such as global announcements and alarm messages passing through all. The units can be up to 250 metres apart. Each unit requires its own iDR System Manager session for configuration.

Master / Slave When **iDR-8** units are linked one becomes the master and the others the slaves. This is so that they synchronise their audio communication. The first **iDR-8** in the chain automatically becomes the master. However, this is not the case in a 'loop back' system where the audio from the last unit is linked back into the first unit. Here, you need to force one unit to become the master. This is described later.
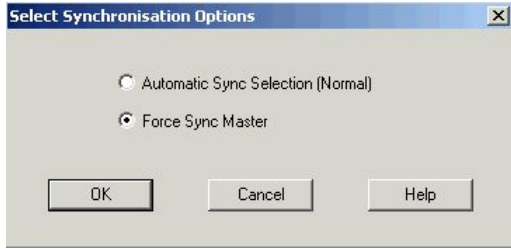
Master /slave status is indicated by two LEDs on the **iDR-8** front panel. To view these the face plate needs to be removed. The slave LED lights when the unit is assigned as a slave. The ext sync lock LED lights when audio is being correctly synchronised between the units. Both LEDs are off if the unit is the master.
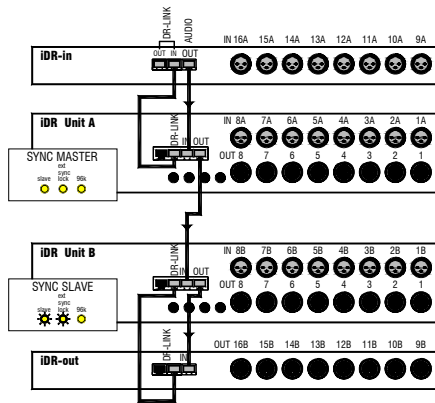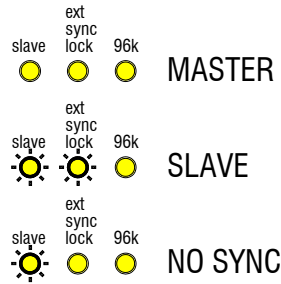
Daisy chained units This example shows two units chained together and including the audio expanders. Unit A becomes the sync master, Unit B the slave. The CAT5 cable between them connects 8 channels of audio. These can be selected from any combination of channels using the source patchbays. Any of the Unit A inputs can be routed through the patchbay to Unit B. The DR-Link connection is only required for the expanders. Note that they should connect to the associated **iDR-8** units. The audio monitor is daisy chained from Unit A to Unit B so that the last unit can be used to listen to any signal in any unit. Note that each unit must have its own session of iDR System Manager running for configuration.

iDR Unit A

FORCE SYNC MASTER
ext
sync
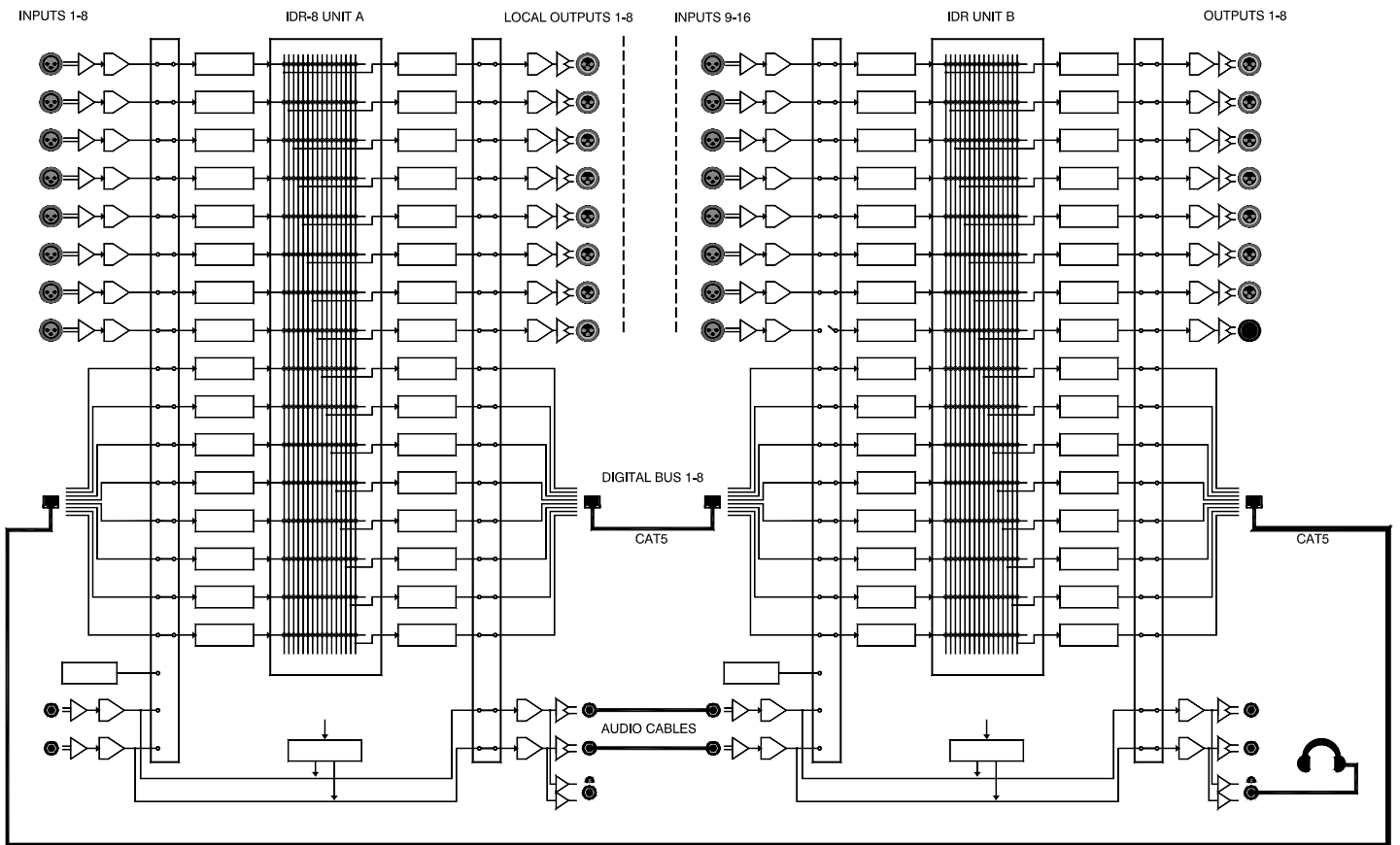slave lock 96k

IN 8A 7A 6A 5A 4A 3A 2A 1A
IN OUT
OUT 8 7 6 5 4 3 2 1

iDR Unit B

SYNC SLAVE
ext
sync
slave lock 96k

IN 8B 7B 6B 5B 4B 3B 2B 1B
IN OUT
OUT 8 7 6 5 4 3 2 1

Select Synchronisation Options

○ Automatic Sync Selection (Normal)

● Force Sync Master

OK   Cancel   Help
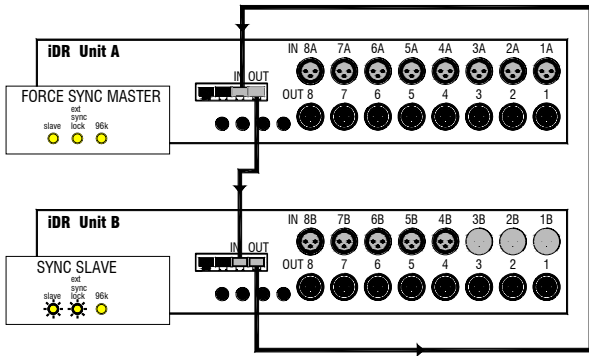
Loop back system

This example shows two units connected with the audio bus looped back from the last to the first. This means that all inputs are available to both units using the patchbays and matrix. Note that each unit must have its own session of iDR System Manager running for configuration.
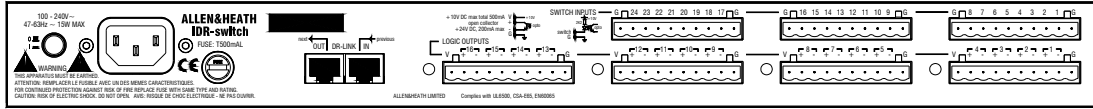
The loop back system uses the audio expander ports. In this configuration these are no longer available for plugging in the **iDR-in** and **iDR-out** expanders.

Force sync master Because it is not obvious to the looped units which is the audio sync master, you need to manually assign one of the units to be the master. If this is not done then the operation of the units is unpredictable. Do this from within the iDR System Manager session for the unit you want to be the master, usually the first in the chain. Open the File menu, Preferences, Synchronisation Options window. Tick the Force Sync Master item.

⚠ **To avoid feedback oscillation make sure you do not route any output back to itself. Plan carefully how you will use the input and output source patchbays and routing matrix. Make sure all your patches are created to avoid feedback problems.**

INPUTS 1-8   IDR-8 UNIT A   LOCAL OUTPUTS 1-8   INPUTS 9-16   IDR UNIT B   OUTPUTS 1-8

DIGITAL BUS 1-8

CAT5   CAT5

AUDIO CABLES

Adding the iDR-switch Expander

The **iDR-switch** is an add-on control expander for the **iDR-8** audio mix processor. It provides an additional 24 switch closure control inputs and 16 logic control outputs in a 1U high rack or desk mount case. Up to three units can be connected providing up to 72 additional switch and 48 additional logic controls. These can be custom wired by the installer to allow external equipment to control pre-determined mixer functions, or the mixer to control external equipment. Typical applications include room wall plates for local volume control and source selection, patch recall, logic control, automatic control of room dividers, projection screens, media players, lamps and other equipment.

The inputs and outputs are opto-isolated to avoid problems with equipment interaction. Grounding the switch inputs using simple contact closures triggers the programmed function. The logic outputs are open collector and can be wired to use the internal reference voltage or an external power supply. These typically drive LED indicators, filament bulbs, relays and circuit logic. Wiring the interface should be carried out by competent installation personnel. The switch and output functions are easily programmed using the iDR System Manager software.
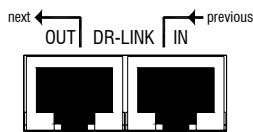
The **iDR-8** communicates with the **iDR-switch** via the DR-Link port. This uses the proprietary Allen & Heath DR-Link protocol. A standard 2 metre CAT5 STP cable is provided. However, you can use a cable up to 300 metres long letting you position the unit closer to the local switch wiring. A pass through connection lets you network up to three units by daisy chaining them.
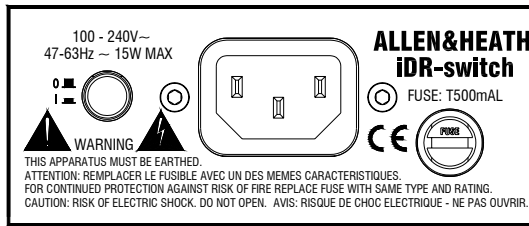

⚠ Make sure you have read the Important Safety Instructions printed earlier. Also check that your local mains supply is compatible with that printed on the rear panel of the unit. Ensure that the correct mains lead with moulded plug and IEC connector has been supplied. For your own safety and optimum performance make sure the system is correctly grounded.

Turning the expander on or off Turn the unit on by pressing the rear panel power ON/OFF switch. The power LED lights up. The link LED lights if the DR-Link connection is established with the **iDR-8**. The iDR System Manager detects the presence of connected **iDR-switch** units.

Checking for iDR-switch expanders You can check to see how many **iDR-switch** units are connected and working from within iDR System Manager by opening up the Soft LEDs or Soft Keys windows.
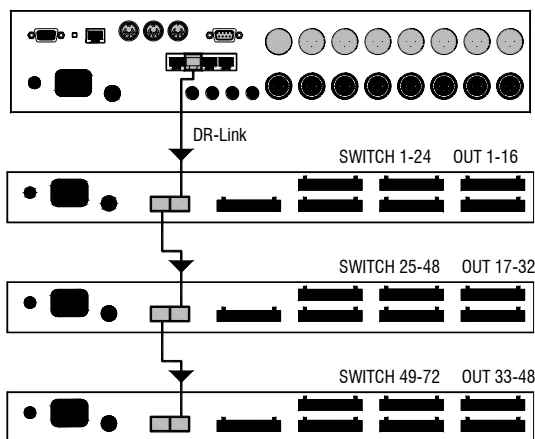
Connecting to the iDR-8 The **iDR-8** communicates with the **iDR-switch** using the DR-Link port. This serial connection can be daisy chained through the 3 switch units as shown, and then on to the **iDR-in** and **iDR-out** expanders if fitted. Make sure you plug the DR-Link IN and OUT sockets correctly. Use CAT5 STP cables with RJ45 connectors. Do not use UTP cable. A standard 2 metre cable is provided with each unit. You can use cables up to 300 metres long between units for remote positioning. Ensure a good mains supply and solid grounding to each unit.

Planning the system Before starting make sure you have planned how the system is to work. Allocate the switch inputs and logic outputs and keep a log of their intended function. Use the iDR System Manager software to configure the system. Simulation windows are provided for you to try out your settings without access to the units themselves.

⚠ Important Note: The **iDR-switch** provides contact closure switch inputs and open-collector logic outputs. How these are wired to external equipment is the responsibility of the installer. Specification details are provided here for the **iDR-switch** inputs and outputs. It is important that the installer is suitably qualified and familiar with external control circuits to be able to work within the capabilities of the unit. Allen & Heath do not assume responsibility for any damage done to the unit due to incorrect or faulty connection to external equipment.
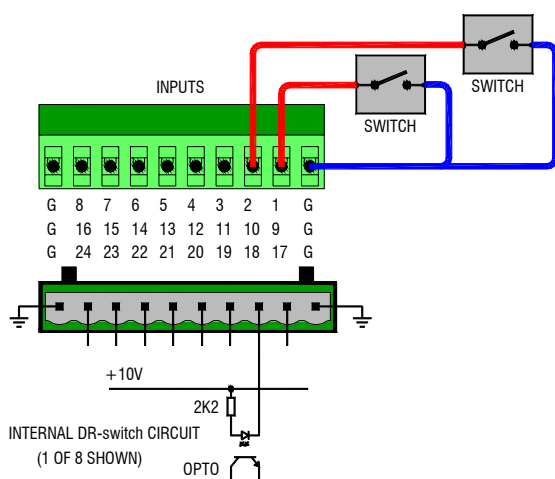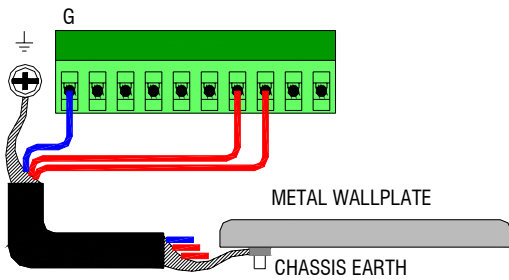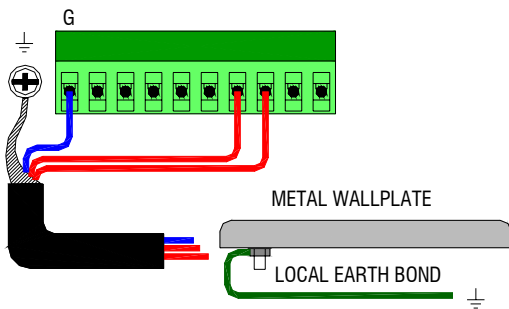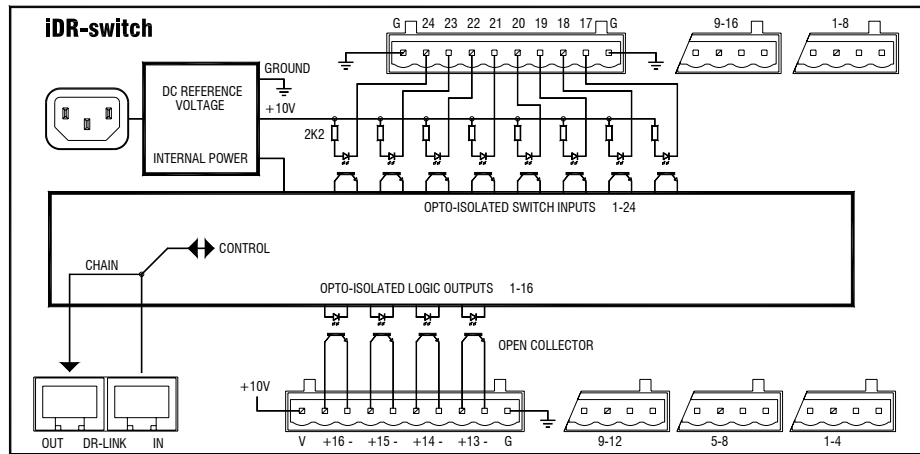
Connectors and grounding

Pluggable Phoenix type screw terminal connectors are used for connecting the external switches and logic to the **iDR-switch**. Mating plugs are provided with the unit. Make sure the wire ends are carefully stripped and inserted into the terminals. Tighten the screws using the correct slotted screwdriver. To ensure interference-free operation use shielded cable. Connect the shields to the chassis ground screw terminals provided next to each connector. Fit the screws with the shake proof washers provided.

⚠ For operator safety make sure that wall plates and other control surfaces made from metal are correctly bonded to ground (earth).

Strap the metal plate to the local ground at the wall box. For ground isolation between the wall plate and equipment rack connect the cable shield at the **iDR-switch** end only.

If a local ground is not available then use the cable shield to connect the plate to the chassis of the **iDR-switch** unit as shown. This is not necessary if the wall plate is made of non-conductive material such as plastic which insulates it from the operator.

Using the switch closure inputs

The input is opto-coupled to isolate the **iDR-switch** from the connected equipment. It is switched by linking its connector pin to the ground ('G') pin. Use a contact closure such as a momentary press switch to do this.

The input pin is fed from the internal +10V reference supply through a 2k2 ohm resistor. Around 5mA maximum current flows when connected to ground. Combined switch and cable resistance should not exceed 1k ohm for the switch to activate.

Each 10way connector provides 8 switch inputs. Either pin 1 or pin 10 'G' may be used as the common switch ground. One cable can feed this ground to a bank of switches. Two are shown in the diagram here. Do not use the chassis ground screw which is for cable shielding and safety earthing only.

For reliable operation we recommend the use of heavy duty sealed switches.

INTERNAL DR-switch CIRCUIT
(1 OF 4 SHOWN)

OPTO

OPEN COLLECTOR

+10V

V	+16 -	+15 -	+14 -	+13 -	G
V	+12 -	+11 -	+10 -	+ 9 -	G
V	+ 8 -	+ 7 -	+ 6 -	+ 5 -	G
V	+ 4 -	+ 3 -	+ 2 -	+ 1 -	G

LED INDICATORS

+10V DC

SUITABLE RESISTORS

LOW CURRENT 12V BULBS

+10V DC

LOW VOLTAGE RELAY

+10V DC

TO EQUIPMENT

SUITABLE RESISTOR

GROUND

200mA max

DEVICE

EXTERNAL POWER SUPPLY

+V (+24V DC max)

CURRENT SINK
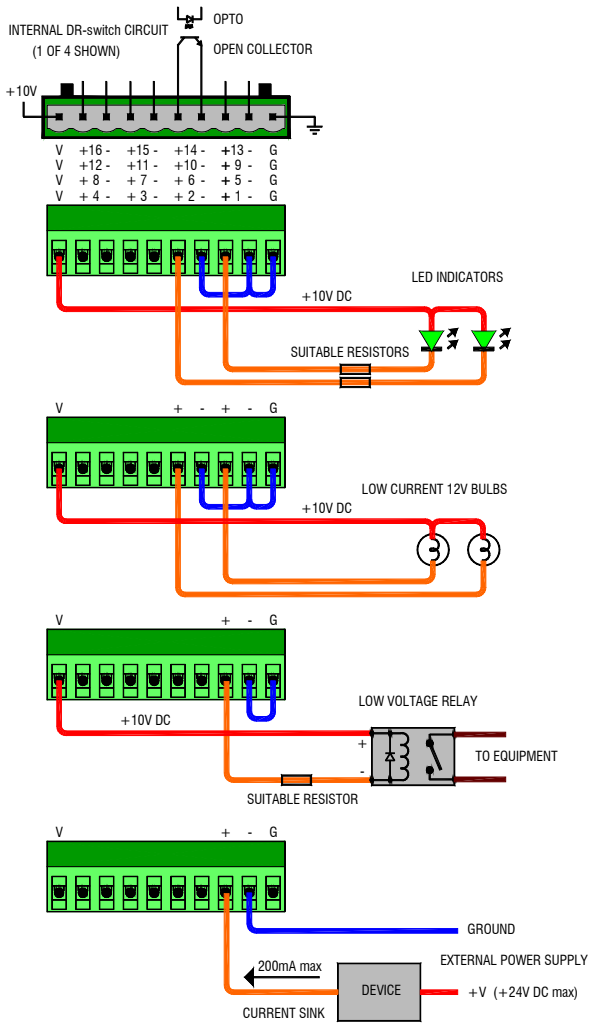
Using the logic outputs

Each output is opto-coupled to isolate the **iDR-switch** from the connected equipment. It provides an open collector output with floating collector (+pin) and emitter (-pin).

Each 10way connector provides 4 open collector pairs as well as an internal +10V DC supply and ground pins. Do not use the chassis ground screw which is for cable shielding and safety grounding only.

The output may be used in many ways to satisfy a wide range of interfacing applications. It is important that the installer has a good working knowledge of open collector and interfacing circuits. Incorrect application may result in damage to these outputs.

The internal +10V supply may be used as the power source for low current applications such as turning on LEDs, lamps and small relays. One cable can feed the common supply or ground to a bank of outputs.

⚠ **Maximum current drawn from the +10V supply for all outputs combined must not exceed 500mA. Care must be taken in component choice to ensure each operates within its specified capability.**

For higher current or voltage applications an external DC power supply may be used. This also provides total isolation between the **iDR-switch** and external equipment.

⚠ **Maximum external supply voltage must not exceed +24V DC. Maximum current sink through any open collector output must not exceed 200mA**.

A few examples are shown in the diagram here. For further advice contact Allen & Heath technical support.
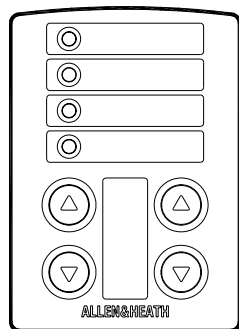
Remote controllers

The **iDR-switch** is designed to be used with a wide range of remote control devices including custom wall plates and operator panels. Check out the Allen & Heath range of **PL** wall plates and remote controllers. This range is continually developing and it is likely that some may be suitable for your application.

At the time of print of this user guide the **PL-2** wall plate is available for use with the **iDR-switch**. It has 4 switches and 4 3-colour LEDs which can be hard wired to the unit. It can be fitted into a UK or US standard single wall box. For further details visit the Allen & Heath web site.

iDR-switch

Switch closures
Open-collector logic
Relays
Lamps
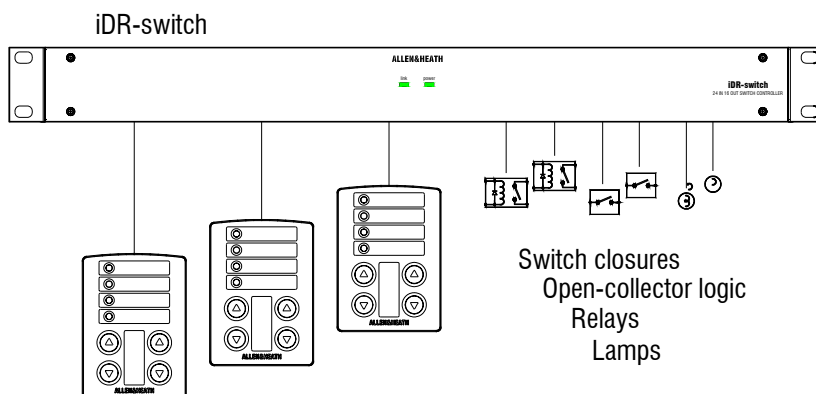
MIDI, SysNet and PL-Anet Ports

Together with RS232, the MIDI, SysNet and PL-Anet serial ports are part of the communications options available. The **iDR-8** offers huge flexibility by offering all these popular ports. However, they are not all available at the same time. The iDR allocates two ports A and B. You need to select two of these four options using the iDR System Manager software Communications Option window. Which ports are available is displayed by 'active' LEDs next to the connectors. Plan your system first to decide which ports to use.
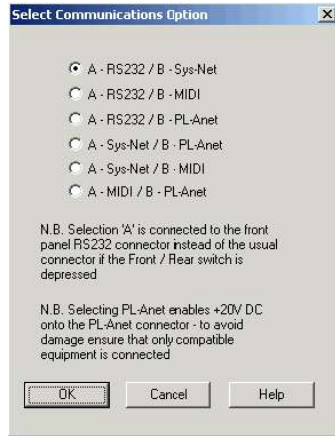
Checking which ports are available The active LED next to each connector lights if the port is available. If the port you want to use is not active then use iDR System Manager to change the settings. Be careful not to disable any other port being used with your system.

💻 **Selecting the Communications Options** Click on the File menu / Preferences / Communications Options item. This opens up the Select Communications Option window. You can select from the displayed combinations which options are associated with serial ports A and B. Choose the combination you require. This will require an **iDR-8** reboot for the changes to take effect. The port selection can be archived on your PC as part of the configuration file.
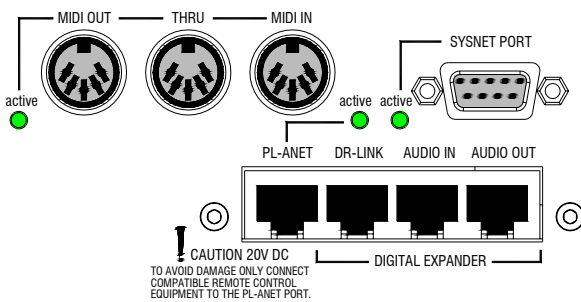
Parameters controlled via MIDI or SysNet. Check the latest Protocol document for further details and additions.

> Channel levels
> Group levels
> Channel mutes
> Crosspoint matrix levels
> Patch recalls
> Virtual switches
> Virtual indicators
> Patch recall messages
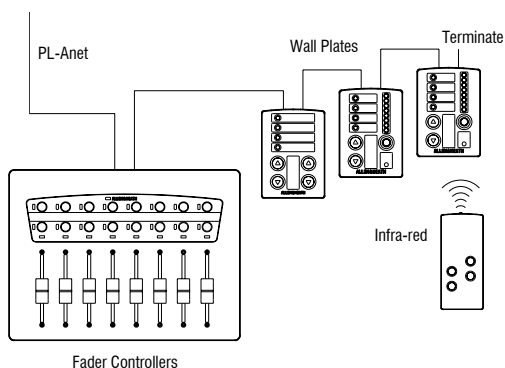
MIDI Three 5pin DIN connectors provide MIDI IN, THRU and OUT. These work with the popular MIDI interface standard. The MIDI channel number can be selected. Check the iDR System Manager Help file for more information on using MIDI with iDR. Refer to the Allen & Heath iDR MIDI Protocol document for details on how to control the parameters using MIDI messages. This can be downloaded from our web site. Use MIDI cables up to 15 metre (50 feet) in length.

SysNet This is an RS232 port with 9pin female D connector. It is dedicated to communicating with third party controllers such as the many touch screens and remote control systems available from other manufacturers. Refer to the Allen & Heath iDR SysNet Protocol document for details on how to control the parameters using this RS232 interface. This can be downloaded from our web site. Use standard RS232 cables up to 3 metres (10 feet) in length.

PL-Anet This is an RS485 port with RJ45 connector. It is dedicated to communicating with the Allen & Heath **PL** Series of intelligent wall plates and remote controllers over long distances. Each PL device has two connectors, an IN and an OUT, so that up to 15 devices can be daisy chained together using a single cable run. CAT5 STP cable is used. An RS485 terminator is required at the last device in the chain. This is provided with the PL device.

The optional **PL-9** PL-Anet hub is available to work with more devices over longer distances using 7 wiring branches.

Refer to the PL Combinations Calculator chart available from Allen & Heath to work out the maximum number of devices and distances possible. Refer to the Allen & Heath web site for the latest details on the full **PL** range of controllers available.

⚠ **When active, the PL-Anet port provides +20V DC phantom power which is sent down the cable to power the PL devices. To avoid damage make sure that only compatible equipment is connected. If you do not need to use the PL-Anet port make sure it is deselected from the communications options.**

The iDR-8 Memory System

The **iDR-8** has onboard flash memory. This is non-volatile memory that retains its settings when power is removed. Although the unit is configured using a PC, it holds its own operating code and settings in this memory for stand alone operation once the PC is removed. The memory holds several different types of information including the boot code, unit operating code, unit settings and patch settings. It is important to understand what each of these is and how they are affected when the unit is powered on and off.

Boot code   This is the software which manages the **iDR-8** operating code updates. It is factory installed. Pressing the front panel CODE UPDATE switch runs the boot code ready to communicate with your PC to load in new code using the Windows™ HyperTerminal application. The HyperTerminal window displays the current version of boot code.

Operating code   This is the software that determines how the **iDR-8** functions. It handles the digital processing of the audio signals and uses the configured settings held in memory to provide the control assigned by the installer. It also communicates with the iDR System Manager software. For this reason it is important that the operating code and iDR System Manager are the same version number. Allen & Heath provide regular updates to product software as new features and improvements are added. Check our web site for the latest version.

New versions of operating code can be loaded into the **iDR-8** either as a binary file via RS232, or through the network connection once communication is established with the PC running iDR System Manager software.

System power up   The current patch settings are not restored on power up. Instead the **iDR-8** recalls the patch which you have set as the 'power up patch'. You can use this to safely reset the system to the starting point you want. If no power up patch has been set then the unit resets all its patch parameters to factory default, the same as stored in the RESET configuration file. The configuration settings are restored and the patches can be recalled in the normal way.

iDR-8 unit settings   These are the settings which are permanently held in the unit and not archived on the PC. They include settings which the unit uses to communicate with the outside world including the PC used for configuration. They are unique to the unit.

> Unit name
> Unit password
> TCP/IP and PPP connection settings
> Meter style and monitor settings
> Time and day of week clock

Configuration file settings   These are the settings which can be archived to the PC as a .cfg configuration file. They store how the unit is set up for a particular installation or application. You can completely reconfigure the system by loading in a different configuration. You can load archived configurations into other **iDR-8** units. They include:

> Communication port preferences
> Synchronisation preferences
> Input and output channel names
> Input and output group names
> Stereo channel selections
> Scheduled events, clock related patch recall
> PL names
> All created patch settings

Patch settings   A patch is a selected number of parameters stored in memory. They are numbered, can be named, and can be recalled using several different methods including assigned front panel and remote soft key presses, scheduled events, SysNet and MIDI messages and so on. Up to 99 patches can be stored for any configuration depending on memory usage. A counter is provided to warn when patch memory is getting low. Parameters recalled by a patch can be selected from a detailed list including:

> Channel levels, mutes and polarity
> Fader group settings
> Channel processing parameters
> Matrix routing and levels
> Input and output source patchbays
> Input preamp settings
> AMM, ducker and pager settings
> LCD display settings
> Soft key and LED assignments
> **iDR-switch** and **PL** remote settings
> Audio monitor settings
> Signal generator settings

Starting with the Patches

The patch system is the key to the iDR system's unique flexibility. Unlike some systems which simply take a 'snapshot' of all the current settings, the **iDR-8** can store and recall any number of chosen settings from a huge list of parameters. These include not only the channel levels and processing such as equalisers and dynamics, but also how the soft keys, soft LEDs, LCD display and connected remotes are set up. You can set up 'full' patches that recall all settings to reset the system to a required starting point or change the application completely, and you can set up 'part' patches with just a few parameters that make local changes without affecting the rest of the system.

Plan your application   Before starting to configure the system plan how you want to use the soft controls and patches. Make sure you understand the effect that each patch will have before recalling it.

Use the simulation   the iDR System Manager provides a simulation of the **iDR-8** front panel as well as connected expanders and remotes. You can use these to experiment with the system offline as well as online.

Archive your settings   Make regular backups of your settings and save them under different .cfg file names so that you can restore your last settings if you make a mistake.

Decide your system starting point   Assign the soft keys, soft LEDs, LCD text, remote controls, and which channels are to be stereo before you start saving patches.   It can be very complex changing these later once patches have been set up. Set all parameters for normal operation. Now save a full patch with all parameters selected. You may want to assign this as the power up patch. This gives you a known starting point.

Only store the parameters you need   For your working patches decide which parameters should be affected and save only those in the patches. That keeps the basic system assignment intact.

Keep it simple   Focus on the needs of the application and avoid the temptation to create complex patch structures. Plan the structure and apply sensible names to the patches. It can be helpful to have patch related text displayed in the LCD.

Log your settings   Keep a log of how you have set your patches up. This is important if you need to revisit an installation some time in the future to make changes. For example, additional sources may have been added and patches need updating to include the new source.

Some Applications   The possibilities are limited only by your imagination and ingenuity. A few useful applications of the patch system include:

SINGLE KEY SOURCE SELECTION – Assign a soft key for patch recall. The patch it recalls routes the new source and also reassigns the key to another patch. Next press recalls a different patch to route a different source, and so on. It could also associate the same LED but with a different colour to each patch. This way, one key can cycle through several selections with LED colour change to indicate status.

INTERLOCKED KEYS – Pressing one key recalls a patch, pressing the next recalls a different patch, for example, a row of keys selecting between different sources.

ZONE LEVEL CHANGE – A wall plate key could recall a patch which affects the level in one zone only. It could also change EQ settings, for example to add more punch to a louder setting, compensate for a noisier room, or change the mood.

LCD MESSAGES – You could send a message to another unit using a patch that affected just the display text.
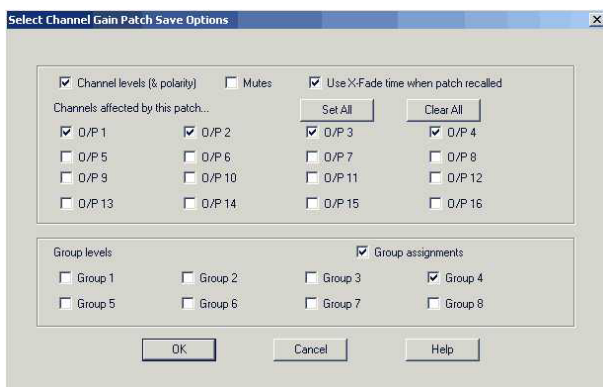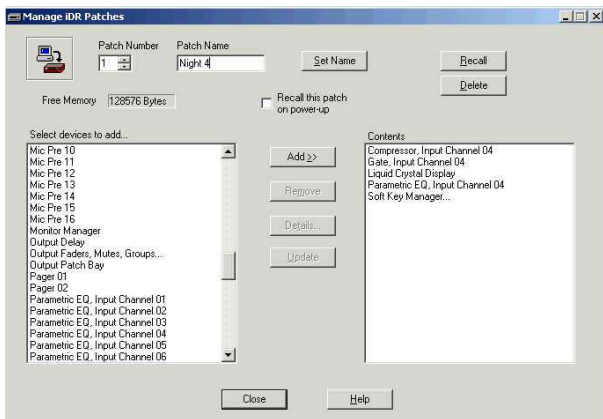
Technical Specification
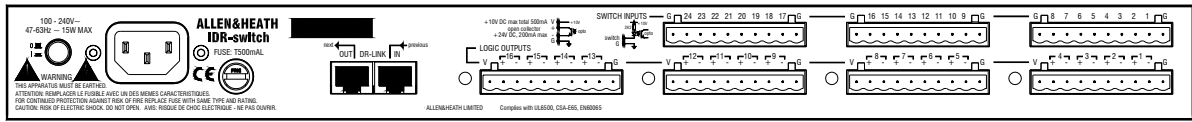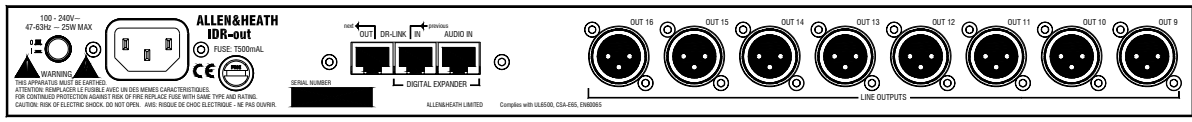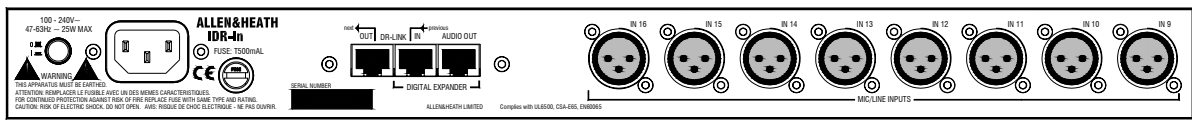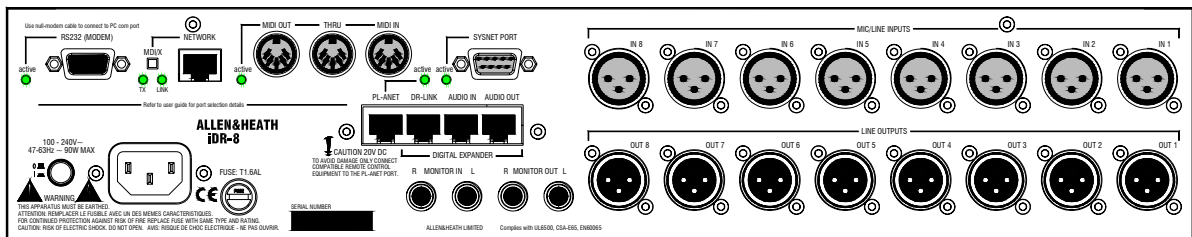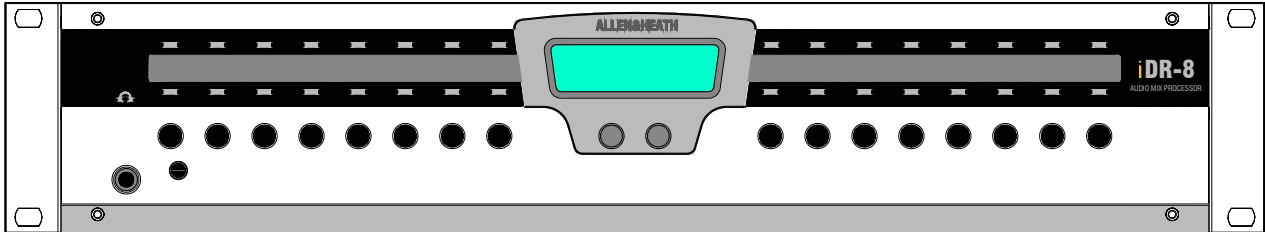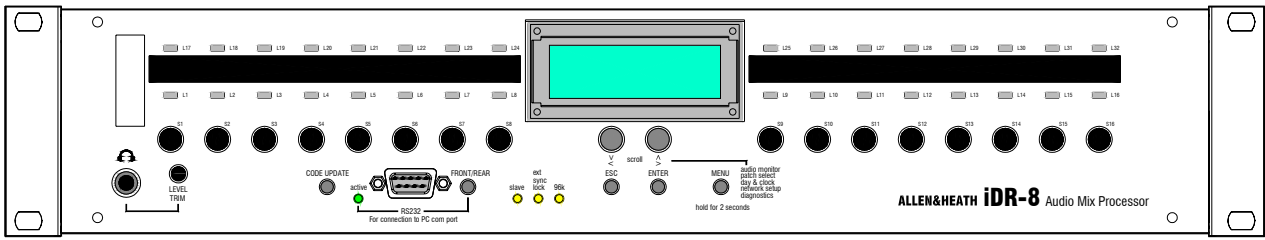
Application

Installed, live and special project sound

Installer configured, operator controlled

Set and forget, remote control

Zoned sound distribution and control

Paging and background music

Source routing and mixing

Signal equalisation and dynamics processing

Automatic microphone mixing

Venue speaker management

System time alignment

iDR System Manager software
System configuration

PL Designer software
PL Client software
'Virtual' wall plates

MODEM

RS232

NETWORK

AUDIO EXPANDERS

iDR-in

iDR-out

AUDIO MONITOR

iDR-8

Sys-Net

MIDI

DR-Link

iDR-switch

Switch closures
Open-collector logic
Relays
Lamps

PL-Anet

Infra-red

REMOTE CONTROLLERS

---

iDR NAME

PHYSICAL INPUTS — INPUT CHANNELS — OUTPUT CHANNELS — PHYSICAL OUTPUTS

NAME

NAME

+48V

GAIN

ANALOG INPUT

PAD

ADC

SOURCE

1

8

EXPANDER INPUT 9

16

M M M M M M M M M M M

DELAY

PEQ4

GATE

COMP

FADER

MUTE

GR

ACTIVE

MIX MATRIX

DELAY

PEQ8

HF SHELF
LF SHELF
BELL
HF FILTER
LF FILTER
XOVER FILTER

FADER

MUTE

GR

LIMIT

GR

SOURCE

DAC

ANALOG OUTPUT

1

8

9 EXPANDER OUTPUT

16

FADER

SIG GEN

OSCILLATOR
PINK NOISE
WHITE NOISE
1/3 OCT BP

FREQ

MUTE

SEL

MONO

1

16

1+2

STEREO

15+16

SIDECHAIN

FILTER

M

PAGER

AMM

DUCKING

PHONES TRIM

SOURCE

MONITOR INPUT

L

R

ADC

ADC

M

ACTIVE MONITOR BUS

FADER

MUTE

SOURCE

DAC

DAC

MONITOR OUTPUT

L

R

---

iDR-8

INPUT   OUTPUT

1 1
2 2
3 3
4 4
5 5
6 6
7 7
8 8

iDR-in

9 9
10 10
11 11
12 12
13 13
14 14
15 15
16 16

iDR-out

EXPANDER

EXPANDER

SIG GEN

ACTIVE MONITOR

MONITOR IN

MONITOR OUT

HEADPHONES

---

iDR-8 User Guide

41

Description

iDR-8 8 mic/line in 8 line out main processor

iDR-in 8 mic/line in audio expander

iDR-out 8 line out audio expander

iDR-switch 24 switch, 16 logic output expander

PL Range of wall plates and remote controllers

iDR-8 Operator Front Panel

Face plate fitted

2x16 character assignable backlit LCD display

16x installer assigned soft keys

2x scroll keys

32x installer assigned 3-colour soft LEDs

Headphones socket with recessed level trim

Key function label protected by window

iDR-8 Installer Front Panel

Face plate removed (4x 2mm hex screws)

Setup keys – menu, enter, esc, scroll up/down

Menu items – patch select, clock, day, unit name, network setup, PPP setup, audio monitor, diagnostics

Status LEDs – slave, ext sync lock, 96kHz

RS232 – for connection to PC COM port

Front/rear RS232 port select switch

Code update mode switch

Ident strip – for installer fitted custom label

iDR-in, iDR-out Front Panels

Status LEDs – link, lock, power

8x installer assigned 3-colour soft LEDs

iDR-switch Front Panel

Status LEDs – link, power

DSP

2x Motorola 24bit processors, 56bit mix accumulator

Audio matrix (48kHz) 16x16

Latency XLR in to XLR out with processing <2.3ms

A/D Converters

24bit resolution

Dynamic range 109dB A-weighted, 106dB unweighted

D/A Converters

24bit resolution

Dynamic range 115dB A-weighted, 112dB unweighted

Performance

Frequency response 20Hz-20kHz +0/-0.5dB

Crosstalk <-80dB @ 1kHz, 0dB gain

THD+noise <0.01% @ 1kHz, 0dBu

Residual output noise <-93dBu

Input to output noise @ 0dB gain <-87dBu

Input to output noise @ 50dB gain <-73dBu

Mic/Line Inputs x8 (x16 expanded)

Female 3pin XLR

Electronically balanced, pin 2 hot

Impedance 2k ohm (pad out), >10k ohm (pad in)

Gain range -15 to +50dB in 3dB steps

Pad -20dB

Sensitivity (pad out) -50 to -5dBu

Sensitivity (pad in) -30 to +15dBu

Maximum input level +33dBu

Phantom power +48V DC switched

Line Outputs x8 (x16 expanded)

Male 3pin XLR

Electronically balanced, pin 2 hot

Impedance <75 ohms

Maximum output +18dBu

Expander Input Port

RJ45 connector

Proprietary 8 channel digital audio

From **iDR-in** audio expander

CAT5 STP cable up to 250 metres (825 feet)

Expander Output Port

RJ45 connector

Proprietary 8 channel digital audio

To **iDR-out** audio expander

CAT5 STP cable up to 250 metres (825 feet)

Stereo Monitor Inputs

Ripple through audio monitor

Can be assigned as extra channel inputs

Separate L and R TRS jacks

Electronically balanced, tip hot

Impedance >30k ohm

Sensitivity 0dBu

Maximum input +18dBu

Stereo Monitor Outputs

Line output from active monitor bus

Can be assigned as extra output channels

Separate L and R TRS jacks

Electronically balanced, tip hot

Impedance <75 ohms

Normal output 0dBu

Maximum output +18dBu

Headphones

Stereo output on TRS jack

Tip left, ring right

For headphones >30 ohms impedance

Front panel recessed level trim

Adjust with flat bladed screwdriver

Network Port

For system configuration and control using iDR System Manager and PL Client software

RJ45 TCP/IP Ethernet

MDI/X switch for hub or direct to PC connection

Set DHCP on/off, IP, subnet mask, gateway address

CAT5 UTP cable up to 100 metres (330 feet)

Communications Port Options

Always available – TCP/IP network, DR-Link

Selectable combinations:

        RS232 + SysNet

        RS232 + MIDI

        RS232 + PL-Anet

        SysNet + PL-Anet

        MIDI + PL-Anet

        Sys-Net + MIDI

Available ports indicated by active LEDs

RS232

Uses PPP dial-up connection

Settings Host, Client IP address, username, password

Baud rate 115200, 8N1

Cable length <3 metres (10 feet)

Front Panel RS232 Port

For code update via PC

Use standard 9pin male to female RS232 cable

Connects to PC COM1 or COM2 port

Rear Panel RS232 (MODEM) Port

For connection to modem or PC

Use standard 9pin female to male cable to modem

Use 9pin female to female null modem cable to PC

MIDI

Remote parameter control, show automation

Opto-isolated MIDI in, thru, out on 5pin DIN socket

Note on/off, program change, NRPN

Channel set to 1

Refer to Allen & Heath iDR MIDI protocol

SysNet

Remote parameter control using third party controllers

9pin D female RS232

Baud rate 19200, 8N1

Cable length <3 metres (10 feet)

Refer to Allen & Heath iDR SysNet protocol

PL-Anet Port

Serial port for daisy chained Allen & Heath PL intelligent remote controllers

Proprietary Allen & Heath control protocol

RJ45 RS485 with +20V DC phantom power

Requires end-of-line termination

CAT5 STP cable, follows EIA/TIA 568B standard

Refer to Allen & Heath application chart for lengths

DR-Link Port

Serial control of iDR expander units

Proprietary Allen & Heath control protocol

RJ45 connector

IN and OUT ports provided on expanders to allow daisy chaining through multiple units

CAT5 STP cable up to 300 metres (1000 feet)

iDR-switch Inputs x24

Contact closure to connect pin to ground

Opto-isolated via 2k2 ohm from internal +10V supply

Sink current 5mA,

Maximum cable resistance 1k ohm

3x 10way Phoenix connectors, 8 switches per

Mating screw terminal plugs supplied

Ground screws provided for cable shields

iDR-switch Logic Outputs x16

Opto-isolated open collector

Floating collector (+) and emitter (-) terminals

Internal DC source provided +10V 500mA total max

External DC supply maximum +24V

Up to 200mA current sink per output

Ground screws provided for cable shields

Power Supply

Universal mains input switched mode design

IEC 3pin, country dependent mains lead supplied

Rear panel power on/off switch

AC mains input 100-240V AC 50/60Hz

Variable speed cooling fan in **iDR-8**

iDR-8 80VA max, T1.6AL 20mm fuse

iDR-in, **iDR-out** 25VA max, T500mAL 20mm fuse

iDR-switch 15VA max, T500mAL 20mm fuse

Mechanical

19" rack or stand alone desk/shelf mount

Removable rack ears, press-in rubber feet

		Width x Depth x Height
iDR-8	2U rack	483 x 360 x 88mm
		19" x 14.2" x 3.5"
	Desk	443 x 360 x 92mm
		17.4" x 14.2" x 3.6"
	Weight	7kg, 15.4 lbs
iDR-in, **iDR-out**	1U rack	483 x 232 x 44mm
		19" x 9.1" x 1.7"
	Desk	443 x 232 x 48mm
		17.4" x 9.1" x 1.9"
	Weight	3.5kg, 7.7 lbs
iDR-switch	1U rack	483 x 144 x 44mm
		19" x 5.7" x 1.7"
	Desk	443 x 144 x 48mm
		17.4" x 5.7" x 1.9"
	Weight	2.2kg, 5 lbs

Allow extra 75mm (3") depth for connectors

Software

Downloadable from Allen & Heath web site

iDR-8 operating code – can be updated via RS232 using Windows™ HyperTerminal, or via network using iDR System Manager

iDR System Manager configuration software

        Uses Windows™ PC

        On and off line operation

        Required only for system configuration

PL Designer virtual controller design software

        Uses Windows™ PC

        Configured by installer

        Allows restricted operator control

PL Client virtual controller

        Uses Windows™ PC

        For operator control from PC workstation

Clock

Time hours : minutes : seconds, 24 hour clock

Day of week

Manually enter or sync to PC

Naming

Unit name – up to 16 characters

Patch names – up to 8 characters

Input/output channels – up to 8 characters

Fader group names – up to 8 characters

LCD display user text – up to 16 characters

Soft Switches

Assignable by the installer

iDR-8 16x front panel

iDR-switch 24x contact closure

PL remotes various

Latching, press, release actions or unused

Level control – input, output, crosspoint, group, up, down, up/down (using scroll keys), range limit

Mute control – on, off, toggle

Patch control – recall

Logic control – **iDR-switch** logic outputs, PL remotes

Soft LEDs and Logic Outputs

Assignable by the installer

iDR-8 32x front panel

iDR-in 8x front panel

iDR-out 8x front panel

iDR-switch 16x open collector outputs

PL remotes various

3-colour – green, yellow, red, off

Signal meters (3-colour), mute, static patch related

Level sense switching from meter activity

LCD Display

2x16 character, grey, backlit

Assignable display, patch related

Combinations of clock, unit name and user text

Setup menu, code update and status modes

Memory System

Up to 99 patches, memory usage dependent

Patch name – up to 8 characters, displays on PC, can display in LCD

Select parameters to save from on screen list

Add/remove/copy/paste parameter edit functions

Selectable power up patch recall

Patch recall assignable to front panel and remote soft switches

Scheduled events (clock related patch recall)

Adjustable level cross fade between patches

Parameters stored in **iDR-8**:

        Unit name and password

        Time and day clock, meter settings

        TCP/IP and PPP settings

        Configured settings and patches

Parameters archived as **configurations files**:

        Communication port preferences

        Synchronisation preferences

        Channel names

        Fader group names

        PL names

        Stereo channel selection

        Scheduled events

        Patch contents

        Power up patch (if one has been set)

Parameters stored in **patches**:

        Fader levels and patch cross fade time

        All channel processing parameters

        Matrix settings

        Input and output source patchbays

        Input preamp settings

        AMM, ducker and pager settings

        Fader group settings

        LCD display settings

        Soft key and LED settings

        iDR-switch and **PL** remote settings

        Monitor settings

        Signal generator settings

Source Patchbays

Emulates a physical patchbay

Input channel source – analog XLR 1-8, expander 9-16, monitor LR, signal generator

Output XLR source – output channel 1-16, monitor LR

Mix Matrix

Input / output channel crosspoint matrix

Switched routing or variable level fader at each point

Fader range off to 0dB in 51 steps

48kHz mode – 16x16

96kHz mode – 8x8

Controls - set/clear individual row, column or all

Level Control

Input channels, output channels, monitor, signal generator

Linear fader range off to +5dB in 51 steps

Controls – mute, polarity reverse

Fader Groups

Channel faders can be assigned to master faders

Fader range off to 0dB in 51 steps

8x input fader groups

8x output fader groups

Groups can be named – up to 8 characters

Stereo Linking

Adjacent channels can be linked for stereo operation

Presents single channel strip

Processing linked

Matrix routing linked

Stereo metering

Metering

Input meters selectable source, post-EQ, post-dynamics, post-fade

Output meters selectable post-matrix, pre-fade, post-fade, post-limiter

Assignable 3-colour panel meters – green -24dBu, yellow 0dBu, red +14dBu

GUI meters – extensive on screen metering displayed for all points in the signal path

GUI meter style – Select 1 of 4 meter bar display types

PEQ

Input channels – 4 band fully parametric

Output channels – 8 band fully parametric including crossover filter slopes

Band types – HF shelf, LF shelf, bell, HPF, LPF, notch, crossover filter

Gain +/-15dB cut/boost

Makeup gain +/-12dB

Width variable Q 0.5 to 6, constant Q on/off

Notch filter width 10Hz to 100Hz

Crossover filter Butterworth / Linkwitz-Riley up to 24dB/octave

Display - frequency response curve, meter

Controls – in/out, flatten

Gate

Threshold -72 to +18dBu

Depth 0 to -80dB

Attack 20us to 300us

Hold 50ms to 5s

Release 50ms to 1s

Display – level response curve, gate active, in, out and sidechain meters

Controls – in/out, sidechain in/out

Compressor

Threshold -48 to +18dBu

Ratio variable 1:1 to 1:infinite

Knee hard/soft

Makeup gain 0 to +18dB

Attack 300us to 300ms

Release 100ms to 2s

Auto modes – live, music AGC, vocal, speech

Display – level response curve, gain reduction, in, out, sidechain meters, time versus reduction histogram

Controls – in/out, sidechain in/out, auto on/off

Sidechain Filter

Can be switched into compressor and/or gate

1 band EQ, type and parameter control as PEQ

Output Limiter

Threshold -20 to +18dBu

Attack 40us to 400ms

Release 50ms to 1s

Display – level response curve, gain reduction, in, out meters, time versus reduction histogram

Controls – in/out, fader

Delay

Available on input and output channels

Time 0 to 340ms per channel

Enter delay in ms, metres or feet

Global temperature compensation -20 to +40 deg C

AMM

Automatic mic mixing - NOM and ambient level

Ambient level sensing – average of all selected mics

Mic open threshold 4 to 20dB above ambient level

Hold time 0 to 5s

NOM attenuation 1 to 6dB

Pager

2 independent configurable pagers

Paging – any soft switch, latch or press

Zone select – any soft switch. Latch or auto cancel

Indicators – any soft LED

Ducker depth 0 to -40dB

Controls – page mic select, zone select

Audio Monitor

Ripple through stereo audio monitor

Select source manually or moving mouse

Display – stereo meters

Controls – fader, mute

Signal Generator

Source variable frequency sine wave, white noise, pink noise, band pass pink noise

Sine wave / band pass range 20Hz to 20kHz

Controls – fader, mute

Factory default unit settings

Unit name – iDR Unit Name

Network settings

 DHCP – No

 IP address – 192.168.0.1

 Net mask – 255.255.255.0

 Gateway address

PPP settings

 Host IP address – 192.168.0.1

 Client IP address – 192.168.0.2

 User name – iDR

 Password – A&H

Factory default configuration settings

Input channel names

 I/P 1…. I/P 16

Output channel names

 O/P 1…. O/P 16

Input group names

 IP Grp 1…. IP Grp 8

Output group names

 OP Grp 1…. OP Grp 8

Stereo selections

 All mono

Communications option

 A RS232 B SysNet

Scheduled events

 None

Power-up patch

 None

All patches empty

Factory default patch parameters

AMM

 No active inputs

 No active outputs

 Threshold 7dB

 Gate depth 40dB

 Hold time 1s

 NOM attenuation 3dB

Input delays

 All 0ms

Output delays

 All 0ms

Input faders, mutes, groups

 Fader levels off

 Mutes off

 Group assignments none

 Group levels 0dB

Input patchbay

 XLR 1 to Channel 1….

 XLR 8 to Channel 8

 Expander 9 to Channel 9….

 Expander 16 to Channel 16

Output patchbay

 Channel 1 to XLR 1….

 Channel 8 to XLR 8

 Expander 9 to XLR 9….

 Expander 16 to XLR 16

LCD

 Line 1 – user text 'Allen & Heath'

 Line 2 – time

Mic preamps

 Pad on

 Gain +20dB (resulting gain 0dB)

 +48V off

 Limiter off

Monitor manager

 Follow mouse / active window

Routing matrix

 All cross points 0dB (on)

Signal generator

 Signal type – sine wave

 Frequency – 440Hz

 Level - -30dB

Front panel soft keys

 S1-S8 – input level control CH1-8

 S9-S16 – output level control CH1-8

iDR-switch inputs

 S1-S24 – unused

Front panel soft LEDs

 L1-L16 – static LED off

 L17-L24 – input source meters CH1-8

 L25-L32 – output post limiter meters CH1-8

iDR-switch outputs

 S1-S16 – static LED off

Input expander

 S1-S8 – input source meters CH9-16

Output expander

 S1-S8 – Output post limiter meters CH9-16

Template for Allen & Heath iDR-8 Front Panel Key Label

File: iDR-8_label.dot for Microsoft® Word

Each label is a table. You can format it in the usual way.

Edit the text to identify the key and LED functions (maximum of three lines per cell, each with eight characters).

Overall size of each label is 187 x 13 mm.

Insert the labels into the iDR-8 front face plate, between the plastic LED facias and the metal face plate.

Once fitted the labels are protected by the face plate plastic windows.

	1	2	3	4	5	6	7	8	

	9	10	11	12	13	14	15	16	