DARC S Series



Technical Manual

April 2, 2026

Dante®

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Introduction

Thank you for purchasing this product by Arrakis Systems. Our company has provided professional audio equipment to the broadcast, commercial audio, and consumer audio markets for more than 30 years. Our products are sold worldwide and are well known for leading edge technology, quality, and reliability.

How to contact Arrakis Systems

Arrakis Systems Inc. is located at:

Arrakis Systems Inc
6604 Powell Street
Loveland, Colorado
80538

Business Hours: 8:00am - 4:30pm mountain time

Voice: 970-461-0730 x316

Fax: 970-663-1010

Email: consolesupport@arrakis-systems.com

Having difficulty contacting Arrakis?
Refer to the website (www.arrakis-systems.com) for current contact information

Safety Instructions

1. Read All Instructions. All safety and operating instructions must be read before operating the product.
2. Retain All Instructions. All safety and operating instructions must be retained for future reference.
3. Heed All Warnings. All warnings on the product and those listed in the operating instructions must be adhered to.
4. Follow All Instructions. All operating and product usage instructions must be followed.
5. Heat. This product must be situated away from any heat sources such as radiators, heat registers, stoves, or other products (including power amplifiers) that produce heat.
6. Ventilation. Slots and openings in the product are provided for ventilation. They ensure reliable operation of the product, keeping it from overheating. These openings must not be blocked nor covered during operation. This product should not be placed into a rack unless proper ventilation is provided through following the manufacturer's recommended installation procedures.
7. Water and Moisture. Do not use this product near water—for example; near a bath tub, wash bowl, kitchen sink or laundry tub; in a wet basement; or near a swimming pool or the like.
8. Attachments. Do not use any attachments not recommended by the product manufacturer as they may cause hazards.
9. Power Sources. This product must be operated from the type of power source indicated on the marking label and in the installation instructions. If you are not sure of the type of power supplied to your facility, consult your local power company.
10. Grounding and Polarization. This product is equipped with a polarized AC plug with integral safety ground pin. Do not defeat the safety ground in any manner.
11. Power Cord Protection. Power supply cords must be routed so that they are not likely to be walked on nor pinched by items placed upon or against them. Pay particular attention to the cords at AC wall plugs and convenience receptacles, and at the point where the cord plugs into the product.
12. Lightning. For added protection for this product during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the AC wall outlet. This will prevent damage to the product due to lightning and power line surges.
13. Overloading. Do not overload AC wall outlets, extension cords, or integral convenience outlets as this can result in a fire or electric shock hazard.
14. Object and Liquid Entry. Never push objects of any kind into this product through openings as they may touch dangerous voltage points or short-out parts that could result in a fire or electric shock. Never spill liquid of any kind on the product.
15. Accessories. Do not place this product on an unstable cart, stand, tripod, bracket, or table. The product may fall, causing serious damage to a child or adult, and serious damage to the product. Any mounting of the product needs to follow manufacturer's installation instructions.
16. A Product and Cart Combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the product and the cart combination to overturn.
17. Servicing. Refer all servicing to qualified servicing personnel.
18. Damage Requiring Service. Unplug this product from the wall AC outlet and refer servicing to qualified service personnel under the following conditions: a. When the AC cord or plug is damaged. b. If liquid has been spilled or objects have fallen into the product. c. If the product has been exposed to rain or water. d. If the product does not operate normally (following operating instructions). e. If the product has been dropped or damaged in any way. f. When the product exhibits a distinct change in performance. This indicates a need for service.
19. Replacement Parts. When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or that have the same characteristics as the original parts. Unauthorized substitutions may result in fire, electric shock, or other hazards.
20. Safety Check. Upon completion of any repairs to this product, ask the service technician to perform safety checks to determine that the product is in proper operating condition.
21. Cleaning. Do not use liquid cleaners or aerosol cleaners. Use only a damp cloth for cleaning.

Hazard / Warning Label Identification

WARNING: SHOCK HAZARD - DO NOT OPEN
AVIS: RISQUE DE CHOC ELECTRIQUE - NE PAS OUVRIR

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK DO NOT REMOVE ANY COVER OR PANEL. NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THE CONSOLE TO RAIN OR MOISTURE.



The Exclamation Point symbol, within an equilateral triangle, alerts the user to the presence of important operating and maintenance (servicing) instructions in product literature and instruction manuals.

The Lightning Flash With Arrowhead symbol, within an equilateral triangle, alerts the user to the presence of uninsulated dangerous voltage within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock.

WARNING— This equipment generates, uses and can radiate radio frequency energy. If not installed and used in accordance with the instructions in this manual it may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device (pursuant to Subpart J of Part 15 FCC Rules), which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference, in which case the user, at his own expense, will be required to take whatever measures may be required to correct the interference.

Warranty

This console carries a manufacturer's warranty subject to the following guidelines and limitations:
A) Except as expressly excluded herein, Arrakis Systems Inc. ("Seller") warrants equipment of its own manufacture against faulty workmanship or the use of defective materials for a period of one (1) year from date of shipment to Buyer. The liability of the Seller under this Warranty is limited to replacing, repairing or issuing credit (at the Seller's discretion) for any equipment, provided that Seller is promptly notified in writing within five (5) days upon discovery of such defects by Buyer, and Seller's examination of such equipment shall disclose to its satisfaction that such defects existed at the time shipment was originally made by Seller, and Buyer returns the defective equipment to Seller's place of business in Loveland, Colorado, packaging and transportation prepaid, with return packaging and transport guaranteed.

B) Equipment furnished by Seller, but manufactured by another, shall be warranted only to the extent provided by the other manufacturer.

C) Thermal filament devices (such as lamps and fuses) are expressly excluded from this warranty.

D) The warranty period on equipment or parts repaired or replaced under warranty shall expire upon the expiration date of the original warranty.

E) This Warranty is void for equipment which has been subject to abuse, improper installation, improper operation, improper or omitted maintenance, alteration, accident, negligence (in use, storage, transportation or handling), operation not in accordance with Seller's operation and service instructions, or operation outside of the environmental conditions specified by Seller.

F) This Warranty is the only warranty made by Seller, and is in lieu of all other warranties, including merchantability and fitness for a particular purpose, whether expressed or implied, except as to title and to the expressed specifications contained in this manual. Seller's sole liability for any equipment failure or any breach of this Warranty is as set forth in subparagraph (A) above; Seller shall not be liable or responsible for any business loss or interruption, or other consequential damages of any nature whatsoever, resulting from any equipment failure or breach of this warranty.

For the latest warranty information, please visit our website.

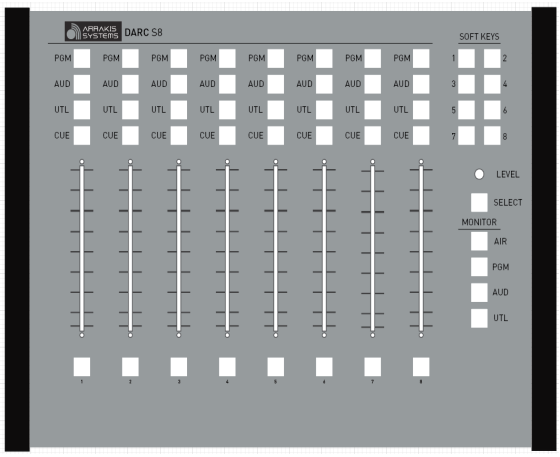
Product Description

DARC S8 & DARC S15

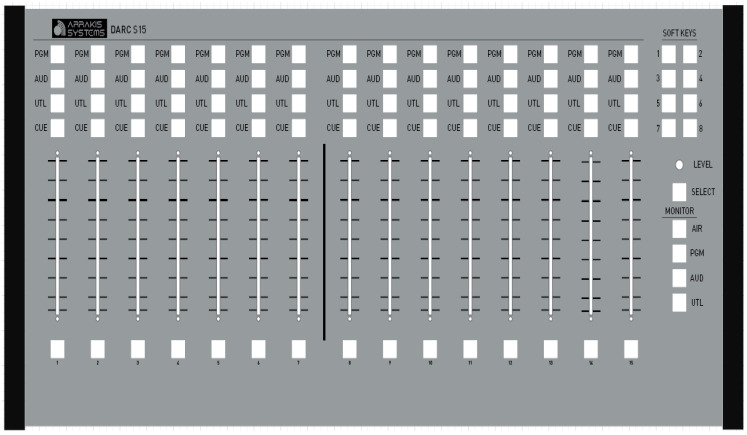
- 8 or 15 Channels (based on model purchased).
- Inputs - software selectable.
- Outputs - software selectable.
- 3 Stereo Outputs – Program, Audition and Utility.
- Connects and controls the DARC Virtual software. Audio is routed through Simple-IP nodes, or other Dante enabled audio device.
- Monitor, Headphone, and Cue system with external input for off air monitoring.
- Cue system autocues (with Program dimming) into the Monitor & Headphone systems.
- Mix Minus telephone interface through Simple-IP node or Dante audio device.
- Conductive plastic slide faders and LED switch lamps for long life.
- 8 programmable buttons for controlling software, changing assignments, etc.

DARC Virtual Console Software: Every DARC Surface comes with the DARC Virtual Console Software. This software will be ran on a configured PC, and handles all mixing of Dante AoIP audio. Details on how to use this software may be found on our website.

DARC S8

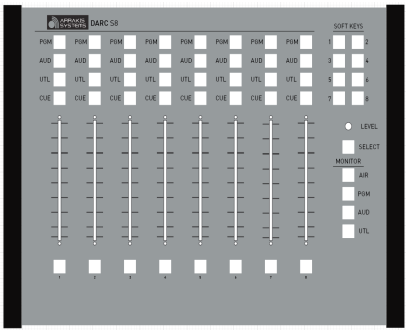


DARC S15



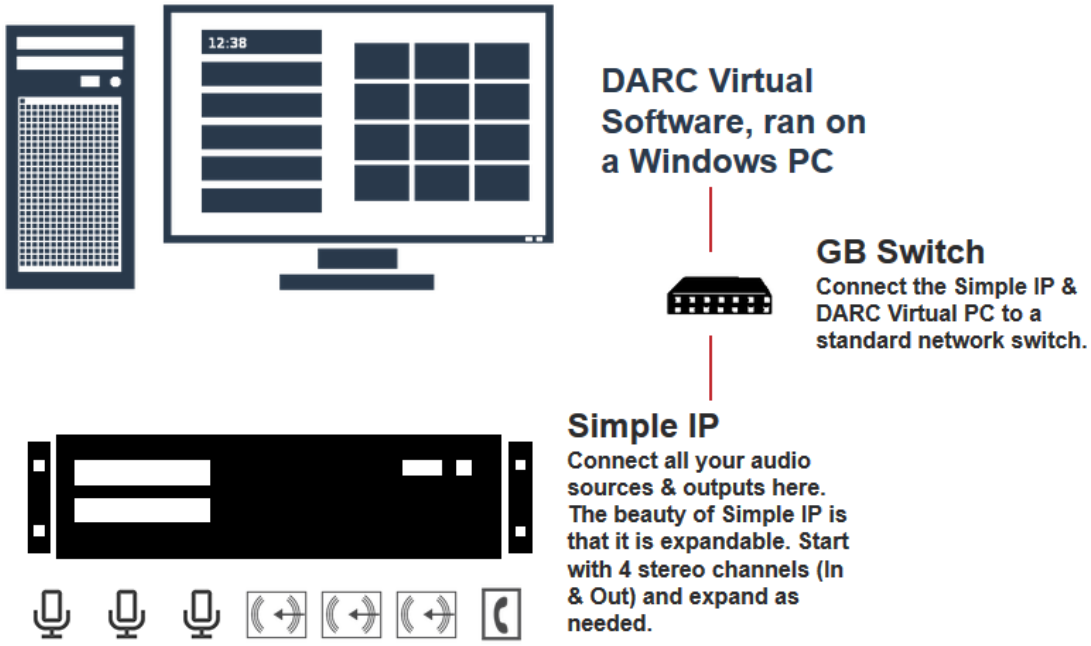
The DARC S series console, in conjunction with the DARC Virtual Console software and Simple IP node, can be ran either in a standalone or AoIP multi-studio configuration. The backbone of DARC is that it is expandable for any user's needs.

Standalone Configuration



In a standalone configuration you would have a DARC Surface, a PC running the DARC Virtual Software, a network switch and then a Simple IP unit with your audio inputs & outputs.

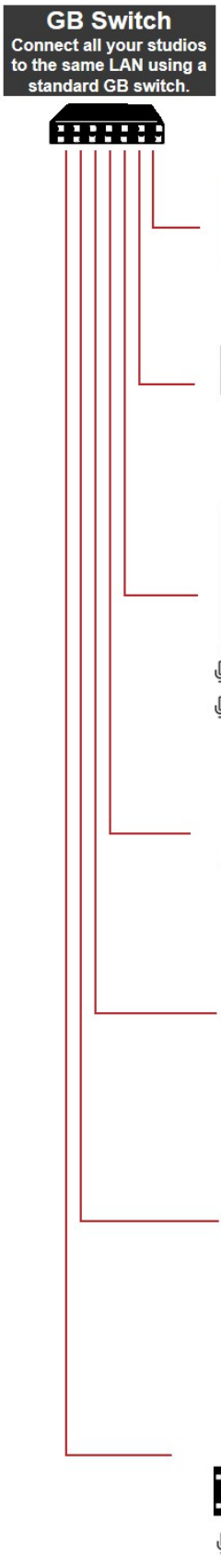
In this configuration, you do not need a large complex AoIP network, and it can be ran as a single unit. In time, if you wish, you may expand your network with additional Simple IP units along with control software and hardware.



<u>BASIC CONNECTION STEPS:</u>

1) **Connect your DARC S** console USB to the PC running your DARC Virtual Console.
2) **Connect your PC to your GB network** switch. Ideally this is a switch that is dedicated to your audio network, and is not connected to the network used by your office PC's.
3) **Connect all of your audio inputs and outputs** to your Simple IP units (or any Dante audio device). Connect the Simple IP units to your audio network.
4) **Use the Dante Controller to route audio** to your DARC Virtual Console software.

AoIP Configuration



As a digital console with AoIP capabilities, you can expand your operation at any time.

DARC Virtual Software
Controls any audio source on your Dante network.

Simple IP
Connect all your audio inputs and outputs here. Such as microphones, automation, MP3 players, phone systems, etc...

Rack Room
If you prefer your equipment centralized, you may bring your audio inputs and outputs to a rack room. All I/O will be accessible anywhere on your Dante network.

DARC S Series Console
Console control surface that utilizes DARC Virtual to control audio sources on your Dante network.

AES67 Studio
Connect any of your existing AoIP studios that are using AES67 compliant equipment, such as Wheatstone, Telos, or Lawo.

Auxiliary Studio
Connect any of your existing studios to the Dante network, either using Simple IP, or a Dante AVIO device.

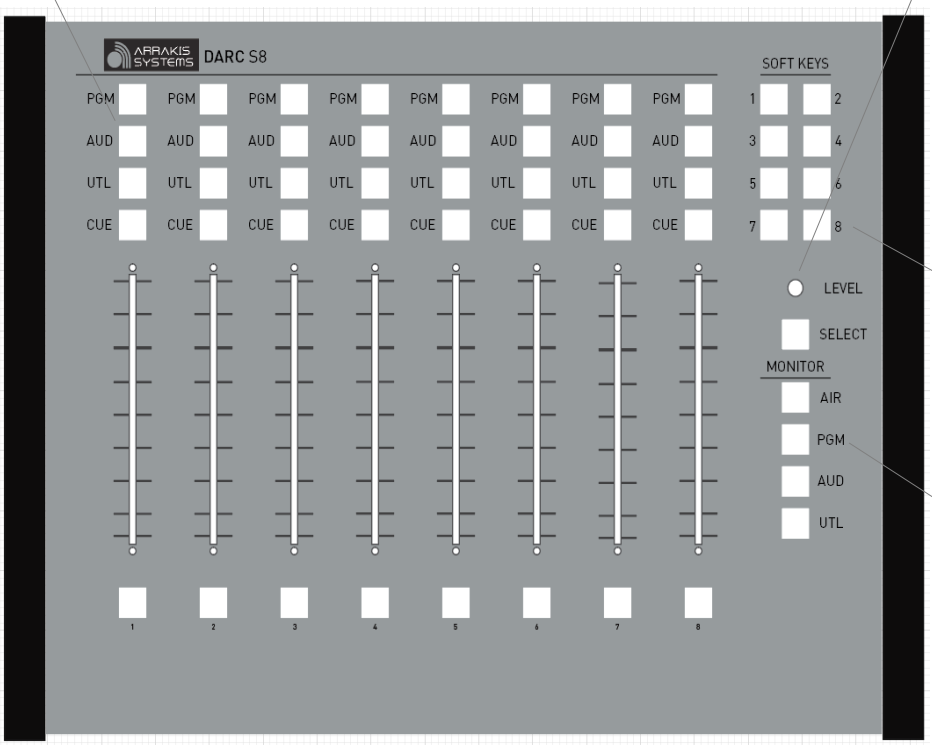
Analog Source
Connect any of your existing consoles to the Dante network, either using Simple IP, or a Dante AVIO device.

Operational Description

Lighted Switches.
5 Million operational LED lighted switches.

VU Meters.
Levels can be viewed from the DARC Virtual Software.

Monitor Volume Adjust
adjusting the levels for your Cue Headphone and Monitor outputs.



Programmable IO buttons.
Allows you to select user presets, control automation or other relay controlled devices.

Control Room monitor.
Selectable between (air) input, Program bus, Audition and Utility bus.

Programmable input channels
Choose from any source from your Dante network.

Any input for any channel.
Any channel can be mic, line, Mix-minus, etc.. You can make the assignments from the software, or directly from the board.

Number of Channels.
The base model is 8 channels. The DARC S15 has 15 channels. All of which can be configured to your needs.

Technical Description

Mechanical

Switch type:	Momentary, 5 million operation, for all front panel switches.
Switch illumination:	LED, for long life.
Linear Fader type:	Conductive plastic for highest possible resolution and life. 30,000 cycles. 256 step digital resolution.
Rotary Fader type:	Conductive plastic for highest possible resolution and life. 15,000 cycles.
IC sockets:	All IC's are socketed for ease of service.
VU Meters:	Long life LED meters.

Electronic

Audio switching:	Digital switching handles all audio changes on your Dante Network.
Audio level adjust:	For peak audio performance, all audio is passed through the Simple IP units.
Operational amplifiers:	NE5532, found on the Simple IP Units.
Mic preamp:	External Mic preamps must be used in conjunction with the Simple IP units.
Phantom power:	The 3rd party Mic Preamp must support this feature.
Logic ICs:	Advanced CMOS logic for high noise immunity.

Logic

I/O:	Optional logic I/O may be connected to the DARC Virtual PC to control On-Air lights and other equipment.
Programmable buttons:	8 programmable buttons to cycle user profiles, control automation, or other external devices.

Physical Specifications

CONSOLE DIMENSIONS:

S8
Depth - 12 inches - 304mm
Height - 2 inches - 51mm
Width - 17 inches - 431mm

S15
Depth - 12 inches - 304mm
Height - 2 inches - 51mm
Width – 27.5 inches - 698mm

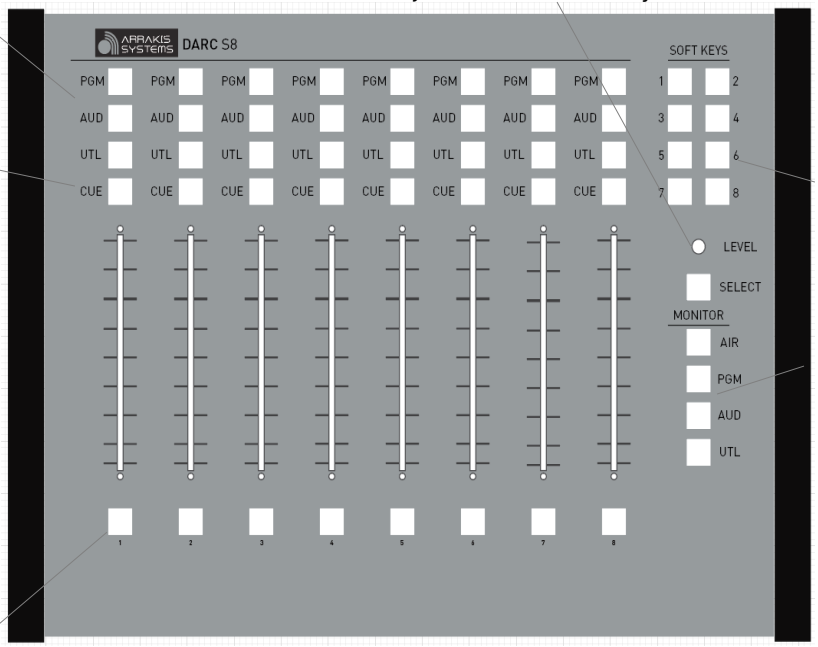
S8 Elite
Depth - 12 inches - 304mm
Height - 6 inches – 152mm
Width - 17 inches - 431mm

Operating Instructions

The DARC S series console is designed to be very easy to use.

PGM, AUD and UTL
Places the channel on either or both buses.

Volume adjustment
Lets you adjust the volume level for the Headphone, Monitor And Cue levels. Use the SELECT switch to switch between which level you would like to adjust.



Cue / Talk
If the source for the particular channel is selected as Line input, then the CUE button will play the selected audio out the Cue Speaker, and headphones.

If the source for the particular channel is selected as Mic input, then the CUE button will talk to another studio.

Soft Keys
Software assignable buttons for controlling the console, automation or other hardware.

Control Room Monitor
Selectable between an external (air) input, the Program bus, and the Audition bus. The output mutes when mic one or two are on.

On-Off
Push to turn the channel on and off.

Software Selectable Inputs
All channels are software assignable. You may choose between Mic, Line and Phone (mix/minus) for any channel.

Mono Mic Level Input Channels

Any channel can be assigned as a Mic input. These assignments are made in the DARC Virtual Console software. All microphones should be connected to a 3rd party Mic Preamp and then connected to a Simple IP Surface or Dante enabled node. Once on the Dante network, you can access that microphone anywhere on your Dante network.

Channel On & Off

To turn the channel on, simply push the red on switch at the bottom of the fader. When the channel is on, the switch will be lighted. To turn the channel off, simply push the red on button again.

Channel On & Off Mute Monitor

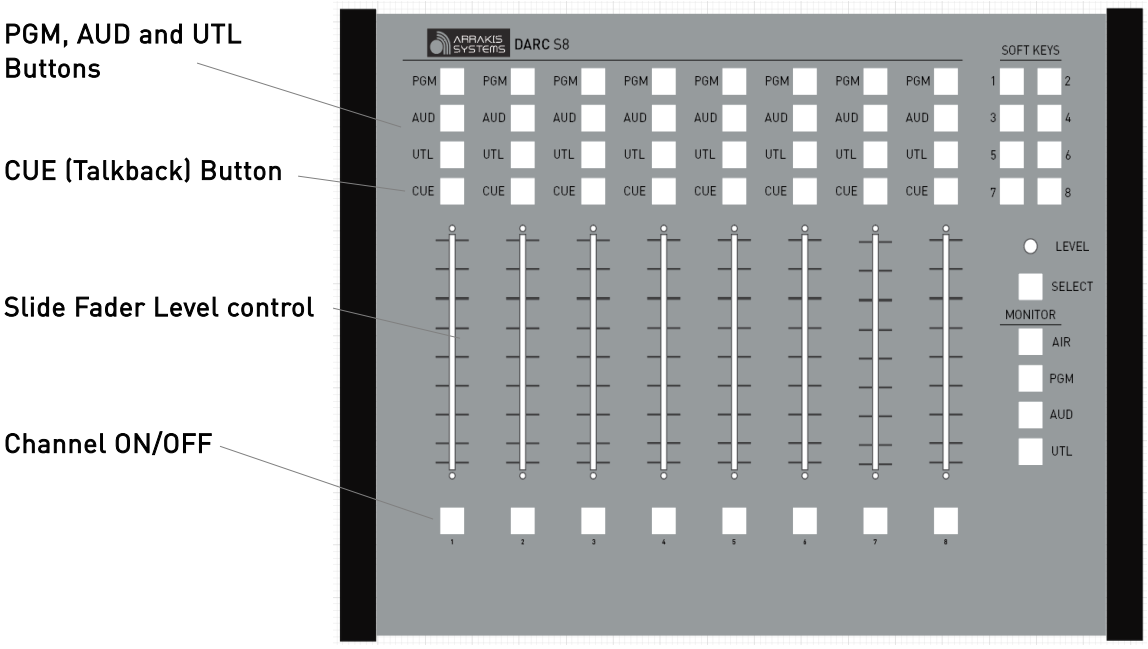
Mic channels are programmed to mute the Monitor speakers when activated. This prevents audio feedback through the mic channel.

Program, Audition and Utility Bus Assignment

The PGM & AUD buttons above the slide fader assign the channel to either (or both) of the main audio mixing buses. Push the button once to light the button and assign it to the bus. Push the lighted button again to unassign the channel from the bus. Program and Audition buses are software assigned to physical outputs on your Dante network.

Talkback (CUE button)

Talkback is a simple 2 way intercom system to communicate with another studio. An audio output on the Dante network can be software assigned to send mic audio to a networked studio. When the channel is selected as a Mic input, the CUE button on the channel will be assigned to this talk functionality.



Stereo Line Level Input Channels

Any channel can be assigned as a Line level input. These assignments are made in the DARC Virtual Console software. All line level audio inputs should be connected to the Simple IP unit to put it on the Dante network.

Channel On & Off

To turn the channel on, simply push the red on switch at the bottom of the fader. When the channel is on, the switch will be lighted. To turn the channel off, simply push the red on button again.

Program, Audition and Utility Bus Assignment

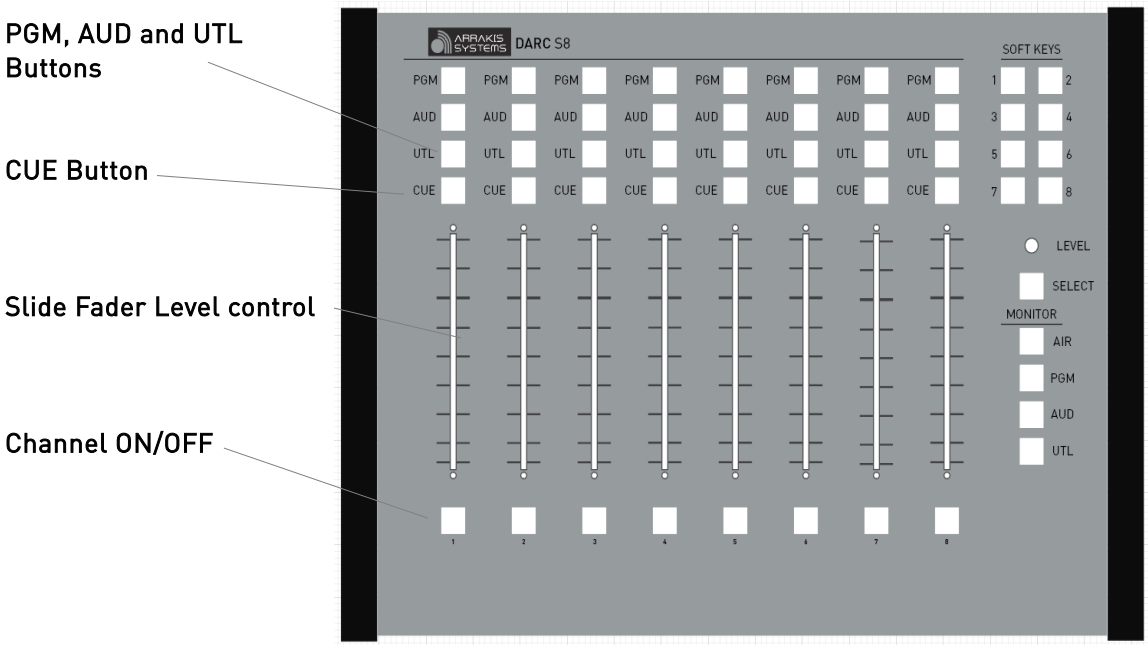
The PGM, AUD and UTL buttons above the slide fader assign the channel to either (or both) of the main audio mixing buses. Push the button once to light the button and assign it to the bus. Push the lighted button again to unassign the channel from the bus. Program and Audition buses are software assigned to physical outputs on your Dante network.

CUE

To activate cue, click on the CUE button above the fader. To exit the cue mode, click on the CUE button again.

Cue audio will be heard on the Simple IP Cue audio output, and in the Simple IP Headphones. Cue automatically switches the Headphones from the selected audio source to the cue audio bus whenever any channel is placed into cue.

Important note: The Cue output will be muted when a mic channel is turned on. This is used to prevent audio feedback.



Telephone
Input Channels

Any channel may be assigned as a Telephone (mix/minus) input. These assignments are made in the DARC Virtual Console software. The telephone hybrid should be physically connected to the Simple IP input & outputs.

Channel On & Off
To turn the channel on, simply push the red on switch at the bottom of the fader. When the channel is on, the switch will be lighted. To turn the channel off, simply push the red on button again.

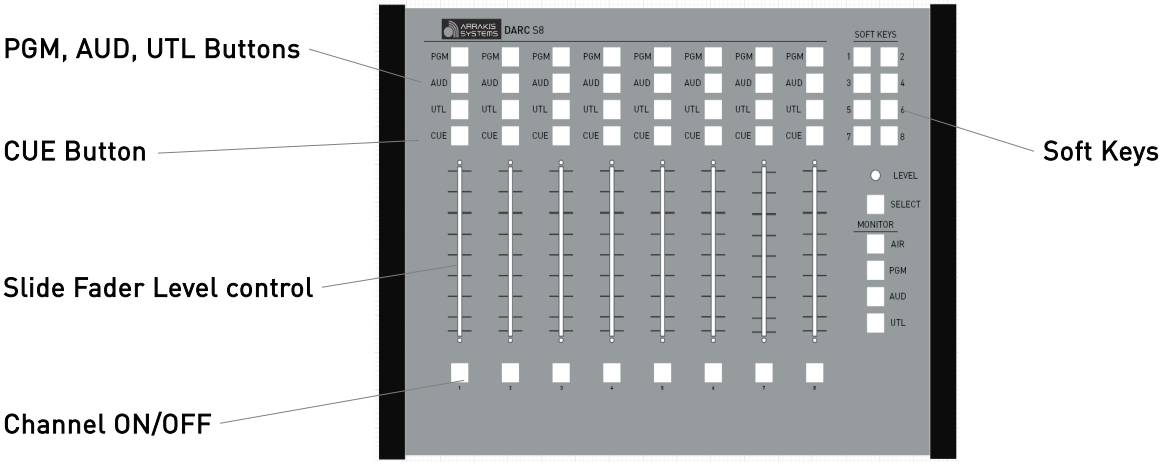
Channel On & Off Logic (Hybrid control)
The phone channel provides momentary, relay isolated logic to pick up the caller line (start) and to release the phone line (stop).

Program, Audition and Utility Bus Assignment
The PGM, AUD and UTL buttons above the slide fader assign the channel to either (or both) of the main audio mixing buses. Push the button once to light the button and assign it to the bus. Push the lighted button again to unassign the channel from the bus. Program and Audition buses are software assigned to physical outputs on your Dante network.

Hybrid Audio Feed
The output to the phone hybrid that the caller will hear is determined by the assigned phone channel's output bus assignments: PGM only, AUD only, or a mix of PM & AUD. The output to the phone hybrid will not include the phone callers voice which eliminates feedback. The physical output will be an output on the Dante network, such as a Simple IP 8A/D output.

Talking to the Caller (off line)
One of the Soft Keys may be designated as a 'Talk to Caller' button. When assigned, when the button is down, the program audio fed to the caller is muted and only the control room mic audio is heard. The button is momentary operation. Push down to talk, release the button to return the caller to the normal bus audio.

Listening to the Caller (off line)
To listen to the caller before airing (or during a talkback conversation), place the phone channel into cue by clicking on the CUE button.



Control Room
Monitor System

The Control Room Monitor system is the main audio monitoring system for the studio. It features an input selector switch and a volume level control. The output of the monitor system will be coming from a Simple IP unit, and it is connected to an external audio power amplifier and speakers. The level control on the external amplifier should be set for the maximum sound level desired in the studio.

Monitor Muting

When a control room microphone is turned on, the monitor system will mute (audio is turned off) so that there will not be feedback from the speakers to the microphone.

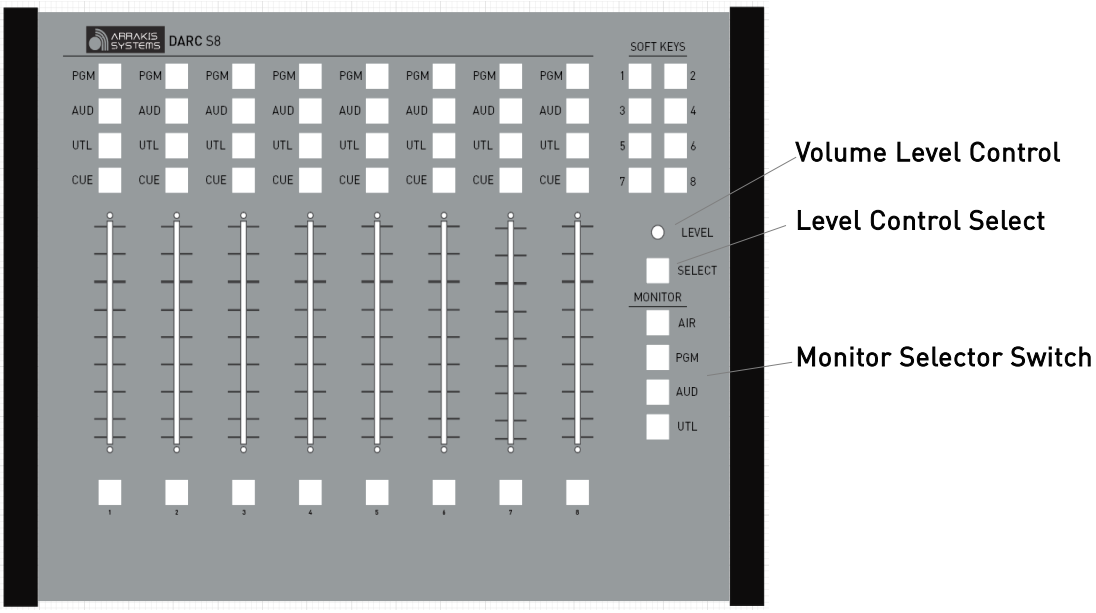
Monitor Selector Switch

This switch selects the audio source for the Monitor system.

1) AIR – This is usually an off air audio feed to monitor the actual transmitted signal. Setup for this is done in the DARC Virtual software, and instructions can be found in its manual.
2) PGM – The main Program output bus from the console.
3) AUD – A secondary Program bus that can be used for several purposes such as recording.
4) UTL – A third Program bus that can be used for several purposes such as recording.

Volume Level Control

Sets the monitor level for the Cue, Headphone and Monitor outputs. Press the SELECT button to toggle between which level you want to adjust for the DARC Virtual software.



The Cue System

The cue system is designed for monitoring an audio source without placing it on air. This feature is useful for listening to a network feed before bringing it to air. The Cue audio output will come from a Simple IP node.

Activating Cue

To activate cue, click on the CUE button on an input source channel. To exit the cue mode, click on the CUE button again. The cue signal is PRE-fader and therefore the fader level and the channel ON-OFF status has no effect on the cue signal.

Cue Audio

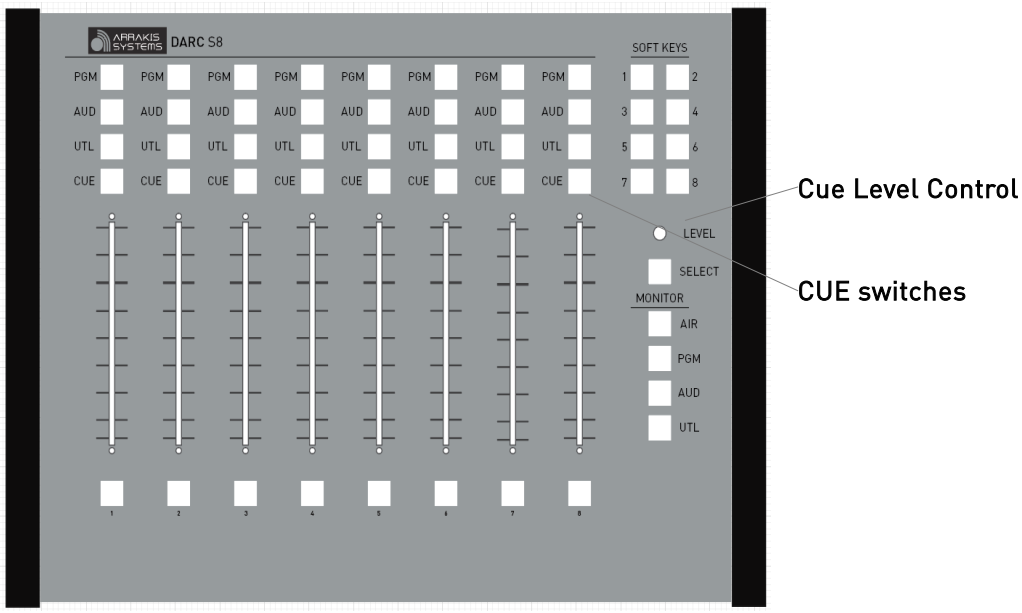
Cue audio will be played out the Cue output from the Simple IP node, and the Headphones. In the Headphone system, Autocue will mute the Program in the headphones and play the cue audio over top of program audio.

Volume Level Control

Sets the monitor level for the Cue, Headphone and Monitor outputs. Press the SELECT button to toggle between which level you want to adjust for the DARC Virtual software.

Muting

The cue speaker audio will be muted to stop feedback whenever Mic channels are turned on by their respective On/Off switches.



Soft Keys

The DARC Surface includes 8 programmable 'Soft Keys.' These keys can be assigned to perform various tasks. The functionality of these buttons are assigned within the DARC Virtual Console software.

FUNCTIONS:

Short Press

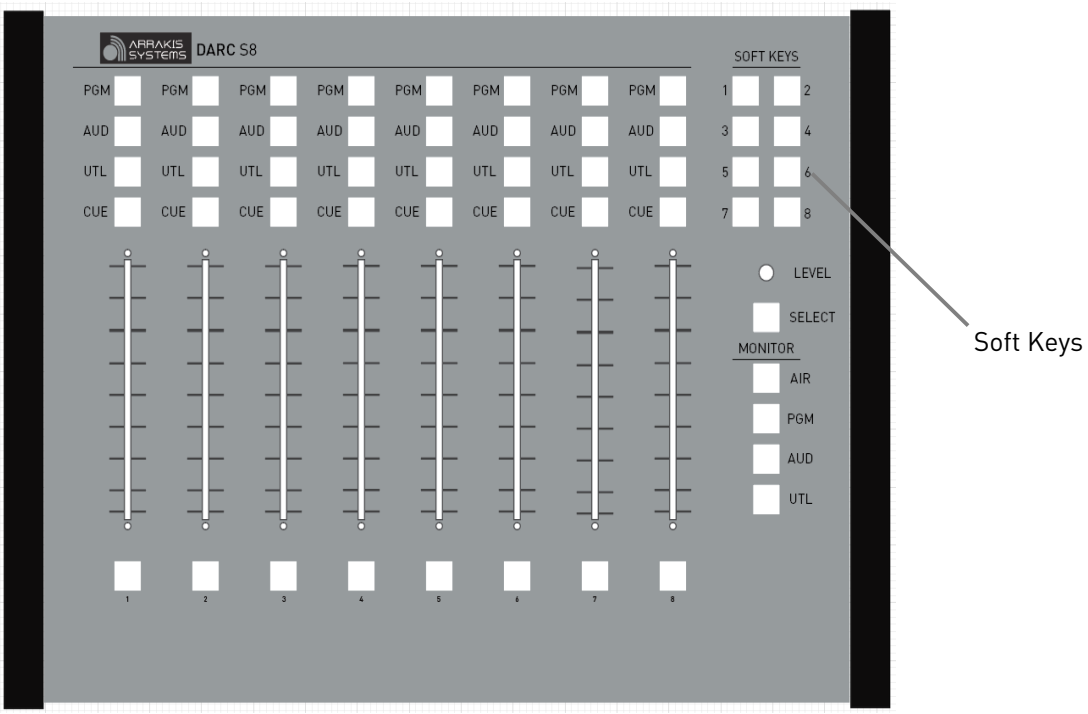
1 Turns the optional Keytronic 8 Channel Relay #8 on
2 Turns the optional Keytronic 8 Channel Relay #8 off
3 not assigned
4 not assigned
5 not assigned
6 not assigned
7 not assigned
8 not assigned

Long Press

1 Selects PGM on the Phone Hybrid bus select
2 Selects AUD on the Phone Hybrid bus select
3 not assigned
4 not assigned
5 not assigned
6 not assigned
7 not assigned
8 not assigned

Cycle User Profiles – A button may be assigned as a Cycle User Profile button. This would allow you to switch user presets for channel input assignments. These assignments will be displayed in the DARC Virtual software for each channel.

Send Closure – A soft key button may be assigned to send a high then low closure via a specific Logic output pin.



S8 and S15 Elite



The DARC S8 and S15 Elite consoles are the ultimate package for the DARC family.

DARC-S8 Elite

DARC S8 console | DARC Virtual 16 software | 1 Simple IP 16

- 8 Fader Channels.
- Interactive touch screen control and display.
- Mix engine.
- Simple IP 16 node.
- Program, Audition, Utility, and Cue buttons for each channel.
- DARC Virtual with 4-band parametric EQ, and optional turret control for control room, host & multi-guest studios.
- 8 programmable soft keys.
- Volume control & toggle Monitor, Headphone and Cue.

DARC-S15 Elite

32 Stereo Inputs & Outputs

DARC S15 console | DARC Virtual 16 software | 2 Simple IP 16

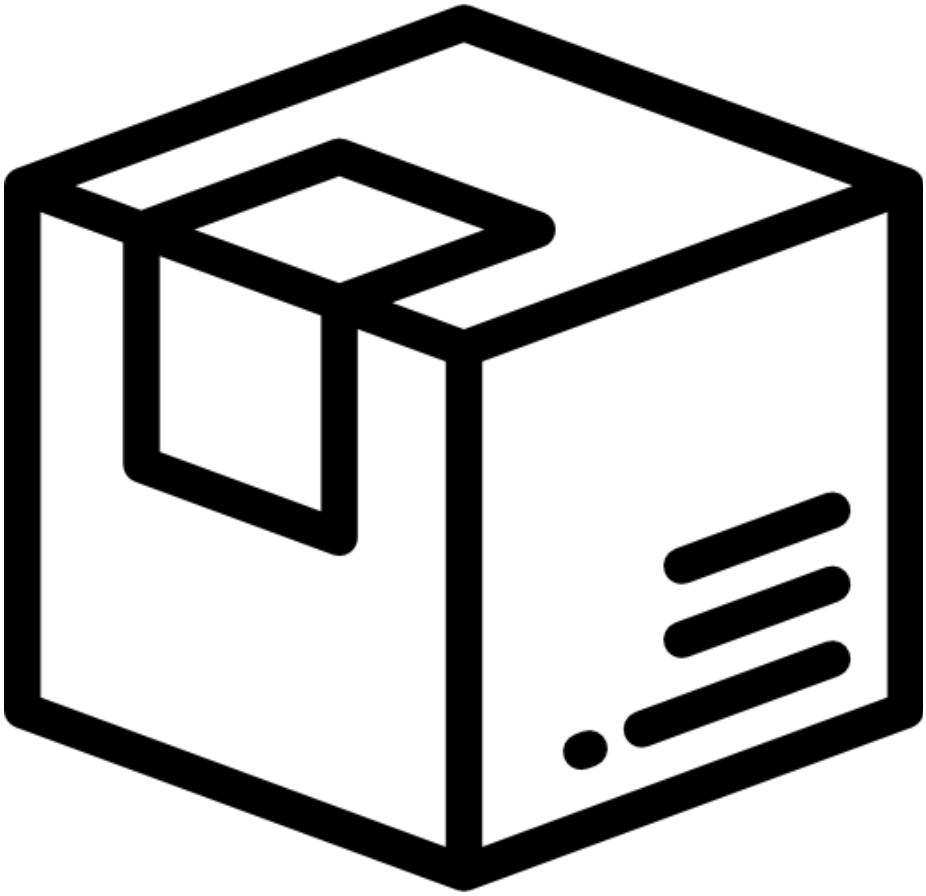
- 15 Fader Channels.
- Interactive touch screen control and display.
- Mix engine.
- Simple IP 16 node, quantity 2.
- Program, Audition, Utility, and Cue buttons for each channel.
- DARC Virtual with 4-band parametric EQ, and optional turret control for control room, host & multi-guest studios.
- 8 programmable soft keys.
- Volume control & toggle Monitor, Headphone and Cue.

Installation Instructions

Unpacking

A) Packing slips – Check the packing slips that come with the shipment, to be certain that all packages have been received.

B) Check for damage – Check all packages and equipment for damage immediately upon receipt. If damage is found, contact Arrakis Systems immediately to report the damage. Refer to the website for the latest contact information.



C) Carefully go through each box – Arrakis inspects every shipment for accuracy. You will receive all of the appropriate documentation, install kit, spare parts kit, and equipment. Be very careful to not throw away anything if you decide to throw out shipping materials.

D) Keep all packing materials – Arrakis consoles are shipped in custom shipping containers. Keep all containers at least until the installation is complete. This is in case some piece of equipment may need to be returned to the factory for service.

It is a good idea to keep the shipping materials for the life of the product. Arrakis is not responsible for shipping damage to products not shipped to the factory in the original packing materials.

Before you start

A) Physical space – It is important to install the console with sufficient space around it to operate and service the console easily.

B) Adequate ventilation – It is important to provide adequate ventilation to electronic equipment. High temperatures can reduce the life of the equipment.

C) 110V – 220VAC Operation – The console comes with a 110VAC – 220VAC autosensing external power supply as standard equipment.

D) Static – Static discharge to electronic devices can cause damage, reduce performance, or cause noise in the system. Proper choice of carpet is important consideration when building a studio. There are ways to reduce static in rooms, and should be researched and implemented prior to installation.

E) Console power supply – The console is powered by an external, regulated power supply. The supply simply plugs into the back of the console. There are no high voltages within the console.

F) AC Power considerations – If possible, plug all of the equipment in your studio into a single AC Power strip. If your Simple IP units are in a separate room, then this may not be possible. A good policy would be to have each room on the same AC outlet. A single power outlet will have a 1500-2000 watt capacity. That is plenty of power for most studios. Simply plug a multi-outlet AC power strip into the single wall outlet and then all of your equipment into the power strip. If possible, the power strip should be the kind that has internal surge protection, and battery backup.

G) 60 Cycle Hum & Audio interference (note for connecting Simple IP Node) – Most consumer audio equipment will have a 2 prong AC power plug. Some equipment has a 3 prong AC power plug. The third plug on a 3 prong plug is a "Safety Ground" which grounds the chassis to reduce shock hazard. The 3rd prong must never be removed even though it creates a 2nd ground path along with the audio cable shield ground. Two ground paths creates a Ground Loop antenna, which picks up 60 cycle AC hum. If possible, use only equipment that has 2 prong AC power plugs. This is often less expensive than making custom audio cable with audio transformer isolation.

If there are no other ground connected to the studio, a single piece of equipment with a 3 prong AC plug does not create a ground loop. However, if there is another ground, or a 2nd piece of equipment with a 3 prong AC power plug, then a ground loop is completed. If you can not change to two prong equipment, it may be necessary to use an audio isolation transformer on the audio cable to break the audio ground path. Contact a technician or factory on how to build a transformer isolated audio cable.

In some stubborn cases of hum (or RF interference), the best solution is to make the ground resistance between ALL of the equipment as low as possible. To do this, connect all of the equipment chassis' together with #12 stranded, insulated wire. Each piece of equipment is to have its own wire that returns in a star configuration to a single point in the studio. That single point should return by a single ground wire back to the main station ground. A 2"-4" copper ground strap to station ground is best.

IMPORTANT NOTE: Audio cables should be kept well away from AC power cables. A magnetic field is created by an electric current. The larger the current, the larger the magnetic field. AC ground and power wires have large currents and create significant AC magnetic fields. If an audio cable is physically close to an AC ground or power cable, then a 60 cycle AC noise voltage can be magnetically coupled into the audio signal cable.

H) Connecting multiple studios - When connecting multiple studios, long audio cables are sometimes necessary. These long cables can introduce AC hum into your audio. In these cases, it may be necessary to use distribution amplifiers with balanced inputs and outputs (or audio isolation transformers) to break the ground path and to cancel the AC hum.

I) Setup your studio, one piece at a time - When building a studio, it is important to be able to isolate problems that may be causing noise, hum, or even not passing audio. To do this properly, the studio should be assembled and tested one piece of equipment at a time. Each problem is detected and eliminated as it occurs. This manual provides a basic step by step process to assemble and test your studio.

Step by Step
Installation Instructions

IMPORTANT NOTE: The DARC S series console is a pure digital control board. Channel On/Off, volume control & Program/Audition/Utility assignments on the DARC S merely control the audio sources that are on the Dante network. If you are experiencing audio quality issues, you will want to investigate the source equipment, along with audio inputs & outputs on your Dante network.

IMPORTANT NOTE: Follow this step by step procedure. Each step has specific tests to determine if the console installation has been performed correctly to that point.

STEP 1 – Connect your audio equipment – This will be done with your Simple IP nodes, or other Dante enabled equipment.

STEP 2 – Install and setup your DARC Virtual software - Install the DARC Virtual on your Windows PC following the DARC Virtual instructions.

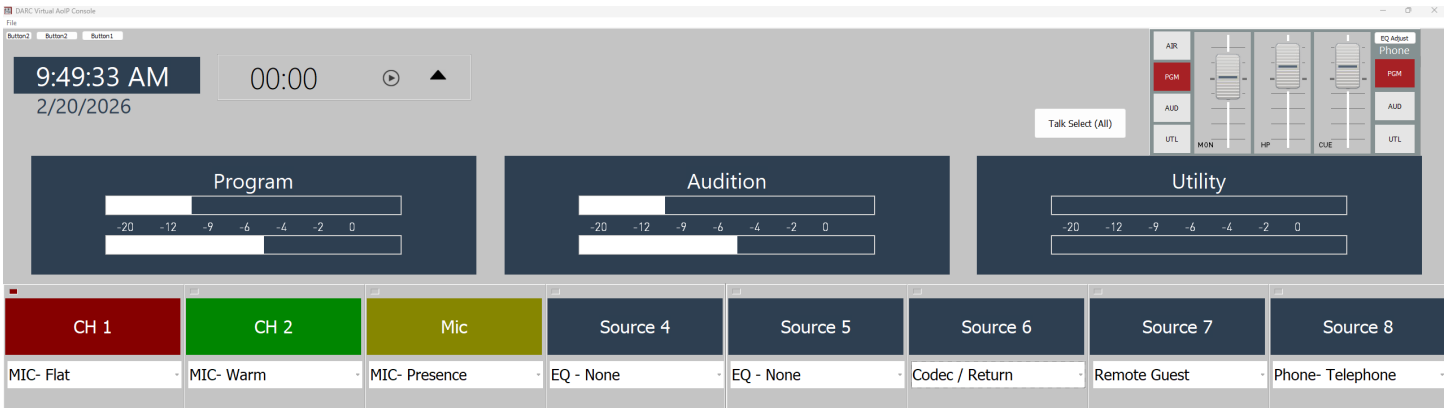
STEP 3 – Connect the USB. Connect the USB on the DARC S series console to the designated PC that will be running the DARC Virtual Console software. Power up your PC, and turn on the DARC Virtual Console software. The software should auto-connect to the DARC Surface.

Additional Steps for S8-Elite and S15-Elite

For convenience and ease of setup, the Elite packages for both the S8 and S15 come with a configured PC mix engine. These systems are plug-and-play and ready to go.

STEP 1 – Connect the USB-C cable from the monitor to the PC. The interactive touchscreen on the board must be connected to the provided PC using the included USB-C cable. The cable should run from the rear of the display to the rear USB-C connection on the PC. This single connection provides both display and touch capability. An HDMI cable is not required.

STEP 2 – It may be helpful to connect a second monitor to the configured PC. You can connect the HDMI output from the mix engine PC to a secondary monitor. This will give you easier access to Windows settings and additional setup screens within the Dante environment.



Aside from the board itself, the interactive display gives you additional control.

CHANNEL SELECT – On the touchscreen interactive display, click on the individual channel name to select a different source input.

EQ PRESET SELECT – Click on the channel's EQ preset to bring up a drop down list of EQ Presets available for the channel.

TALK TO CALLER – Click on the **Talk** to talk to the callers the phone mix minus channels.

UP / DOWN TIMER – Use the up / down timer. Press play to start the timer. The down arrow to switch to a count down timer. The gear icon to assign a new count down time.

USER PRESET / SOFT KEY VISUALS – Each preset and soft key is individually displayed for easy recognition and activation.

IMPORTANT NOTE – make sure that the PC power settings are not changed. Specifically the Display should never go to sleep.

Service & Maintenance

General Repair Considerations

WARNING

The console should be repaired by qualified, professional, & experienced, audio technicians ONLY. Before beginning any type of repair or opening the console CALL Arrakis customer support for recommendations.

DESIGNED FOR MODULAR PART REPLACEMENT

The ARC series console is designed for modular replacement rather than repair. The power supply is external and plug in. The rotary faders are plug in. All ICs are plug in. ICs can be individually replaced to test for functionality. A small amount of disassembly is required.

PC BOARD COMPONENT LEVEL REPAIR

If possible, PC board component level repair requiring soldering should be performed at the factory. In particular, replacement of slide faders and switches should be performed at the factory. If the repair must be made in the field, then extreme care must be taken to not damage the PC board or other components. Arrakis can not warranty non-factory service.

POWER SUPPLY

The power supply is a sealed module that must be replaced in whole if there is a problem. Using the incorrect power supply, not supplied by Arrakis, will void the warranty.

REPEATED EQUIPMENT FAILURES

If a specific part of the console is failing regularly, it is likely that it is being subject to unusual stresses. Examples are;
(1) Switch or fader failure- rough physical treatment.
(2) Mic channel IC failure- static discharge to mic.
(3) Input op amp failure- lightning, power surge, or other transient on this cable.
(4) Output op amp failure- lightning, power surge, or other transient on this cable.
(5) Power Supply failure- lightening, power surge, or other transient on the AC power line.

Resetting the Console

Since the console is digital, it may need to be reset on occasion. This would be done in the following steps:

STEP 1 – Shut down the DARC Virtual software & PC. Shut off the DARC Virtual software, and then shut down the PC running the DARC Virtual software.

STEP 2 – Reset the DARC S. You can do this by unplugging the power to the DARC S console from the power supply. Wait 10 seconds, and then plug back in.

STEP 3 – Turn your DARC Virtual PC on. Startup your DARC Virtual software. It should auto-connect to the DARC S.

Please contact our console support department if you have any problems connecting the DARC S to the DARC Virtual Console.

Opening the Console

WARNING

The console should be repaired by qualified, professional, & experienced, audio technicians ONLY. Before beginning any type of repair or opening the console CALL Arrakis customer support for recommendations.

ACCESSING THE MOTHERBOARD

The motherboard is accessed from the bottom of the console. Six screws must be removed from the bottom panel to have access to the console electronics for test and IC replacement. Be careful to not scratch the console when turning the console over.

REMOVING THE MOTHERBOARD

The motherboard is attached on the top of the front panel (slide fader screws) and with screws on the bottom of the motherboard, requiring access to the inside of the console. When replacing the motherboard, be certain to replace all of the screws so that switches and faders will operate properly.

Replacing Slide Faders, Switches, and other parts

Slide faders and switches are soldered onto the PC board and should be replaced at the factory if at all possible. The procedure requires proper tools, and it can be difficult to remove the parts without damaging traces or pads on the PC board. Also, the switches are very sensitive to temperature and duration during the soldering process and can be electronically damaged or destroyed when being soldered. If a slide fader, switch, or other part must be replaced in the field, then extreme care must be taken.

Tools required:
1) Hand held solder sucker (stranded solder wick is not suggested)
2) Temperature controlled soldering iron with pencil tip (soldering guns should not be used)

Procedure:
1) Suck the solder from all holes until the damaged component is entirely free from the PC board. Remove the damaged part.
2) Place the new part onto the PC board. Slide faders and switches (and some other parts) ARE oriented and MUST be replaced in the correct orientation.
3) Carefully solder the new part to the PC board.
    a) Clean the tip of the soldering iron on a wet sponge.
    b) Tin the tip of the soldering iron (cover the tip of the soldering iron with a small amount of solder).
    c) Set the soldering iron to 734 degrees Fahrenheit (390 degrees Celsius).
    d) Touch the tip of the 'soldering iron' to the junction of the PC board pad AND the component lead.
    e) Immediately touch the 'solder' to the junction of the soldering iron and the PC board pad.
    f) Flow only enough solder to fill the hole. Immediately remove the soldering iron from the part.
    g) Do not keep the soldering iron on the part for more than 2 seconds.
    h) Clean the solder rosin from the PC board if required. (See Note #1 below)

Note: Arrakis uses aqueous core (water soluble) solder that requires the solder joint to be cleaned by water after soldering. Aqueous core solder is acidic and must be cleaned so as to not damage the PC board over time. Rosin core solder is not water soluble and requires a flux remover if it is to be cleaned. The rosin residue however does not have to be removed for rosin core solder.

Warranty: Arrakis can only warranty service performed at the factory. All field service is performed at the customer's risk.

Replacing ICs

ICs must be replaced with care. All ICs in the console are socketed so that they can be replaced.

When replacing an IC, be careful to not bend legs under the IC or outside the socket. Be extremely careful to not shock an IC or the motherboard with a static discharge. In some cases, you must use a grounded arm or anklet if there is a possibility of a static discharge.

In all cases, retain the old IC because it may be found to not be damaged.

Replacing Processors

The DARC S has a processor built in. This is socketed and can be easily replaced. It is recommended to have these replaced at our factory. If it is required to replace a processor in the field, then it will be important to:
1) Match the pin assignments of the processor and the board.
2) Each processor has specific firmware and cannot be swapped with other processor. Contact our support department for guidance.

Warranty Replacement of Parts

To have a part replaced under warranty, you must:
1) Provide a valid product serial number that is within the warranty period

2) Contact the Arrakis customer service department and describe what parts need replacement and the circumstances of the failure. (The customer service department may require on site test by your technician to confirm the part replacement is appropriate for your problem.)

3) A Return Merchandise Authorization Number (RMA #) will be issued when a part s to be returned to the factory.

4) Return ALL defective parts to the factory (shipping prepaid) to the attention of the "Customer Service Department" with a letter including your name, address, call letters, serial number, date, and valid RMA #.

5) Parts replaced under warranty will be shipped at Arrakis expense by UPS ground. Any expense over and above UPS ground will be born by the customer.

IMPORTANT- If the defective parts are not returned to the factory within 30 days, you will be invoiced for them and it will be assumed that they do not fall under warranty. Further customer service will be denied until the defective parts are returned of paid for.

Purchased Parts

An Arrakis customer may purchase spare or replacement parts from the factory. The cost of the parts will include a service charge, the cost for the parts, and the cost of the shipping.

Details for purchasing parts may be found on our website.
IMPORTANT- Non payment or late payment for parts will result in refusal of further customer service until the problem is resolved.