



DARC1

ARC audio to stereo converter



User Manual

VER 1.2

Thank you for purchasing this device

The Simplified MFG DARC1 is designed to provide years of reliable service. At Simplified MFG, we want the experience with this device to be the best possible and are committed to helping achieve that experience.

Surge protection device recommended

This product contains sensitive electrical components that may be damaged by electrical spikes, surges, electric shock, lighting strikes, etc. Use of surge protection systems is highly recommended to protect and extend the life of your equipment. Set top boxes (STB) that are connected to the outside world can introduce surges through the system and cause components to fail. The HDSURGE is designed for this purpose.

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1. Introduction

The DARC1 is an ARC audio extractor that will extract ARC audio from a display and downmix the multichannel audio to stereo. The DARC1 one is a perfect device for getting a useable stereo audio signal from a display that does not have a stereo audio output. The display's remote will control the volume of the outputs via CEC.



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2. Features

- Converts HDMI ARC audio to stereo
- Outputs are RCA (L&R) and 3.5mm mini-jack
- Designed for distributed audio or headphone applications
- CEC function tells display that the DARC1 is an ARC enabled device
- CEC Function should allow the display's volume control to control the volume of the DARC1
- The DARC1 is powered via Micro USB (cable and supply included)

3. Package Contents

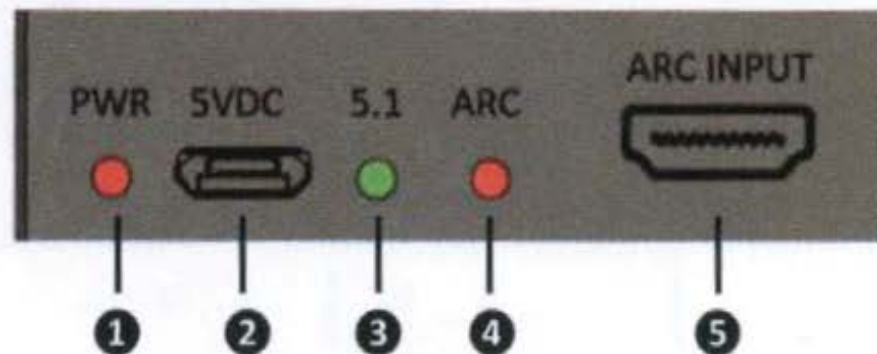
- 1× DARC1 HDMI ARC audio to stereo converter
- 1× USB Cable (USB-A to Micro USB)
- 1× 5V/1A Power supply
- 2× Metal mounting brackets with screws
- 1× User Manual

4. Specifications

| Technical | |
|-----------------------|---|
| HDMI Compliance | HDMI 1.3 and above |
| V _{max} | 2V _{rms} |
| Signal to Noise Ratio | > 90dB |
| THD+N Ratio | < 0.1% (V _{max}) 0.001%~0.01% (V _{best}) |
| Crosstalk | > 80dB |
| Frequency Response | 20Hz~20kHz±1dB |
| HDMI Audio Formats | PCM 2.0, Dolby 5.1, DTS 5.1 |
| L/R Audio Formats | Analog Stereo 2CH |
| ESD Protection | ±8kV (air-gap discharge) & ±4kV (contact discharge) |
| Connection | |
| Inputs | 1x HDMI Type A [19-pin female] 1x Micro USB |
| Outputs | 1x L/R Audio Out [RCA] 1x 3.5mm L/R |
| Mechanical | |
| Housing | Metal Enclosure |
| Color | Black |
| Dimensions | 70mm (2.76") [W] x 55mm (2.17") [D] x 20mm (.79") [H] |
| Weight | 150g/5.3 oz. |
| Power Supply | USB 5V/500mA |
| Power Consumption | 0.86W (Max) |
| Op. temp. | 32 - 104°F / 0 - 40°C |
| Storage temperature | -4 - 140°F / -20 - 60°C |
| Relative Humidity | 20 - 90% RH (no condensation) |

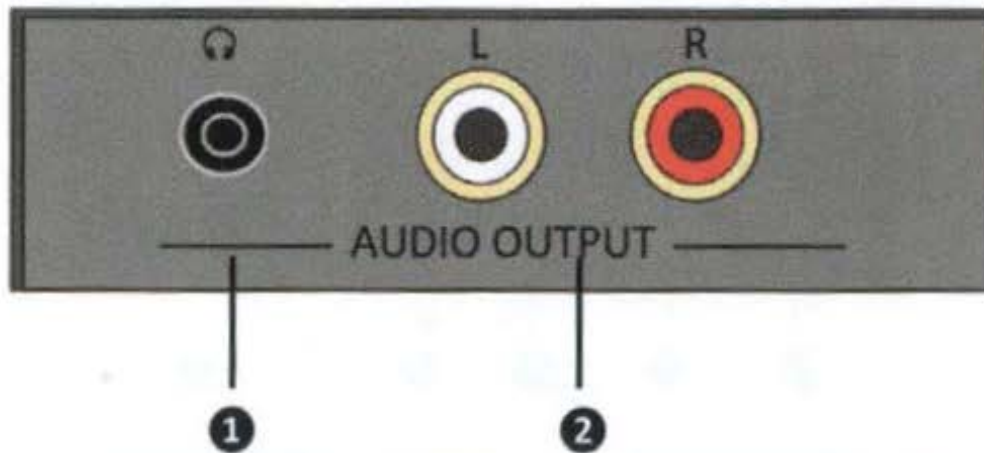
5. Operation Controls and Functions

5.1 Input Panel



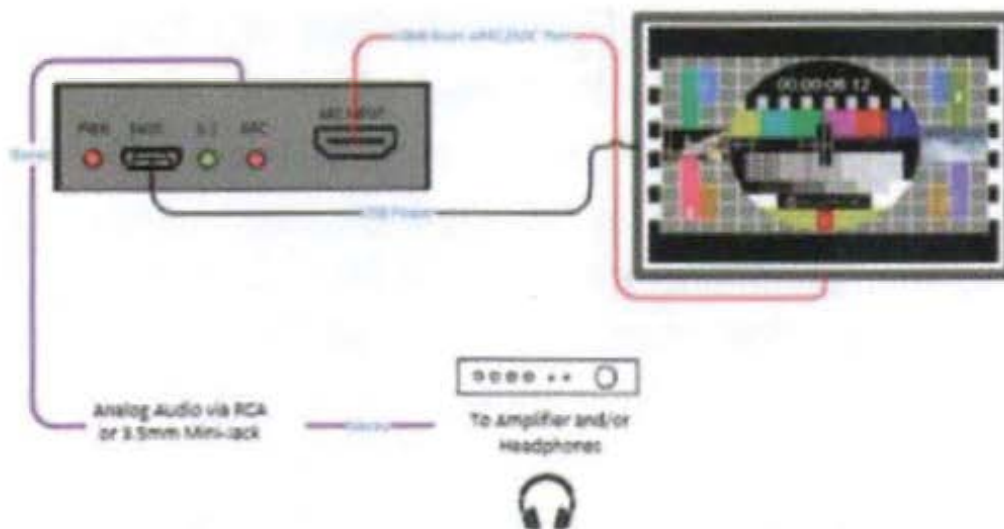
| No. | Name | Function Description |
|-----|--------------------|--|
| 1 | Power LED | Indicates the DARC1 has power and is on |
| 2 | DC 5V | DC 5V power supply input port |
| 3 | Audio Decoding LED | Red indicator: Decoding PCM or No signal Red blinking: Decoding Dolby Green blinking: Decoding DTS |
| 4 | ARC LED | On: ARC input has active signal Off: No signal |
| 5 | ARC IN | HDMI video input port. Connect to TV with ARC function. |

5.2 Output Panel



| No. | Name | Function Description |
|-----|---------------------|--|
| 1 | Headphone | 3.5mm mini-jack [stereo] |
| 2 | RCA AUDIO OUT | RCA [L/R] connection to audio amplifier |

6. Application Example



7. Trouble Shooting

| Symptom | Possible Cause/check |
|-------------------|--|
| No power | USB Power is most likely not enabled in the display's settings if you are using this power source |
| No audio | Enable ARC audio in display's menu settings. The display should recognize the DARC1 as an ARC audio device |
| No volume control | Make sure that the volume settings are set to variable and that CEC is enabled |

8. Warranty

Should you feel that this product does not function adequately due to defects in materials or workmanship, we (referred to as "the warrantor") will, for the length of the period indicated below (starting from the original date of the purchase) either a) repair the product with new or refurbished parts. Or b) Replace the product with new or refurbished product. All Simplified MFG products are covered by a 3-year warranty. During this period there will be no charge for unit repair, replacement of unit components or replacement of the product if deemed necessary. The decision to repair or replace is made by the warrantor. The purchaser must mail in the product during the warranty period. This limited warranty only covers the product purchased as new and is extended to the original purchaser only. It is non-transferable to subsequent owners, even during the warranty period. A purchase receipt or other proof of purchase date is required for the limited warranty service.

9. Contact

Sales and Tech Support

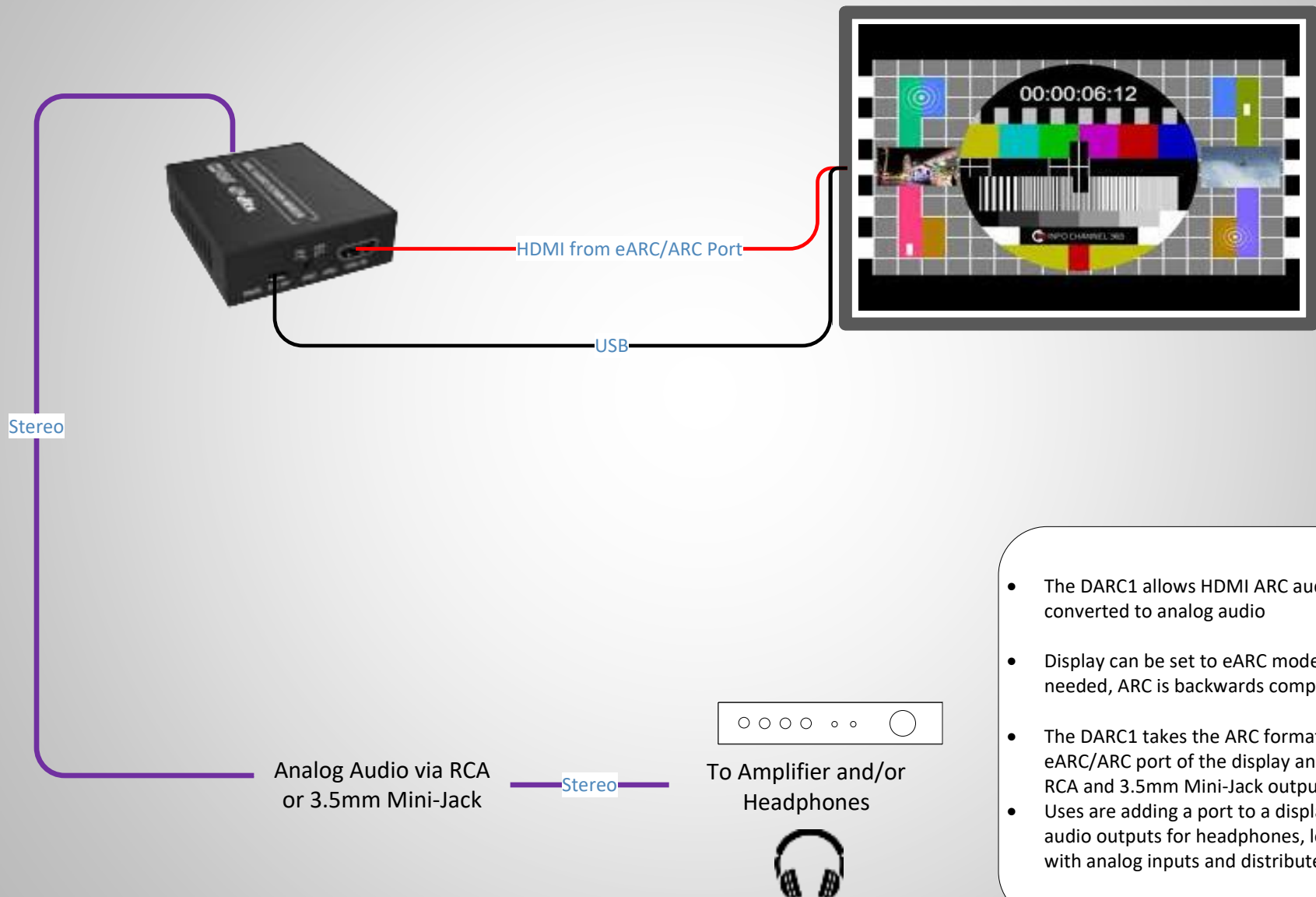
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DARC1 Quick Start Guide



- The DARC1 allows HDMI ARC audio to be converted to analog audio
- Display can be set to eARC mode to disable CEC if needed, ARC is backwards compatible
- The DARC1 takes the ARC format audio from the eARC/ARC port of the display and converts it to RCA and 3.5mm Mini-Jack outputs
- Uses are adding a port to a display with no analog audio outputs for headphones, legacy sound bars with analog inputs and distributed audio

DARC1

HDMI ARC Audio to Stereo Converter



The DARC1 is a HDMI ARC audio extractor that will convert Dolby formats 5.1 and under to stereo. Features include RCA stereo and 3.5mm Mini-Jack breakouts. In eARC mode, the display will adapt to ARC and this device will operate even if display is in eARC mode. Compact size and powers via USB cable (can power from display).

Features:

- Converts HDMI ARC signals to Stereo
- Outputs are RCA or 3.5mm Mini-Jack
- Compact size
- Powers via USB cable and can be powered by the display
- 3-Year Warranty

Specifications:

| Technical | |
|---------------------------------|--|
| ARC Compliance | ARC/eARC |
| Audio Formats | Converts ARC to stereo via RCA and 3.5mm Mini-Jack |
| Audio Bitrate | Up to 192kHz. |
| Sampling Rates supported | 32kHz., 44.1kHz., 48kHz., 88.2kHz., 96kHz., 176.4kHz., & 192kHz. |
| HDMI ARC Audio Formats | LPCM 2/5.1, Dolby Digital 5.1, DTS 5.1 |
| L/R Audio Formats | Analog Stereo 2-Channel |
| ESD Protection | Human body model — ±8kV (air-gap discharge) & ±4kV (contact discharge) |
| Connections | |
| Input | 1x HDMI Type A [19-pin female] |
| Outputs | 1 x Pair of RCA connectors [L/R] 1 x 3.5mm Mini-Jack |
| Mechanical | |
| Housing | Metal Enclosure |
| Dimensions [RX] | 70mm [W] x 60mm [D] x 20mm [H] 2.756"x2.36"x0.8" |
| Weight [RX] | 135g 4.8 Oz. |
| Power Supply | Input: AC100 - 240V 50/60Hz Output: DC 5V/1A (US/EU standards, CE/FCC/UL certified) |
| Power Consumption | 1.25W (Max) |
| Operation Temperature | 32 - 104°F / 0 - 40°C |
| Storage Temperature | -4 - 140°F / -20 - 60°C |
| Relative Humidity | 20 - 90% RH (no condensation) |



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Re: LG discovery of DARC1

TV Model C4AUA OLED **Note, this type of discovery may need to be done on other makes and models.

The DARC1 must be discovered by this display. This is accomplished by going into the settings by hitting the gear icon on the remote control.



When the menu pops up, click "Sound Out".



Next click advanced settings.



Next scroll down from sound in the upper left menu and click on "General"



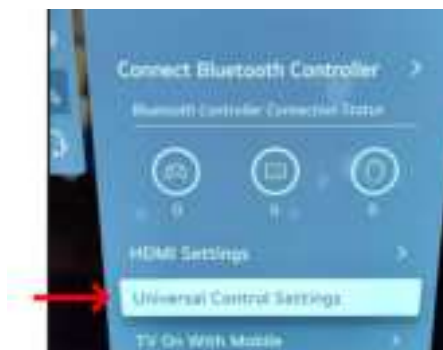
Next scroll down to "External Devices"



Click HDMI Settings make sure SIMPLINK (HDMI-CEC) is enabled



Click back and then scroll to "universal Control Settings" and click it



You may see something populated in the first choice which is HDMI 2(ARC) Click it and then click the "Manage Settings" button at the bottom of the page. You will get a pop up on the right side of the screen. Click "Delete Settings", click "Yes" to confirm.



The HDMI 2 icon will now have nothing associated with it. Click it and then “Manage Settings” again. You will be presented with another pop up on the right of the screen, chose the “Start Setting” button



You will get a whole screen menu page that gives you options of what to associate with HDMI Input 2. Scroll to the right and select “Sound Bar”. Then click “Next” button at bottom of page.



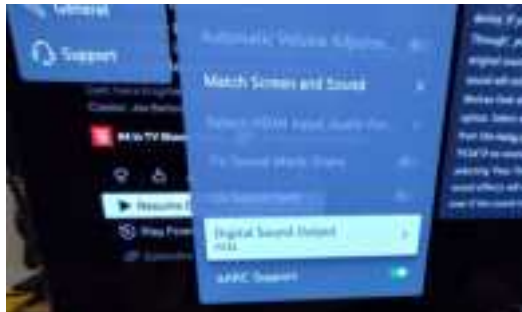
You will then be presented with some brands to choose from, do not click the “Search” button, but instead scroll down until you see “Sonos” Select it, then hit the “Next” button at the bottom of the page



You will get another menu page and at the bottom you will see a button marked "Start Test", click it. You will then get a confirmation that a Sonos Sound Bar is now associated with HDMI Input 2. Click the "Done" button.



Now Exit out and start again, this time you hit the gear button, then sound out, then scroll down to "Digital Sound Output" and eARC support. Enable eARC support and then click on the "Digital Sound Output" selection and then select PCM. Exit out, you are ready to go!



Hope this helps, if you have any feedback on this white paper, please let us know by emailing info@simplifiedmfg.com