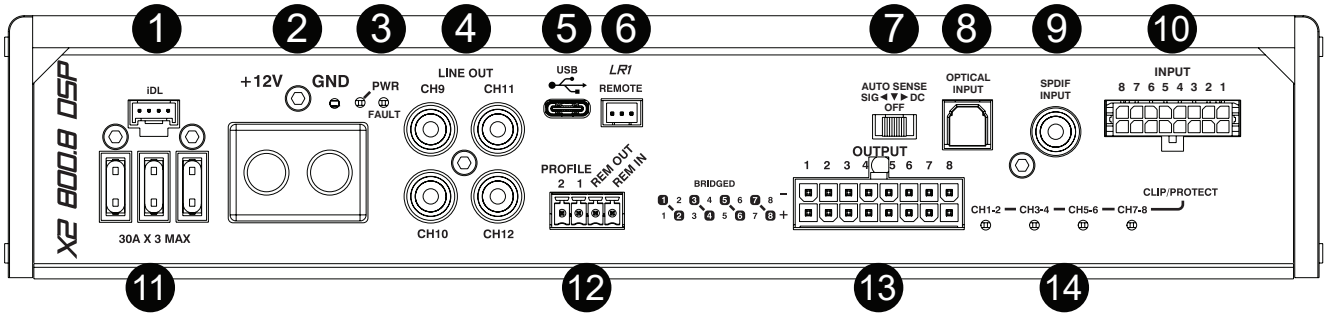
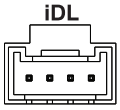
X2800.8 DSP CONNECTION GUIDE



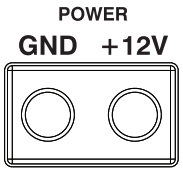
1 ***IDL/MAESTRO CONNECTION PORT-***



The IDL connection port is designed for direct integration with the iDatalink® Maestro AR module (sold separately), enabling seamless plug-and-play connectivity with a wide range of OEM vehicle platforms. This high-speed digital interface streamlines installation by preserving factory controls and reducing wiring complexity—delivering a clean, reliable connection with advanced data communication between the vehicle and the DSP amplifier.

For current vehicle compatibility, visit: http://maestro.idatalink.com/product/product/product_id/412

2 ***MAIN POWER CONNECTION TERMINAL-***



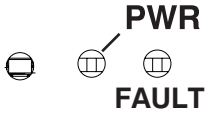
The main power terminals provide the critical electrical connection to your vehicle's charging system. For optimal performance and safety, follow these guidelines:

+12V (Battery Power): Connect this terminal directly to the positive terminal of your vehicle's battery using a high-quality 4 AWG OFC (oxygen-free copper) power cable. To protect your system, always install a properly rated fuse within 18 inches of the battery connection.

GND (Ground): Connect this terminal to a clean, paint-free metal point on the vehicle chassis using a 4 AWG OFC ground cable. The ground point should be as close to the amplifier as possible. Use a #10 or larger screw to secure the terminal. Do not use seat bolts, seat belt mounts, or other hardware with mechanical isolation, as they do not provide a reliable electrical ground.

By following these recommendations, you'll ensure maximum current delivery, system protection, and the low-noise performance ARC Audio amplifiers are known for.

3 ***POWER / STATUS INDICATOR***



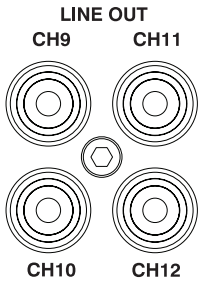
The X2800.8 DSP amplifier features ARC Audio's advanced microprocessor-based protection and diagnostics system. The onboard power/status indicator LEDs provide quick visual confirmation of the unit's operating state:

PWR Indicator: When illuminated, this light confirms that the amplifier is powered on and functioning under normal operating conditions.

Support Indicator (Left LED): This secondary light remains off during standard use. It is reserved for internal diagnostics and may be referenced by ARC Audio technical support staff during troubleshooting or service inquiries.

This intelligent system ensures reliable performance while giving professionals and users easy-to-read system status at a glance.

4 ***RCA SIGNAL LINE CH 9/10/11/12 OUTPUT-***

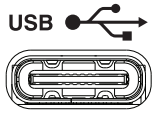


These RCA outputs (Channels 9–12) are designed for connecting external amplifiers, such as those used for high-power subwoofer or multi-channel expansion systems. When adding additional amplification to your system, these outputs provide a clean, low-distortion signal path directly from the X2800.8.

Channel 9–12 outputs are fully assignable and controllable within ARC Audio's Pro-Series DNA DSP software, giving you complete command over routing, crossover points, equalization, signal delay, phase correction, and more. This ensures that your external amplifier receives the same advanced processing as the onboard channels—maintaining sound quality, consistency, and tunability across your entire system.

5 ***USB CONNECTION PORT-***

Use this port to connect your Windows® 10 (or newer) PC directly to the amplifier for full access to the DSP's tuning capabilities via the ARC Audio DNA DSP Software Utility. This direct USB connection ensures fast, stable communication between your computer and the DSP, allowing precise configuration of crossover points, equalization, delay, phase, channel routing, and more.



With ARC Audio's intuitive DNA software, you'll unlock the full potential of your DSP-equipped product with professional-grade tuning control at your fingertips.

6 ***LR1 REMOTE LEVEL CONNECTION PORT-***

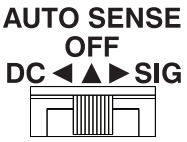
This port is dedicated to the ARC Audio LR1 programmable remote level control (sold separately). When connected, the LR1 functions as a stand-alone control knob, allowing you to assign and control a wide range of DSP parameters—including subwoofer level, master volume, fader, or specific channel groups—directly from the driver's seat.

Configuration of LR1 functionality is handled through the ARC Audio DNA DSP Software Utility, giving you full flexibility to tailor its behavior to your system's needs. The LR1 can be used on its own or in combination with the ARC Audio PSC controller for multi-function control in advanced setups.

7 ***AUTO SENSE SELECTION SWITCH-***

The X2800.8 features a selectable, microprocessor-controlled Auto Sense turn-on circuit—ideal for installations where a dedicated switched remote turn-on lead is not available from the source unit.

All Pro-Series DSP amplifiers offer two Auto Sense options:



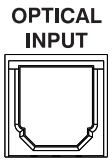
BTL (Bridge Tied Load Detect) / (or DC): An advanced detection circuit designed by Robert Zeff, BTLD offers superior reliability over traditional signal-based sensing. Rather than relying on audio output to trigger turn-on, BTLD intelligently detects the presence of the output IC (integrated circuit) used in most OEM head units and factory amplifiers—resulting in faster, more accurate activation.

SIG (Signal Sense): This conventional method activates the amplifier when it detects a standard audio signal from the source unit. While widely compatible, it may not be as precise in vehicles with complex OEM systems.

Due to the wide variety of OEM audio architectures, no single auto-sense method is 100% reliable in every scenario. If you encounter inconsistent turn-on behavior, we strongly recommend using a hardwired remote turn-on lead whenever possible. It's a simple step that can save hours of troubleshooting and get you back to enjoying your system sooner.

8 ***OPTICAL TOSLINK SIGNAL CONNECTOR-***

All Pro-Series DSP products feature a single S/PDIF optical (TOSLINK) input for high-resolution digital audio input. This connection delivers a clean, interference-free signal path directly to the processor—eliminating noise and degradation commonly associated with analog signal chains.

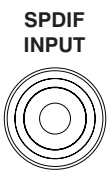


While the Pro-Series DSP platform is capable of processing digital audio streams up to 192kHz at 32-bit resolution, please note that optical connections are inherently limited to a maximum of 96kHz due to TOSLINK format specifications. For full 192kHz performance, use the coaxial digital input instead.

Whether you're connecting a high-end digital transport, DAP, or streaming interface, the optical input offers audiophile-grade performance with broad source compatibility and exceptional signal integrity.

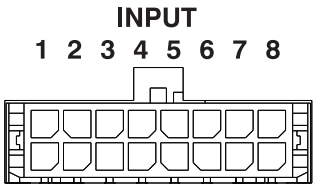
9 ***SPDIF DIGITAL COAXIAL CONNECTION -***

This input enables the integration of auxiliary audio devices using a coaxial digital (S/PDIF) connection, providing a direct, high-fidelity signal path to the processor. Unlike analog connections, this digital input maintains pristine signal quality with support for audio streams up to 192kHz at 32-bit resolution—ideal for high-resolution sources and audiophile-grade playback.



Note: The coaxial and optical digital inputs share a common signal path and cannot be used simultaneously. Users can select their preferred digital input type within the Input Mixer panel of the ARC Audio DNA DSP Software. This flexible routing system allows fast switching between digital sources, tailored to your specific system configuration and listening preferences.

10 ***SIGNAL INPUT CONNECTOR-***



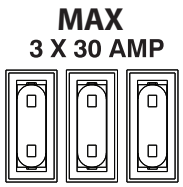
The signal input connector is a balanced, differential-style input designed to accept either low-level RCA signals or high-level speaker-level signals directly from your vehicle's source unit. This flexible input architecture allows seamless integration with both aftermarket and OEM audio systems—without the need for additional converters or adapters.

For RCA-based connections, simply plug your source unit's output cables into the corresponding input channels of the amplifier. The balanced input design helps reject noise and interference, delivering a clean, stable signal for optimal DSP performance and sound quality.

Whether you're working with a factory head unit or an aftermarket deck, this versatile input system ensures compatibility, easy setup, and professional-grade results. For Example-

RCA Inputs Example		*Speaker Level Example (Signal Summing)*	
Front Left RCA-	CH 1	Left HighFrequency-	CH 1 in
Front Right RCA-	CH 2	Right High Frequency-	CH 2 in
Rear Left RCA-	CH 3	Left Mid Frequency-	CH 3 in
Rear Right RCA-	CH 4	Right Mid Frequency-	CH 4 in
SUB 1 RCA-	CH 5	Left Low Frequency-	CH 5 in
SUB 2 RCA -	CH 6	Right Low Frequency-	Ch 6 in

11 ***FUSES-***

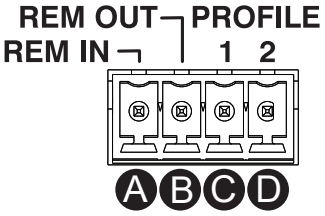


The X2800.8 DSP amplifier is equipped with three (3) Mini ATC-style blade fuses, which are pre-installed and included with the unit. These fuses are a critical part of the amplifier's protection circuit, safeguarding both the product and your vehicle's electrical system from overload or short-circuit conditions.

In the event that a fuse becomes damaged or blows, do not replace it with a different type or value. Always use identical replacement fuses to maintain safe operation and preserve the factory-designed protection characteristics of your amplifier.

12 ***REMOTE LEAD/PROFILE SWITCH PLUG***

This multi-function connection block supports remote turn-on signaling and preset profile switching for flexible control and seamless system integration.



A ***REM IN –*** Connect the remote turn-on lead from your source unit (typically labeled "Remote Out") to this terminal. This input tells the Falcon when to power on or off. Turn-on and turn-off timing is fully adjustable in the ARC Audio DNA DSP Software to match OEM or aftermarket system behavior.

B ***REM OUT –*** If you're using an external amplifier (such as one connected to Line Out CH9–CH12 for subwoofer duties), connect its Remote Turn-On input to this terminal. The REM OUT signal follows REM IN behavior, with independent timing control available via the DNA software—ideal for staged turn-on/off to prevent system pops or voltage sag.

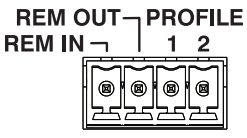
C ***PROFILE 1-*** Connect a toggle switch with a latched ground signal (or positive trigger if configured in software) to this terminal to activate DSP preset switching. PROFILE 1 works independently or in combination with PROFILE 2 to access the X2800.8 four user-defined tuning profiles without a PC or external controller.

Trigger polarity can be either negative or positive. By default, the X2800.8 accepts negative (ground) triggers. To change to positive, update the setting in the DNA DSP Software. This function is compatible as a standalone control or alongside the LR1.

D ***PROFILE 2-*** Used in the same manner as PROFILE 1, this terminal supports toggle-switch-based DSP preset control. When PROFILE 1 and PROFILE 2 are used together with a dual-switch configuration, users can cycle through all four available DSP presets manually—no PC or controller required.

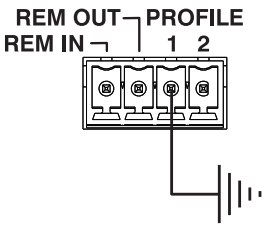
Like PROFILE 1, this input accepts both positive and negative triggers, with default behavior set to negative. Trigger polarity can be customized in the DNA DSP Software. Works alone or in combination with the LR1 controller for expanded system flexibility.

PRESET 1

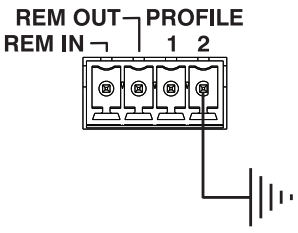


NO CONNECTION

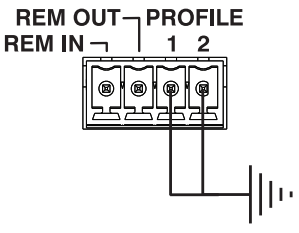
PRESET 2



PRESET 3



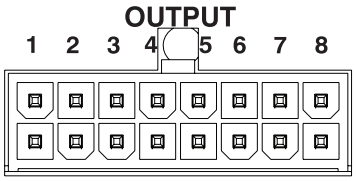
PRESET 4



13 ***SPEAKER OUTPUT CONNECTOR-***

The X2800.8 includes a pre-wired speaker output harness (dongle) for convenient connection to your speaker system. For best results and long-term reliability, we strongly recommend using secure, electrically sound connection methods such as solder with heat shrink tubing. Avoid using temporary or low-quality connectors, as they can introduce resistance or fail over time.

Be sure to verify channel-to-wire orientation, plug position, and speaker polarity when making connections. Accurate wiring ensures correct channel assignment and optimal performance for your system.



NOTE: Output channel assignment is fully user-defined in the Mixer section of the ARC Audio DNA DSP Software Utility. Input signals can be routed to any output channel based on your system layout and tuning goals.

Bridging Output Channels

Each output pair on the X2800.8 DSP amplifier can be bridged to create a single higher-power channel—ideal for driving subwoofers or high-demand speakers.

To configure the X2800.8 as a 4-channel bridged amplifier, wire the speaker leads as shown below, and be sure to enable "Bridged" mode for each applicable pair in the DNA DSP Software > Settings panel.

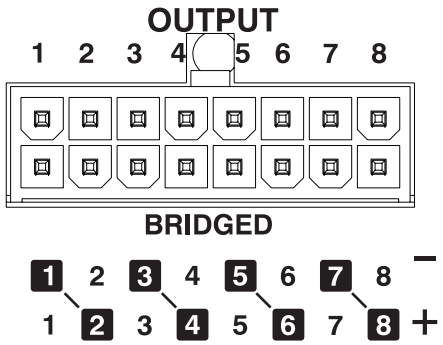
Bridged Output Configuration:

CH1–2 (Bridged): Connect speaker negative to CH1–, positive to CH2+

CH3–4 (Bridged): Connect speaker negative to CH3–, positive to CH4+

CH5–6 (Bridged): Connect speaker negative to CH5–, positive to CH6+

CH7–8 (Bridged): Connect speaker negative to CH7–, positive to CH8+



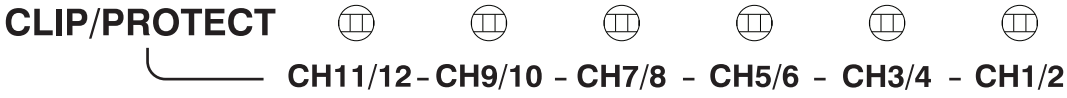
Bridging increases output power per channel pair while maintaining ARC Audio's signature clarity and control—perfect for high-output or minimalist systems where fewer, more powerful channels are needed.

14 ***OUTPUT CLIP/PROTECT CHANNEL INDICATORS***

Each output channel pair on the X2800.8 is safeguarded by analog protection circuitry, with dedicated indicators to show the real-time status of signal integrity and thermal safety. These LEDs help users visually monitor performance and detect potential clipping or protection states.

The indicators operate in three distinct states:

Off: Channel is operating under optimal conditions with no signal clipping detected.



Green: Channel signal is approaching the clipping threshold. This is simply a warning and not inherently problematic, but may indicate that system levels are nearing the amplifier's output limits.

Solid Red: The channel has entered protection mode due to signal clipping. Output is temporarily muted to protect the amplifier and connected speakers.

Note: If the X2800.8 is operating with the "Auto Power-Down Amplifier" function enabled, all Clip/Protect indicators will illuminate solid red when the amplifier section is powered down. This is normal. The indicators will turn off and return to their standard behavior once the amplifier is reactivated.

These intuitive visual cues help you tune and monitor your system with confidence—ensuring reliable performance and protection under all operating conditions.