



## Axxess 6-Channel Digital Signal Processor with Water Resistant Enclosure

### INTERFACE COMPONENTS

- AXDSP-L circuit board
- AXDSPL-WR harness (16-pin & 20-pin, with gaskets)
- AXDSPL-WR enclosure
  - Case
  - Cap (with 0-ring)

### INTERFACE FEATURES

- 15 Band graphic EQ
- 4 inputs and 6 individually assignable outputs
- Independent equalization for front, rear, and sub
- Independent crossover for front, rear, and sub
- Selectable slope (12, 24, 36, or 48db per octave)
- Front and rear channels can be delayed independently up to 10ms
- Easy behind the radio installation in most applications
- Water resistant enclosure with zip tie mounts included
- Can be used with OE and aftermarket radios
- Chime control for GM/Chrysler vehicles
- Clipping detection and limiting circuits

- Internal header port for adding a Bluetooth interface module
- Bass knob included
- Retains OE voice prompts (SYNC® and OnStar®)
- Retains factory chimes including parking sensor and cross path detection alerts
- Settings adjusted via Bluetooth® in a smart device application (tablet or mobile phone), compatible with both Android and Apple devices
- Read, write, and store configurations for future recall
- Password protect feature available in the mobile app
- Micro-B USB updatable

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### TOOLS & INSTALLATION ACCESSORIES REQUIRED

- Crimping tool and connectors, or solder gun, solder, and heat shrink
- Tape
- Wire cutter
- Zip ties
- Multimeter

### Google Play Store



### Apple App Store

iOS 12.1 or higher



## PREFACE

The AXDSPL-WR interface can be used with either an aftermarket or factory system. The interface can grow as your stereo system grows. Start off by adding a subwoofer, then add on from there. Simply reference the Installation Options page to change the interface to the new system. All 6 channels of the interface can be assigned however needed for the installation at hand. If 6 channels of a subwoofer signal is needed, the interface can do it. In the following section, Installation Options, choose the installation type, then either click on the hyperlink, or reference that page number.

The interface provides a 12-volt 1-amp output to turn on aftermarket amp(s). If installing multiple amps, an SPDT automotive relay will be required if the amp turn-on current of all amps combined exceeds 1-amp. Use Metra part number **E-123** (sold separately) for best results.

If using the interface to install just a sub amp, the factory amp can be retained for mids/highs. If installing the interface in models with a factory amp, and bypassing the amp, the amp must be unplugged.

In most cases the CAN Bus wires need to be connected in order for the interface to communicate with the vehicle to turn on and provide an amp turn-on output.

Inside the interface is a 16-pin header port for adding an optional Bluetooth module, part number **AXDSPL-BT** (sold separately). [Page 7](#) will show the installation and use of this module.

## INSTALLATION OPTIONS

### Aftermarket radio system:

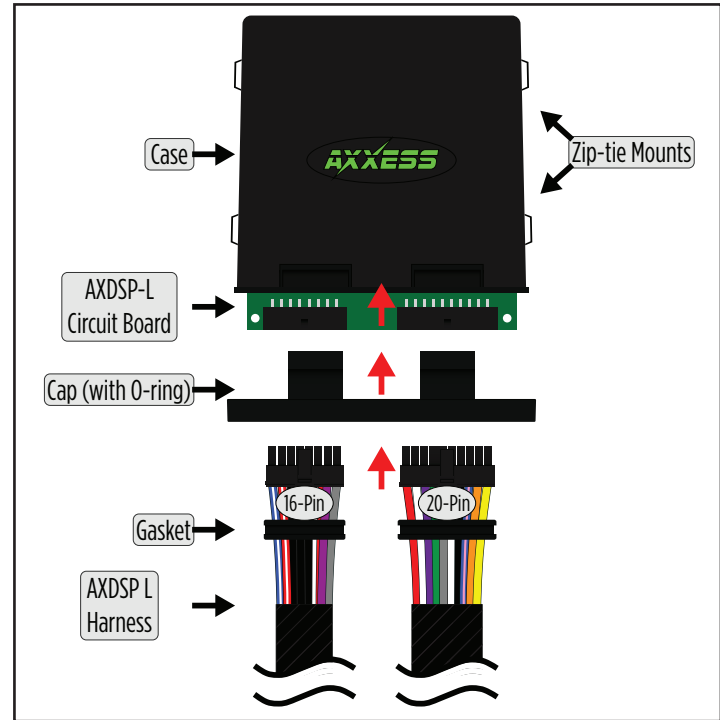
The **AXDSPL-WR** interface can be used with an aftermarket radio to improve the overall listening experience for car audio enthusiasts. Installers will connect the RCA inputs from the interface to the outputs from the aftermarket radio; **Front, Rear**. When using an aftermarket radio with the interface, **General** must be chosen for the vehicle type. ([refer to page 5](#))

### Stand-alone Bluetooth system:

The **AXDSPL-WR** interface and **AXDSP-BT** Bluetooth module can be used together as a stand-alone system and used in just about any 12-volt DC application. Perfect applications would be classic car installations where the dashboard cannot be altered, or in UTV vehicles. This can even be used inside a home with a 12-volt DC power supply. The options are endless and only limited by ones creativity. ([refer to page 6](#))

# INSTALLATION

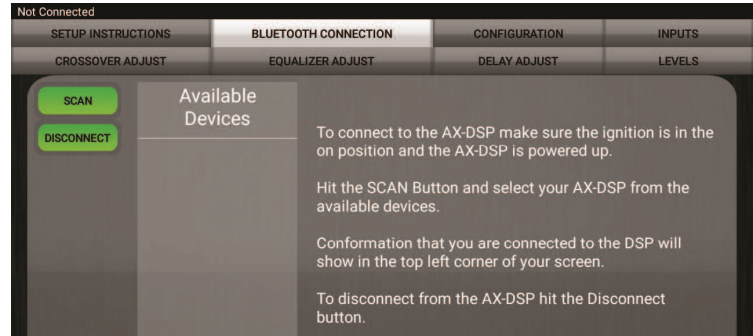
1. Install the **AXDSPL-WR harness** and make all necessary connections to the radio and vehicle, but leave the amp turn-on wire disconnected.
2. With the arrow stamped onto the cap facing upwards, push the 16-pin connector from the **AXDSPL-WR harness** into the left side of the cap. The locking clip on the connector should face upward. Make sure the gasket is seating properly in the cap. (Figure A)
3. With the arrow stamped onto the cap still facing upwards, push the 20-pin connector from the **AXDSPL-WR harness** into the right side of the cap. The locking clip on the connector should face upward. Make sure the gasket is seating properly in the cap. (Figure A)
4. Plug the 16-pin and 20-pin connectors from the **AXDSPL-WR harness** into the **AXDSP-L circuit board**. (Figure A)
5. Slide the assembly into the case, then click it shut. Zip-tie the enclosure to a secure location. Make sure the Axxess logo is facing up to further ensure that no outside elements can enter the enclosure.



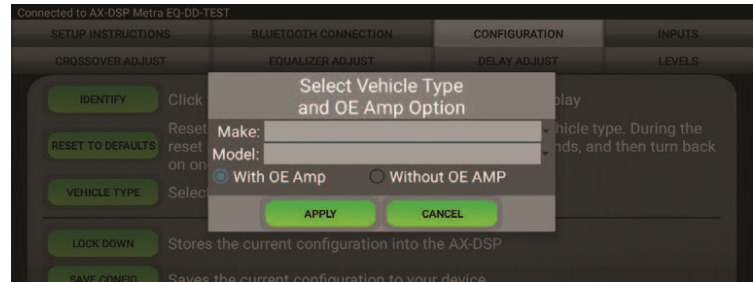
Continued on the next page (Figure A)

## INSTALLATION (CONT.)

- Download and install the AXDSP-X app from the **Google Play Store** or **Apple App Store**.
- Open the app then select the **Bluetooth Connection** tab. Follow the instructions to pair the mobile device to the interface. (Figure B)
- Scroll to the **Configuration** tab then select the vehicle type. Press the **Lock Down** button to save the configuration. Refer to pages 10-11 for more information. (Figure C)
- Connect the amp turn-on wire.
- Adjust the settings in the app as desired. Press the **Lock Down** button to save any new configurations.



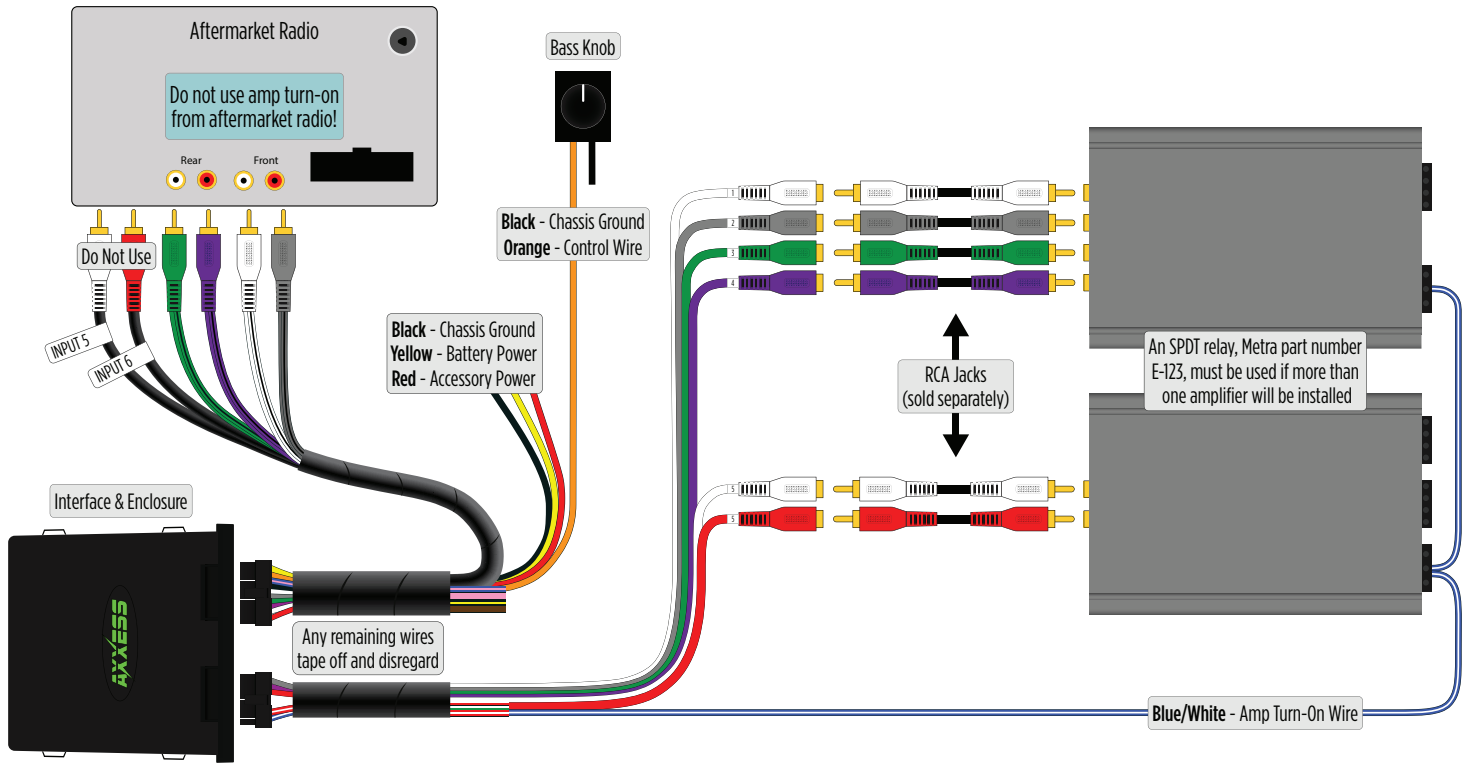
(Figure B)



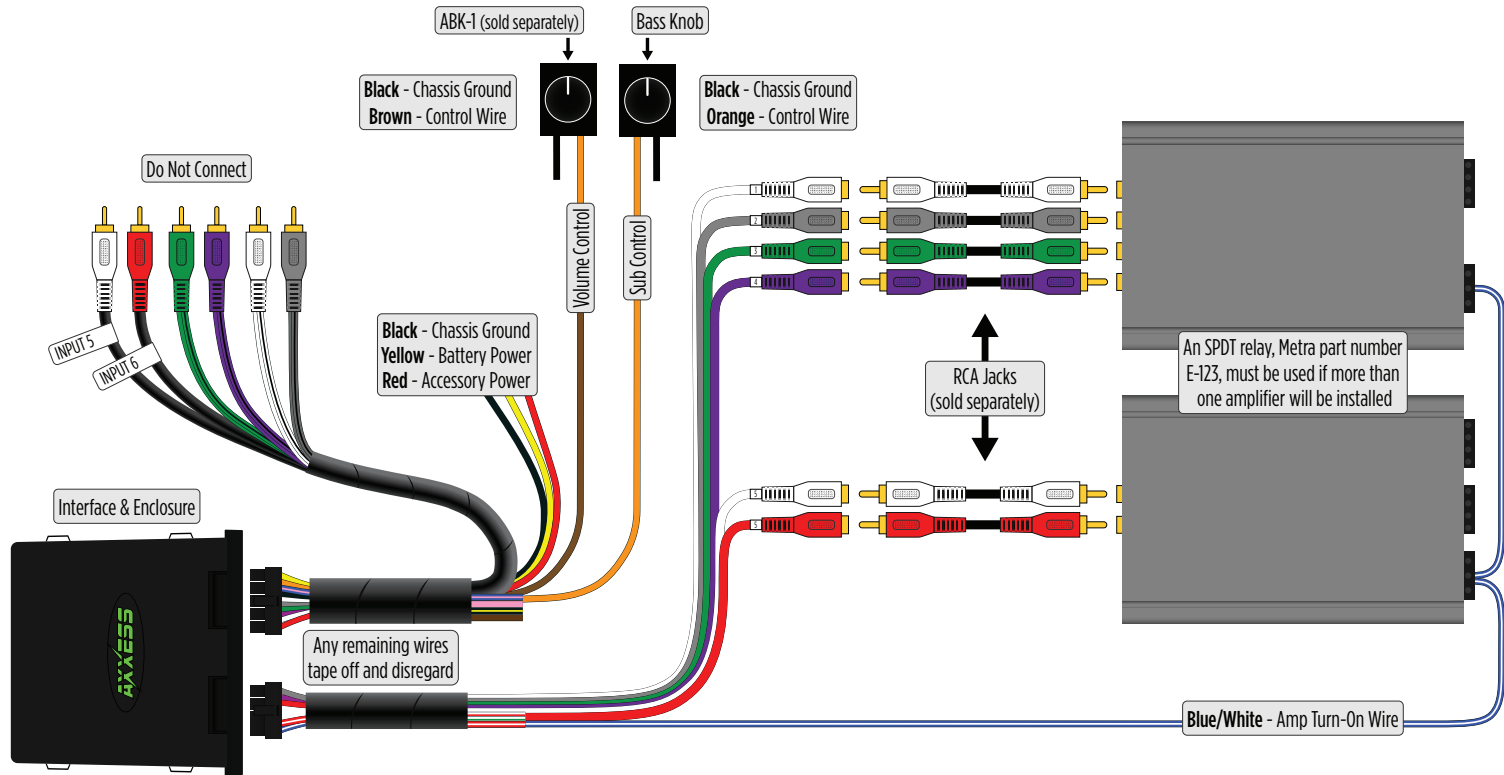
(Figure C)

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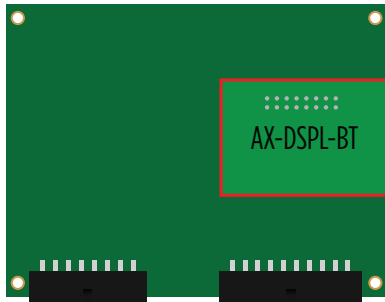
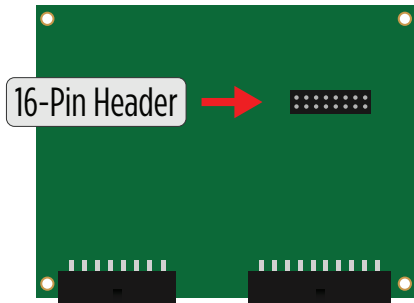
# AFTERMARKET RADIO SYSTEM



# STAND-ALONE BLUETOOTH SYSTEM



## BLUETOOTH INTERFACE



- The **AXDSPL-BT** Bluetooth interface will be used for adding a Bluetooth interface to the **AXDSPL-WR** for playing music files directly to the interface.
- While playing music the volume on the phone will be used. As an option, the **AXBK-1** (sold separately) can be used to control the volume.

**Note:** The bass knob included with the **AXDSPL-WR** can also be used if it will not be used to control a subwoofer.

1. **Important!** Unplug the **AXDSPL-WR** from the vehicle.
2. Locate the 16-pin header on the circuit board.
3. **Important!** Referencing how the Bluetooth interface is laid out in the picture, carefully line up the header pins to the **AX-DSPL-BT** Bluetooth interface. Gently press down to secure.

**Note:** Both interfaces may be damaged if installed wrong.

### AXBK-1 Installation:

4. Connect the **Brown** wire from the **AXDSPL-WR** harness, to the **Orange** wire from the **AXBK-1**. Ground the **Black** wire from the **AXBK-1**.

*Continued on the next page*

## Setup Instructions

Not Connected

SETUP INSTRUCTIONS	BLUETOOTH CONNECTION	CONFIGURATION	OUTPUTS
CROSSOVER ADJUST	EQUALIZER ADJUST	DELAY ADJUST	LEVELS

Using the vehicle specific harness, install the AX-DSP. The high level outputs from the OEM radio go to the inputs of the AX-DSP. The AX-DSP outputs are low level and should be connected to the amplifier inputs.

- Power on the system, and verify audio to the front (left and right), rear (left and right), and Subwoofer.
- Set the OEM radio bass and treble controls for flat frequency response.
- Set the left/right balance to center.
- Set the front/rear fader to center.

Detailed installation instructions are available on-line. Click the button below to view the instructions

[VIEW INSTRUCTIONS](#)

**AXXESS**<sup>®</sup>  
I N T E G R A T E

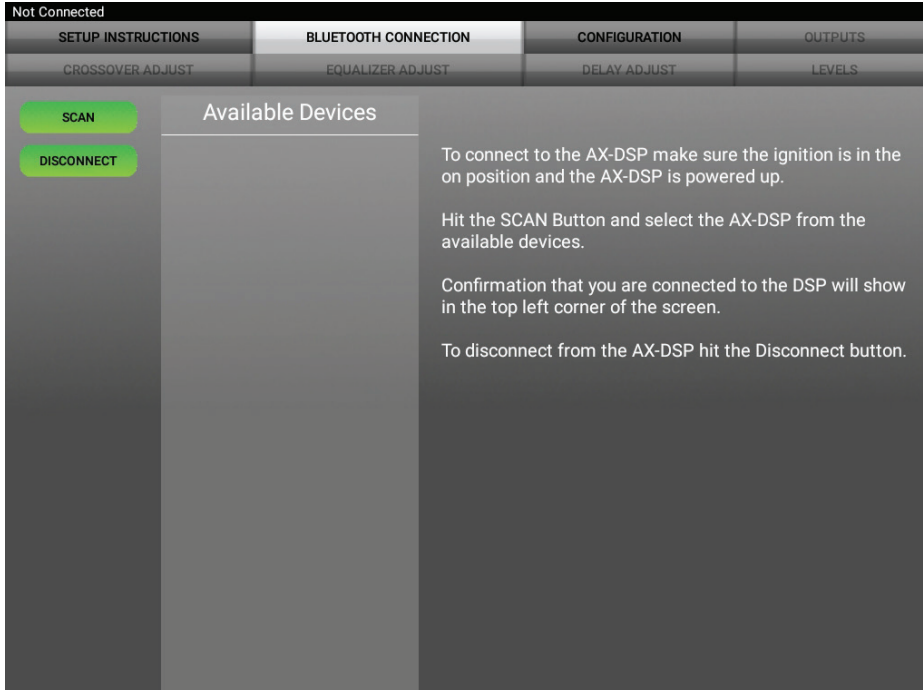
The AXDSPL-WR uses the same app as the AXDSP-X. Only items pertaining to the AXDSPL-WR will be shown.

- General information tab for installing the interface.

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## Bluetooth Connection



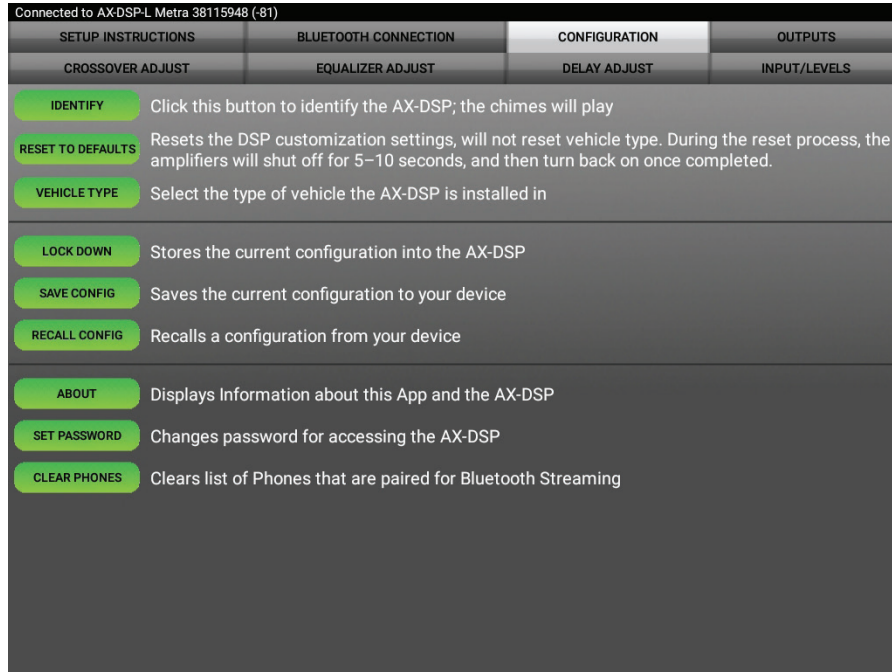
- **Scan** - Press this button to start the Bluetooth pairing process, then select the interface once it is found. “Connected” will appear in the top left corner of the app once paired.

**Note:** The interface must be powered during this process.

- **Disconnect** - Disconnects the interface from the app.

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## Configuration



- **Identify** - Click this button to confirm that the interface is connected properly. If so, a chime will be heard from the front left speaker\*.  
\* Only installations where the interface is connected to a front left speaker.
- **Reset to Defaults** - Resets the interface to factory settings. During the reset process the amplifiers will shut off for 5-10 seconds.
- **Vehicle Type** - Select the vehicle type from the drop down box, select either **Without OE Amplifier** or **With OE Amplifier**, then click the apply button.
- **Lock Down** - Click this button to save the selected settings.  
**Attention!** This button must be selected before closing the app or cycling the key otherwise all settings will be lost.
- **Save Configuration** - Saves the current configuration to the mobile device.
- **Recall Configuration** - Recalls a configuration from the mobile device.

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## Configuration (Cont.)

Connected to AX-DSP-L Metra 38115948 (-81)	
SETUP INSTRUCTIONS	BLUETOOTH CONNECTION
CROSSOVER ADJUST	EQUALIZER ADJUST
CONFIGURATION	OUTPUTS
DELAY ADJUST	INPUT/LEVELS
<b>IDENTIFY</b>	Click this button to identify the AX-DSP; the chimes will play
<b>RESET TO DEFAULTS</b>	Resets the DSP customization settings, will not reset vehicle type. During the reset process, the amplifiers will shut off for 5-10 seconds, and then turn back on once completed.
<b>VEHICLE TYPE</b>	Select the type of vehicle the AX-DSP is installed in
<b>LOCK DOWN</b>	Stores the current configuration into the AX-DSP
<b>SAVE CONFIG</b>	Saves the current configuration to your device
<b>RECALL CONFIG</b>	Recalls a configuration from your device
<b>ABOUT</b>	Displays Information about this App and the AX-DSP
<b>SET PASSWORD</b>	Changes password for accessing the AX-DSP
<b>CLEAR PHONES</b>	Clears list of Phones that are paired for Bluetooth Streaming

- **About** - Displays information about the app, vehicle, interface, and mobile device.
- **Set Password** - Assign a 4-digit password to lock the interface. If no password is desired, use "0000". This will clear out any currently set password. It is not necessary to lock down the interface when setting a password.  
**Note:** A 4-digit only password must be chosen otherwise the interface will show "password not valid for this device".
- **Clear Phones** - Clears phones paired from memory

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## Outputs

Connected to AX-DSP-L Metra 38115948 (-82) WARNING: Settings have changed - Make sure to 'Lock Down' before Exiting App

SETUP INSTRUCTIONS	BLUETOOTH CONNECTION	CONFIGURATION	OUTPUTS
CROSSOVER ADJUST	EQUALIZER ADJUST	DELAY ADJUST	INPUT/LEVELS

### Output Channels

#	Location	Group	Invert	Mute
1	Left Front	None	<input type="checkbox"/>	<input type="checkbox"/>
2	Right Front	None	<input type="checkbox"/>	<input type="checkbox"/>
3	Left Rear	None	<input type="checkbox"/>	<input type="checkbox"/>
4	Right Rear	None	<input type="checkbox"/>	<input type="checkbox"/>
5	Sub Woofer	None	<input type="checkbox"/>	<input type="checkbox"/>

## Output Channels

- **Location** - Location of speaker.
- **Group** - Used to join channels together for simple equalization. Example, left front woofer/midrange and left front tweeter will be considered simply left front. The letter **M** denotes the speaker assigned as the master speaker.
- **Invert** - Will invert the phase of the speaker.
- **Mute** - Will mute desired channel(s) for tuning individual channels.

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## Crossover Adjust

Connected to AX-DSP-L Metra 38115948 (-79) WARNING: Settings have changed - Make sure to 'Lock Down' before Exiting App

SETUP INSTRUCTIONS	BLUETOOTH CONNECTION	CONFIGURATION	OUTPUTS
CROSSOVER ADJUST	EQUALIZER ADJUST	DELAY ADJUST	INPUT/LEVELS

**Left Front** Lower Freq: 100 Hz

Low Pass 12dB  
 Band Pass 24dB  
 High Pass 36dB  
 48dB

**Right Front** Lower Freq: 100 Hz

Low Pass 12dB  
 Band Pass 24dB  
 High Pass 36dB  
 48dB

**Left Rear** Lower Freq: 46 Hz

Low Pass 12dB  
 Band Pass 24dB  
 High Pass 36dB  
 48dB

**Right Rear** Lower Freq: 100 Hz

Low Pass 12dB  
 Band Pass 24dB  
 High Pass 36dB  
 48dB

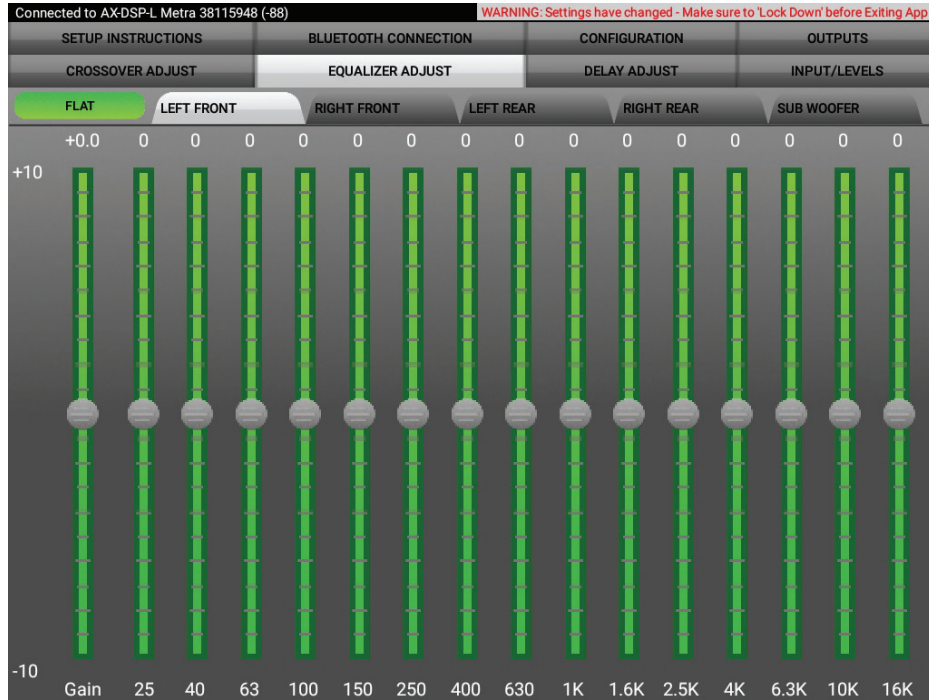
**Sub Woofer** Upper Freq: 100 Hz

Low Pass 12dB  
 Band Pass 24dB  
 High Pass 36dB  
 48dB

- If installing a subwoofer, the front and rear outputs will default to a 100Hz high pass filter to keep the low frequency signals out. If a subwoofer is not being installed, change the front and rear crossover points down to 20Hz for a full range signal, or to the lowest frequency the speakers will play down to.
- Selecting **High Pass** and **Low Pass** will provide one crossover frequency adjustment. **Band Pass** should only be chosen if installing just front speakers, with one dedicated amp for the woofers/mids, a second dedicated amp for the tweeters, along with a subwoofer.
- Select the desired crossover slope, 24db, 36db, or 48 db. Higher is steeper.

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## Equalizer Adjust



- The front, rear, and sub channels can be adjusted independently within this tab with 15 bands of equalization available. It is best to tune this by using an RTA (Real Time Analyzer).
- The **Gain** slider on the far left is for the channel selected.

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## Delay Adjust

Connected to AX-DSP-L Metra 38115948 (-84) WARNING: Settings have changed - Make sure to 'Lock Down' before Exiting App

SETUP INSTRUCTIONS	BLUETOOTH CONNECTION	CONFIGURATION	OUTPUTS
CROSSOVER ADJUST	EQUALIZER ADJUST	DELAY ADJUST	INPUT/LEVELS

Distance from each speaker to 'Head' position (in inches)

Left Front	0
Right Front	0
Left Rear	0
Right Rear	0
Sub Woofer	0

Measure the distance from each speaker to the desired 'Head' position and enter those values in the corresponding boxes. Maximum distance is 99".

- Allows a delay of each channel. If a delay is desired, first measure the distance (in inches) from each speaker to the listening position, then enter those values to the corresponding speaker. Add (in inches) to the desired speaker to delay it.

*Continued on the next page*


## Inputs/Levels

Connected to AXDSP-L Metra 38115948 (-81) WARNING: Settings have changed - Make sure to 'Lock Down' before Exiting App

SETUP INSTRUCTIONS	BLUETOOTH CONNECTION	CONFIGURATION	OUTPUTS
CROSSOVER ADJUST	EQUALIZER ADJUST	DELAY ADJUST	<b>INPUT/LEVELS</b>

### Chime Volume

Low      Medium      High

Volume: 5 

The Chime Volume control is provided to prevent warning tones from being overly loud.

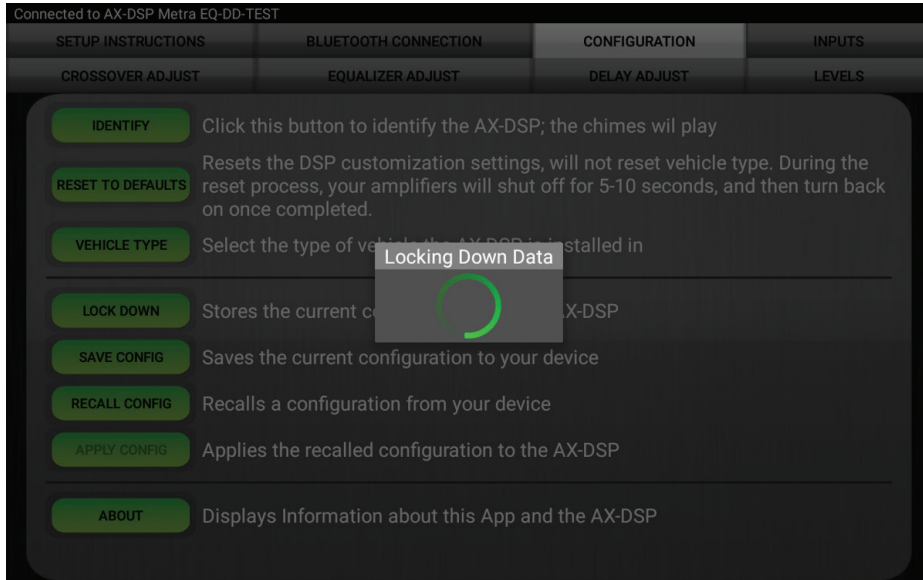
- **Chime Volume** - Allows the factory warning chimes to be adjusted up or down when interfacing factory systems.

**Note:** In newer Ford vehicles chimes will be heard through the gauge cluster if the factory amp is removed

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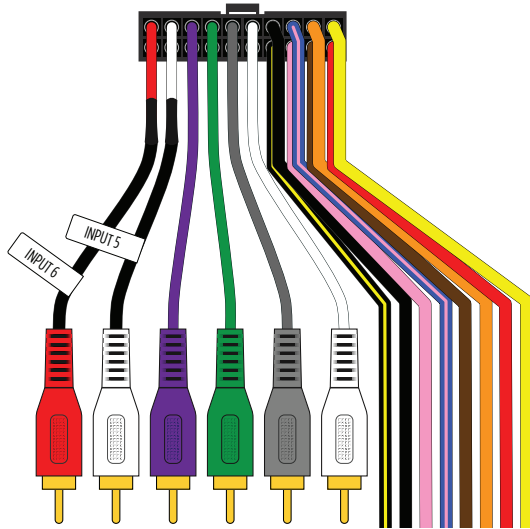


## Locking Down Data



**Last and the most important.  
You must lock down your configuration!!!**

## PINOUT



**Input 6** - N/A

**Input 5** - N/A

**Purple RCA Jack** - Rear Right Input \*

**Green RCA Jack** - Rear Left Input \*

**Gray RCA Jack** - Front Right Input \*

**White RCA Jack** - Front Left Input \*

**Black/Yellow** - Future Use

**Black** - Chassis Ground

**Pink** - CAN-HI

**Blue/Pink** - CAN-LO

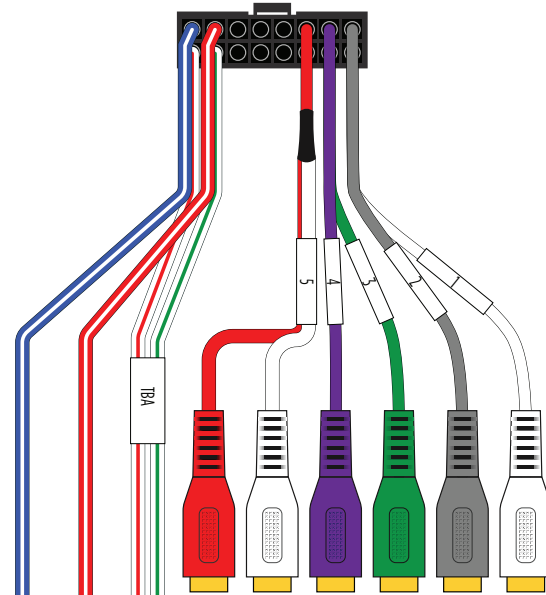
**Brown** - Control Wire for BT Volume Knob

**Orange** - Control Wire for Bass Knob

**Red** - Accessory Power

**Yellow** - Battery Power

\* Cut off RCA jack for speaker level input



**Blue/White** - Amp Turn-On

**Red/White** - Future Use

**White/Red** - Future Use

**White/Green** - Future Use

**RCA Jack 1** - User Assignable Output

**RCA Jack 2** - User Assignable Output

**RCA Jack 3** - User Assignable Output

**RCA Jack 4** - User Assignable Output

**RCA Jack 5** - User Assignable Output

## SPECIFICATIONS

Input Impedance	1M Ohm	Operating Voltage	10-16-volts DC
Input Channels	4	Standby Current Draw	7mA
Input Options	High-level or Low-level selectable	Operation Current Draw	150mA
Input Type	Differential-Balanced	Adjustments/Controls	Application via Bluetooth
Input Voltage		Remote Output	12-volts DC (signal sense or with ignition)
High Level Range	0 - 28-volts (peak-to-peak)		
Input Voltage			
Low Level Range	0 - 4.9-volts (peak-to-peak)		
Output Channels	6		
Output Voltage	Up to 5-volts RMS		
Output Impedance	50 Ohms		
Equalizer Type	15 Band Graphic EQ, +/- 10dB		
THD	<0.03%		
Frequency Response	20Hz - 20kHz		
Crossover	2-Way low-pass (sub), high pass (front & rear)		
Crossover Type	Linkwitz-Riley 24db slope, fixed		
Sampling	48kHz		
S/N Ratio	105dB @ 5-volts RMS		



# AXDSPL-WR

INSTALLATION INSTRUCTIONS

Having difficulties? We're here to help.



Contact our Tech Support line at:

**1-800-253-TECH**



Or via email at:

[techsupport@metra-autosound.com](mailto:techsupport@metra-autosound.com)

### **Tech Support Hours (Eastern Standard Time)**

Monday - Friday: 9:00 AM - 7:00 PM

Saturday: 10:00 AM - 7:00 PM

Sunday: 10:00 AM - 4:00 PM



### **KNOWLEDGE IS POWER**

Enhance your installation and fabrication skills by enrolling in the most recognized and respected mobile electronics school in our industry. Log onto [www.installerinstitute.com](http://www.installerinstitute.com) or call 800-354-6782 for more information and take steps toward a better tomorrow.



**Metra recommends MECP  
certified technicians**