



AXXESS AXDSPX-ETH1 Subwoofer Control Installation Guide

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AXDSPX-ETH1 Subwoofer Control



Axxess Bassknob for AX-DSP Subwoofer Control

Product Name: AX-BASSKNOB

This is an add-on accessory for the AX-DSP. It provides quick independent control of the subwoofer gain when installing an aftermarket subwoofer using the AX-DSP.

Installation

Installation of the AX-BASSKNOB is extremely easy. **There are two mounting options available:**

- Detachable mount: The gain control knob can be mounted under the dash or in a pocket.
- Flush mount: A washer and locking nut are provided for flush mounting of the gain control.

Axxess AXDSPX-ETH1

Installation Instructions **Product Name:** GENERAL MOTORS 2019-UP ETHERNET DSPX PACKAGE

Visit axxessinterfaces.com for the current application list.

Interface Features

- For Dash Disassembly Instructions, refer to metraonline.com. Enter the year, make, and model of the vehicle in the Vehicle Fit Guide for Radio Install kits.
- Connections
- Installation
- Troubleshooting

Tools Required

- Apple App Store
- iOS 12.1 or higher

ATTENTION: With the key out of the ignition, disconnect the negative battery terminal before installing this product. Ensure that all installation connections, especially the air bag indicator lights, are plugged in before reconnecting the battery or cycling the ignition to test this product. **NOTE:** Refer also to the instructions included with the aftermarket radio.

Axxess AXDSPX-ETH1 Factory Amp Harness

Applications: LD-DSP-ETH1 2019-2021, LD-DSP-ETH2 2022-UP

Connections

RCA Jacks (sold separately)

- Gray – Front Right +
- Purple – Rear Right +
- Gray/Black – Front Right –
- Purple/Black – Rear Right –
- White – Front Left +
- Green – Rear Left +
- White/Black – Front Left –
- Green/Black – Rear Left –
- Brown/White * – Center +
- Dark Blue/Pink * – Center –
- Assignable outputs labeled CH 7-10 to be used for optional amps.
- An SPDT relay, Metra part number E-123, must be used if the amp turn-on current of all amps exceed 1-amp.

Installation

1. Locate the factory amp (), unplug all connectors, then remove the amp.
2. Install the AXDSPX-ETH1 harness and make all necessary connections, but leave the amp turn-on wire disconnected.
3. Plug the 8-pin and 16-pin connectors from the AXDSPX-ETH1 harness into the AXDSPX-ETH1 interface.
4. Download and install the AXDSP-X app from the Google Play Store or Apple App Store.
5. Open the app and follow the instructions on the Bluetooth Connection tab to pair the mobile device to the AXDSPX-ETH1. (Figure A)
6. Scroll to the Configuration tab then select the vehicle type. Press the Lock Down button to save the configuration. (Figure B)
7. Connect the amp turn-on wire from the AXDSPX-ETH1 harness.
8. Click the Identify button to confirm that the AXDSPX-ETH1 is connected properly. If so, a chime will be heard from the front left speaker or gauge cluster. Test all functions of the installation for proper operation.



INTERFACE FEATURES

- Designed for GM Ethernet amplifiers
- Ethernet data interface w/AXDSP-X (digital signal processor) built-in
- Includes an amplifier bypass harness
- Retains factory chimes including parking sensor chimes
- Retains vehicle's voice prompts
- Chimes and voice prompts go through the aftermarket amplifier and/or cluster
- Selectable 31 Band graphic EQ or 5 Band Parametric EQ
- 10 individually assignable outputs

GENERAL MOTORS 2019-UP ETHERNET DSPX PACKAGE

Visit axxessinterfaces.com for current application list.

INTERFACE COMPONENTS

- AXDSPX-ETH1 interface
- AXDSPX-ETH1 harness
- LD-DSP-ETH1
- LD-DSP-ETH2
- AXBK-1
- AXDSPX-ETH1 interface harness (male connectors: 8-pin, 16-pin)
Amplifier bypass harness (female connectors: 8-pin black and 20-pin green)
- Independent equalization on each of the 10 outputs
- Independent high pass, low pass, and bandpass filters

- Each channel can be delayed independently up to 10ms
- Clipping detection and limiting circuits
- 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

TOOLS REQUIRED

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

Google Play Store



Apple App Store

iOS 12.1 or higher

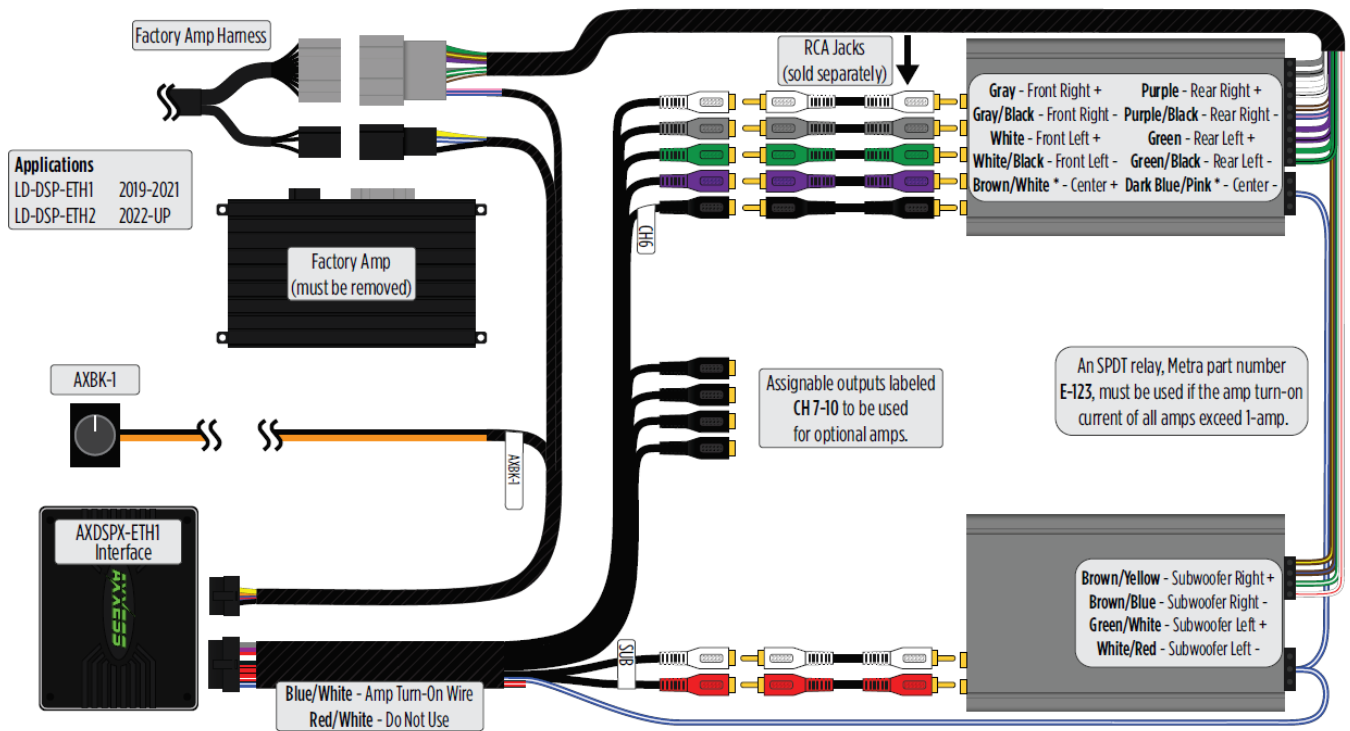


ATTENTION: With the key out of the ignition, disconnect the negative battery terminal before installing this product. Ensure that all installation connections, especially the air bag indicator lights, are plugged in before reconnecting the battery or cycling the ignition to test this product.

NOTE: Refer also to the instructions included with the aftermarket radio.

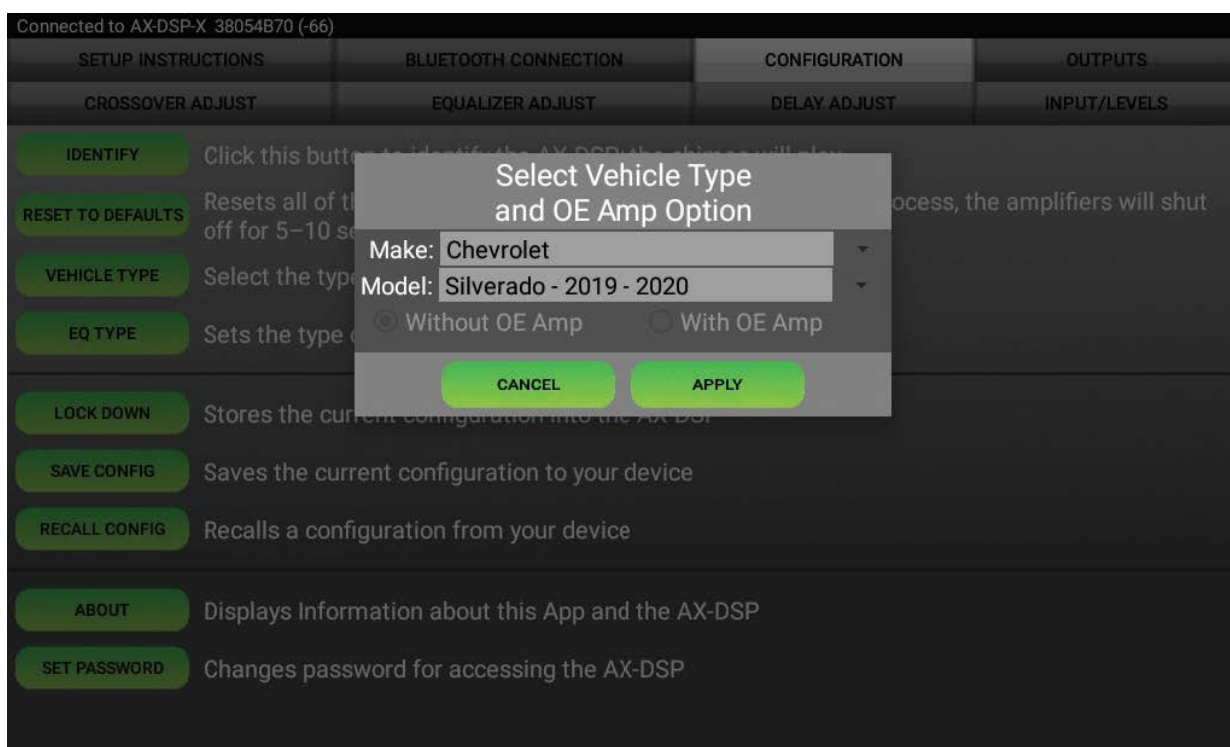
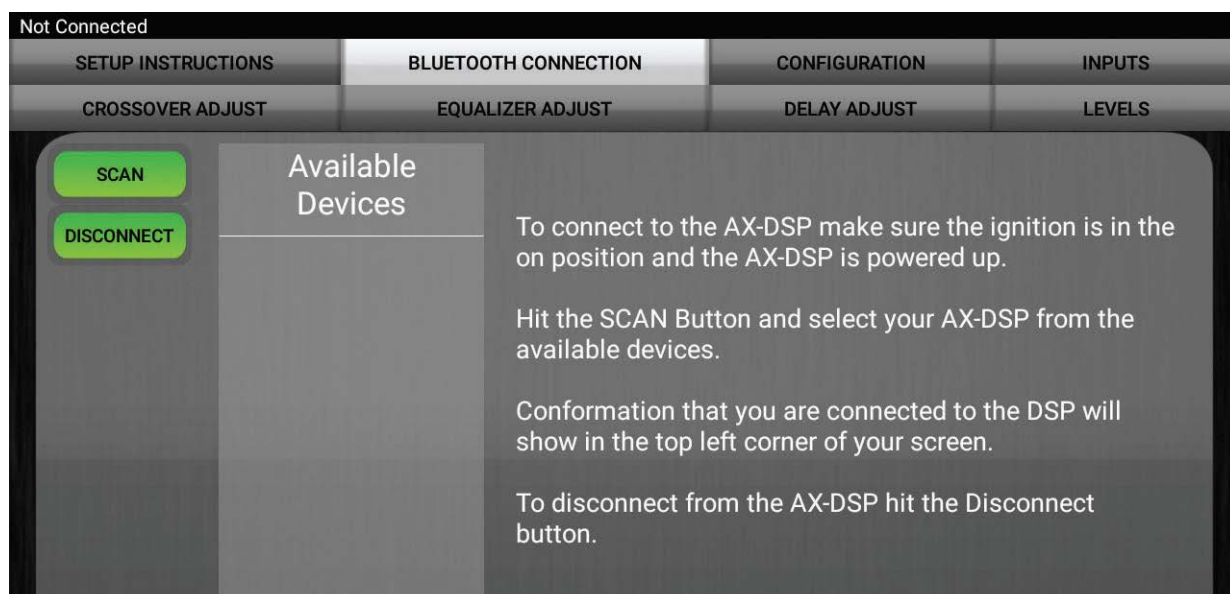
For Dash Disassembly Instructions, refer to metraonline.com. Enter the year, make, and model of the vehicle in the Vehicle Fit Guide for Radio Install kits.

CONNECTIONS



INSTALLATION

1. Locate the factory amp (+), unplug all connectors, then remove the amp.
2. Install the AXDSPX-ETH1 harness and make all necessary connections, but leave the amp turn-on wire disconnected.
3. Plug the 8-pin and 16-pin connectors from the AXDSPX-ETH1 harness into the AXDSPX-ETH1 interface.
4. Download and install the AXDSP-X app from the Google Play Store or Apple App Store.
5. Open the app and follow the instructions on the Bluetooth Connection tab to pair the mobile device to the AXDSPX-ETH1. (Figure A)
6. Scroll to the Configuration tab then select the vehicle type. Press the Lock Down button to save the configuration. (Figure B)
7. Connect the amp turn-on wire from the AXDSPX-ETH1 harness.
8. Click the Identify button to confirm that the AXDSPX-ETH1 is connected properly. If so, a chime will be heard from the front left speaker or gauge cluster. Test all functions of the installation for proper operation.
9. Adjust the DSP settings in the app as desired. Refer to the instructions under the Setup Instructions tab, or online at Axxessinterfaces.com for an explanation of each tab in the app.



TROUBLESHOOTING

- If the Red light in the AXDSPX-ETH1 interface is blinking, it is not communicating with the vehicle. Remove the key from the ignition, unplug the connectors from the interface, then inspect all connections made. If everything is proper, connect the harnesses back into the interface, cycle the key to ignition, then re-inspect. The Red light should be solid.

Having difficulties? We're here to help.

Contact our Tech Support line at: 386-257-1187

Or via email at: 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.edu or call

386-672-5771 for more information and take steps toward a better tomorrow.



Metra recommends MECP certified technicians

INSTALLATION OPTIONS

Aftermarket radio system:

The AX-DSP-X 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 AX-DSP-X to the outputs from the aftermarket radio; Front, Rear, Sub (sub is optional). When using an aftermarket radio with the AX-DSP-X, General must be chosen for the vehicle type. (refer to page 4)

Adding a subwoofer to an OEM System:

This feature offers the Installer the ability to add an aftermarket subwoofer to an OEM system, whether the OEM system is non-amplified, or amplified with an analog or digitally controlled (fixed signal) amplifier. If the vehicle is equipped with noise canceling mics, they must be disabled for this type of system. (refer to page 5)

OEM System without an amplifier:

This option allows the Installer to wire the AX-DSP-X directly to the speaker outputs from the OEM radio for an audio signal (high-level). (refer to page 6)

OEM System with an “analog” amplifier:

This option allows the Installer to tap directly to the output of the OEM radio and feed an audio signal into the AX-DSP-X. This type of installation requires the removal of the factory amplifier, and will provide a full range signal to the input side of the AX-DSP-X. (refer to page 7)

OEM System with a “digitally controlled” amplifier:

Digitally controlled systems function differently than analog systems. They have a fixed level audio signal that is controlled through the vehicle’s CAN bus. In most cases the programming content (audio) provided is just two channels, which can be either front or rear. The other channels are for content like Phone/Bluetooth, SMS reader, SYNC, or OnStar. The AX-DSP-X can retain these OEM features, and also provide a clean audio signal. This type of installation requires the removal of the factory amplifier, and will provide a full range signal to the input side of the AX-DSP-X.

Factory Radio Systems

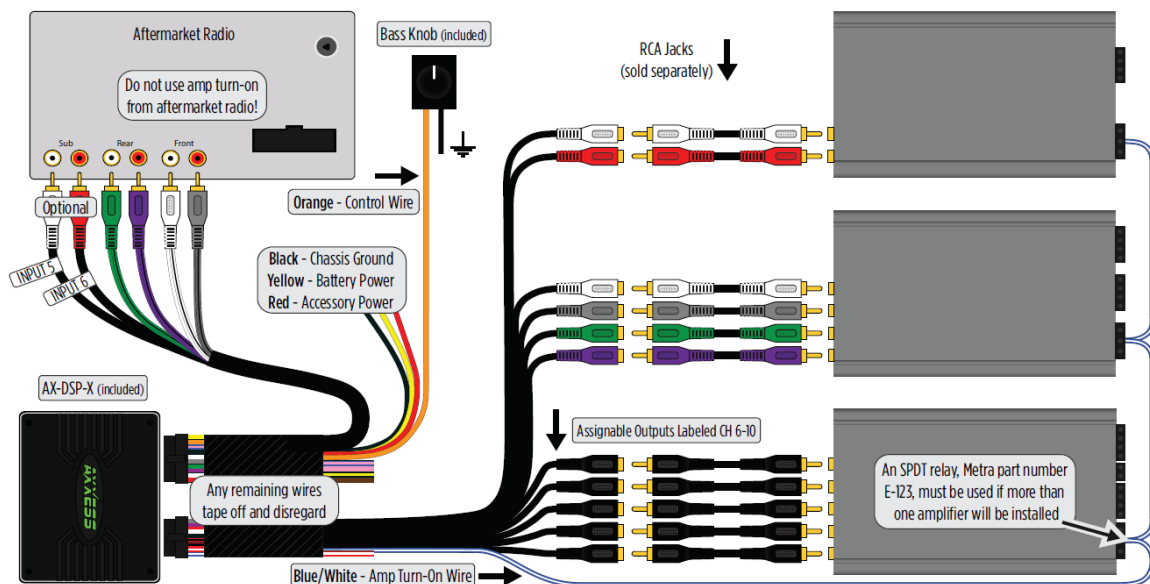
1. Remove the factory radio*, then unplug all connectors.
2. Install the vehicle specific T-harness (sold separately) and make all necessary connections, but leave the amp turn-on wire disconnected.

3. Plug the 20-pin AX-DSP-X harness into the AX-DSP-X.
 4. Plug the 16-pin AX-DSP-X harness into the AX-DSP-X.
 5. Plug all connectors back into the OEM radio.
 6. Download and install the AX-DSP-X app from the Google Play Store or Apple App Store.
 7. Using the app, select the vehicle.
 8. Connect the amp turn-on wire from the AX-DSP-X.
 9. Test all functions of the installation, then reassemble the dash to complete the installation.
- * Refer to Metra online for dash disassembly. If Metra makes a dash kit for the vehicle, disassembly will be within the instructions.

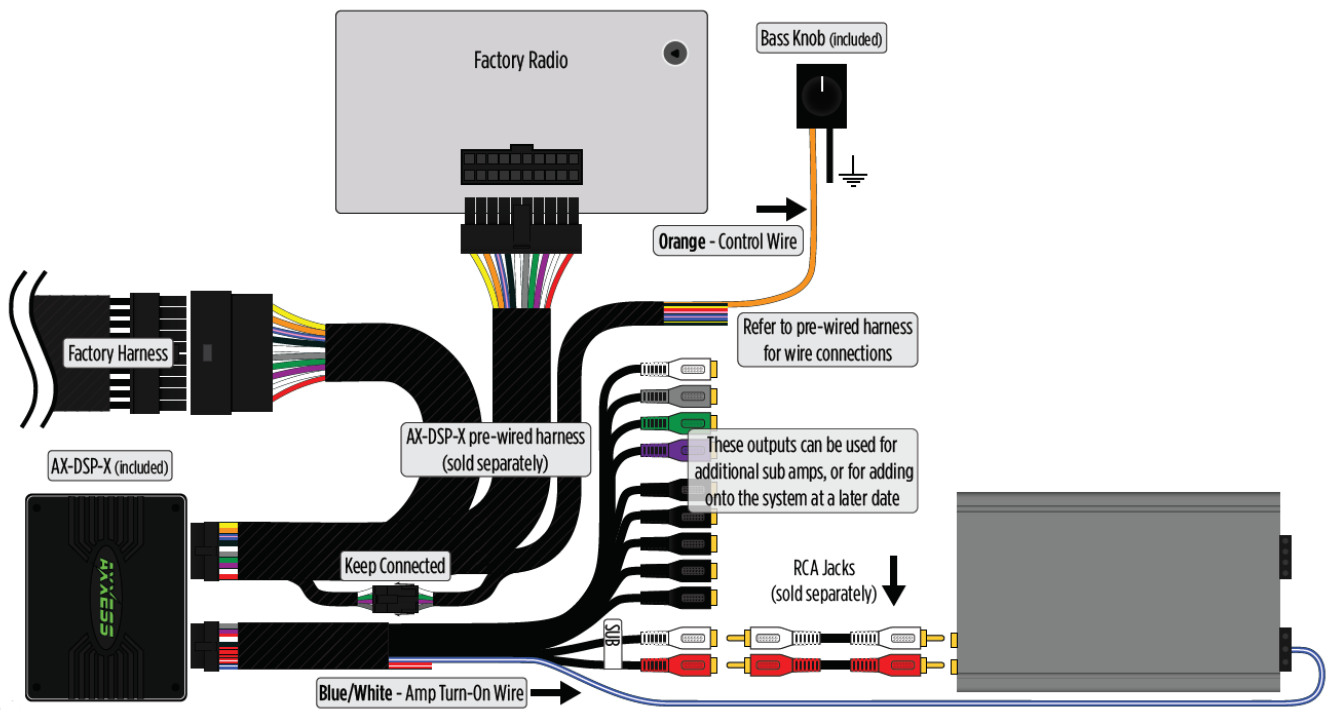
Aftermarket Radio Systems

1. Complete all necessary connections to the radio and vehicle, but leave the amp turn-on wire disconnected.
2. Plug the 20-pin AX-DSP-X harness into the AX-DSP-X.
3. Plug the 16-pin AX-DSP-X harness into the AX-DSP-X.
4. Download and install the AX-DSP-X app from the Google Play Store or Apple App Store.
5. Using the app, select the vehicle.
6. Connect the amp turn-on wire from the AX-DSP-X.
7. Test all functions of the installation, then reassemble the dash to complete the installation.

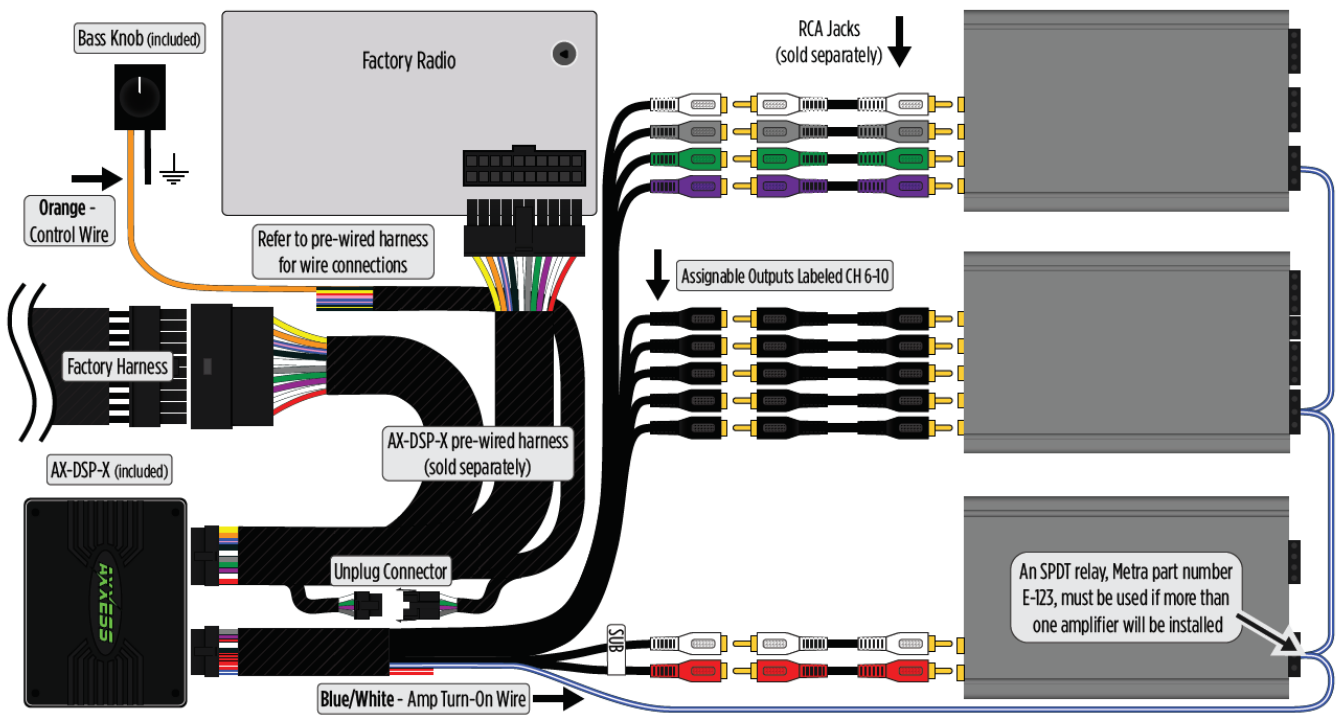
AFTERMARKET RADIO SYSTEM



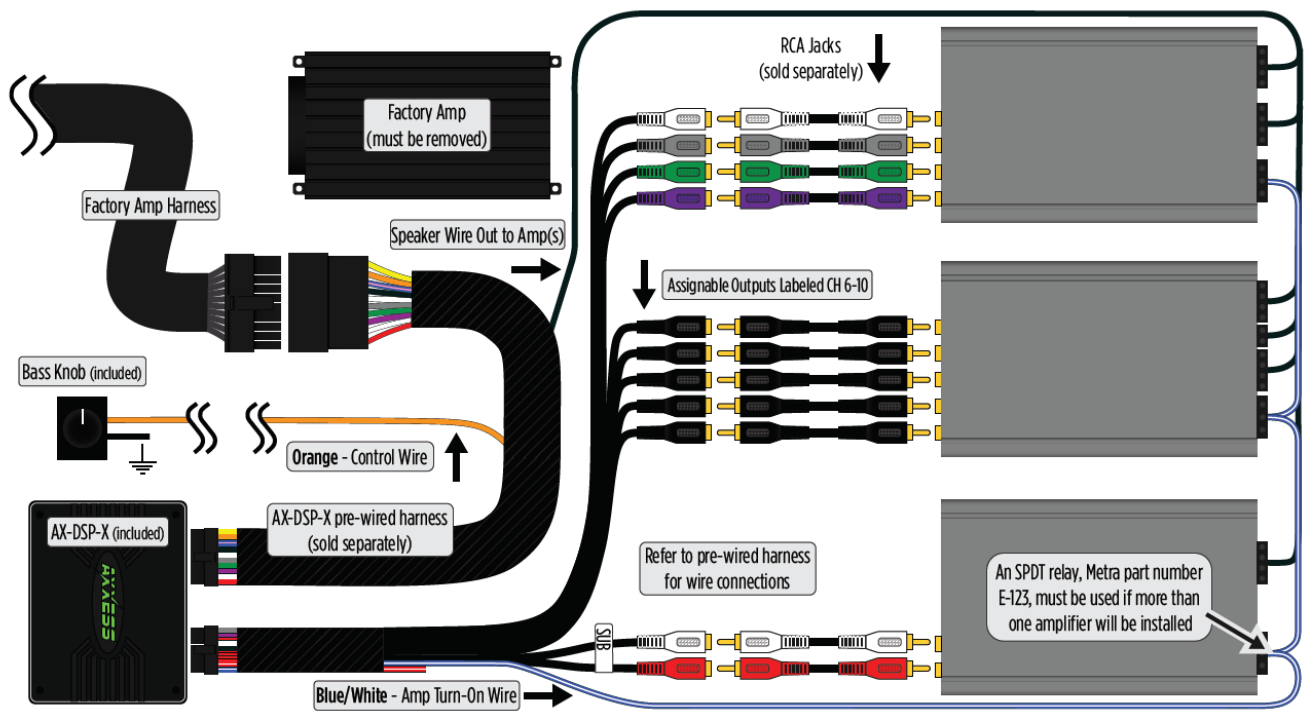
ADDING A SUBWOOFER TO AN OEM SYSTEM



OEM SYSTEM WITHOUT AMP



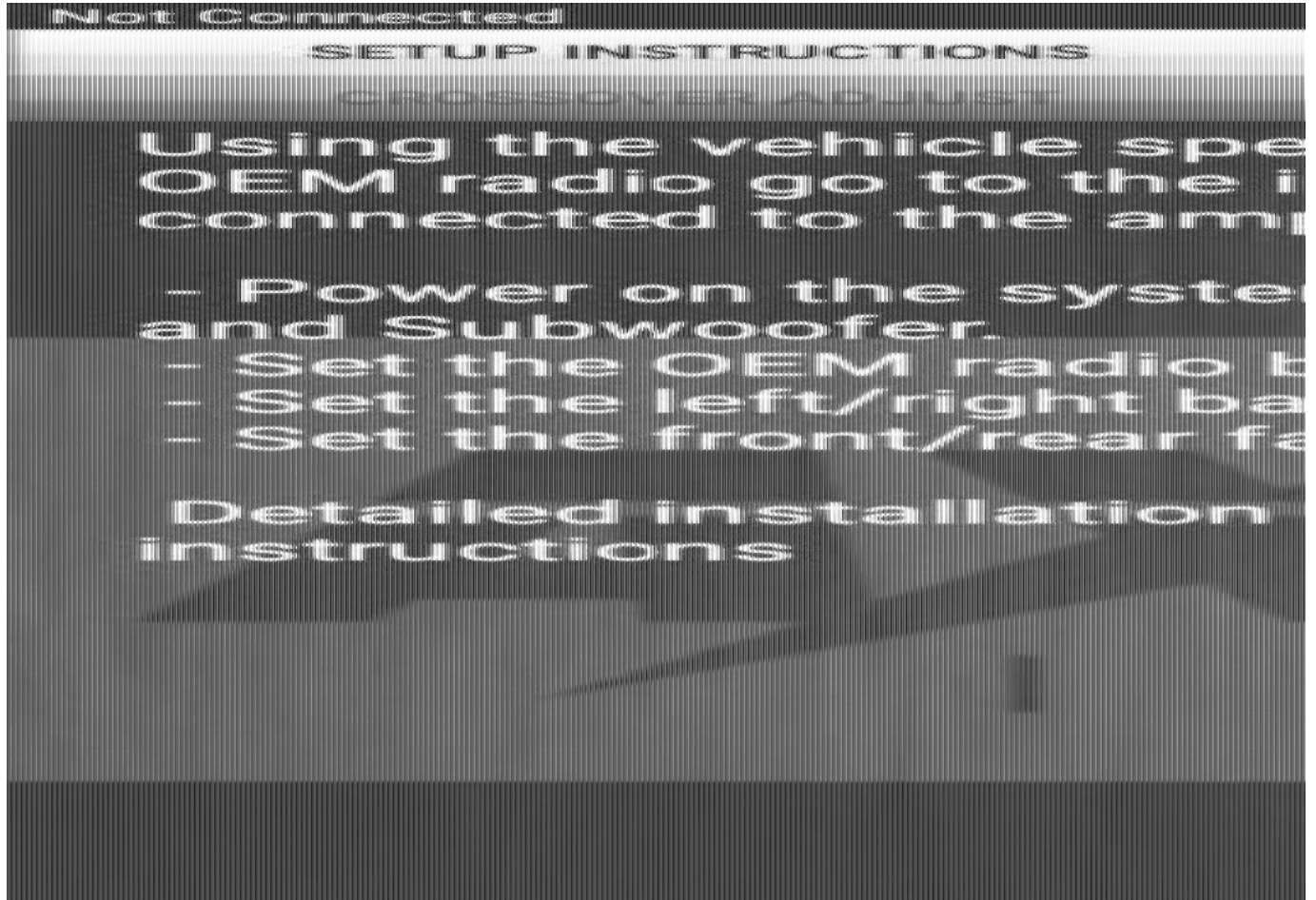
OEM SYSTEM WITH AMP BYPASS HARNESS



AX-DSP-X APP

Setup Instructions

- General information tab for installing the AX-DSP-X.



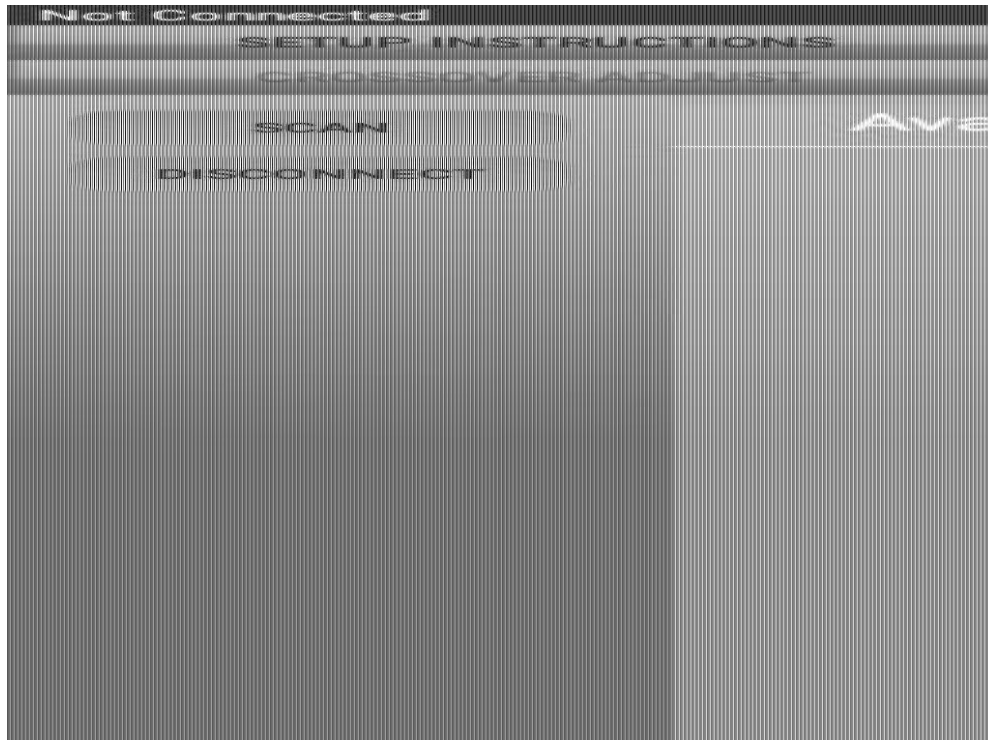
Bluetooth Connection

- **Scan**

Press this button to start the Bluetooth pairing process, then select the AX-DSP-X from the mobile device. The AX-DSP-X must be powered during this process. Confirmation that you are connected will show in the top left corner of the app.

- **Disconnect**

Disconnects the AX-DSP-X from the app.



Configuration

- **Identify** – Click this button to confirm that the AX-DSP-X is connected properly. If so, a chime will be heard from the front left speaker.
- **Reset to Defaults** – Resets the AX-DSP-X 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.

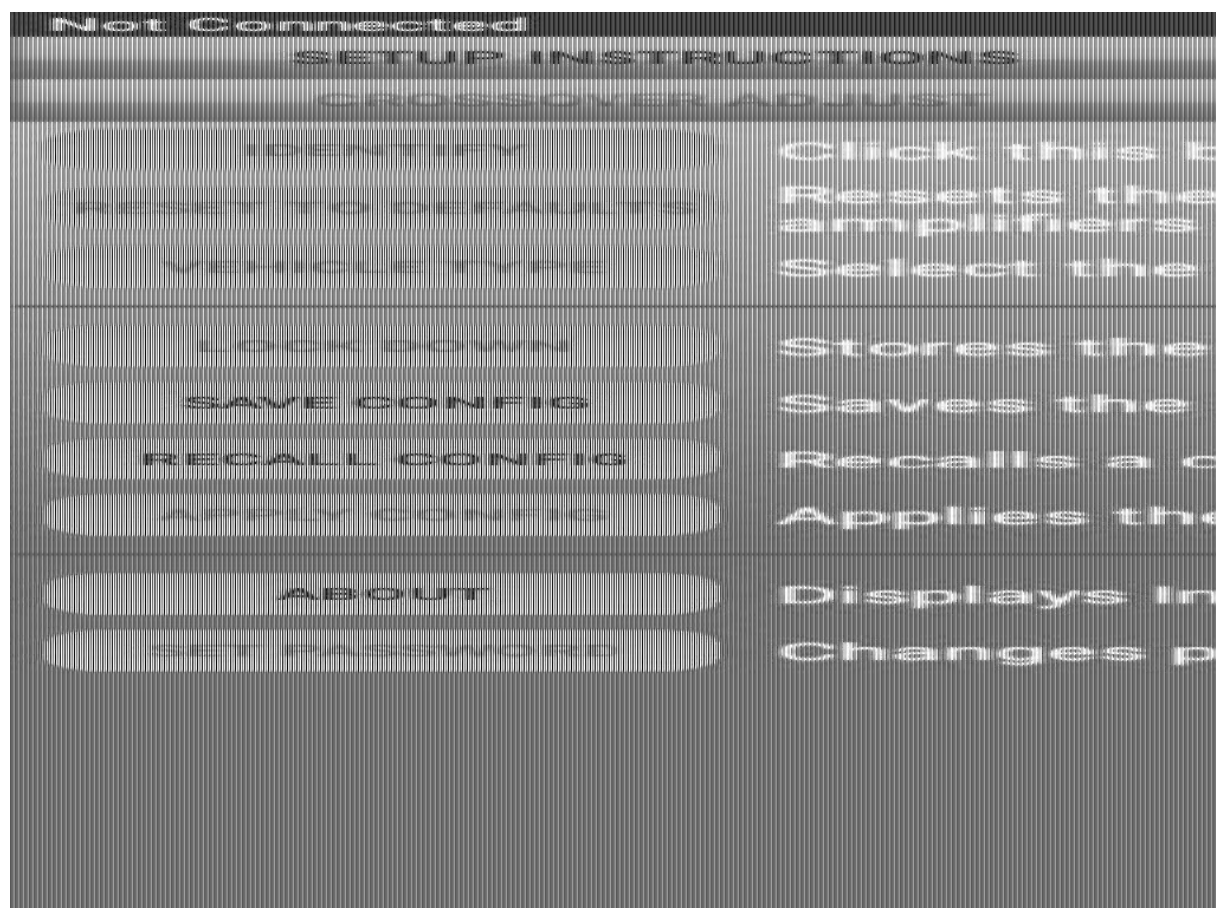
Attention! This button must be selected before closing the app or cycling the key otherwise all settings will be lost.

- **Save Configuration** – Saves the current configuration to the mobile device.
- **Recall Configuration** – Recalls a configuration from the mobile device.

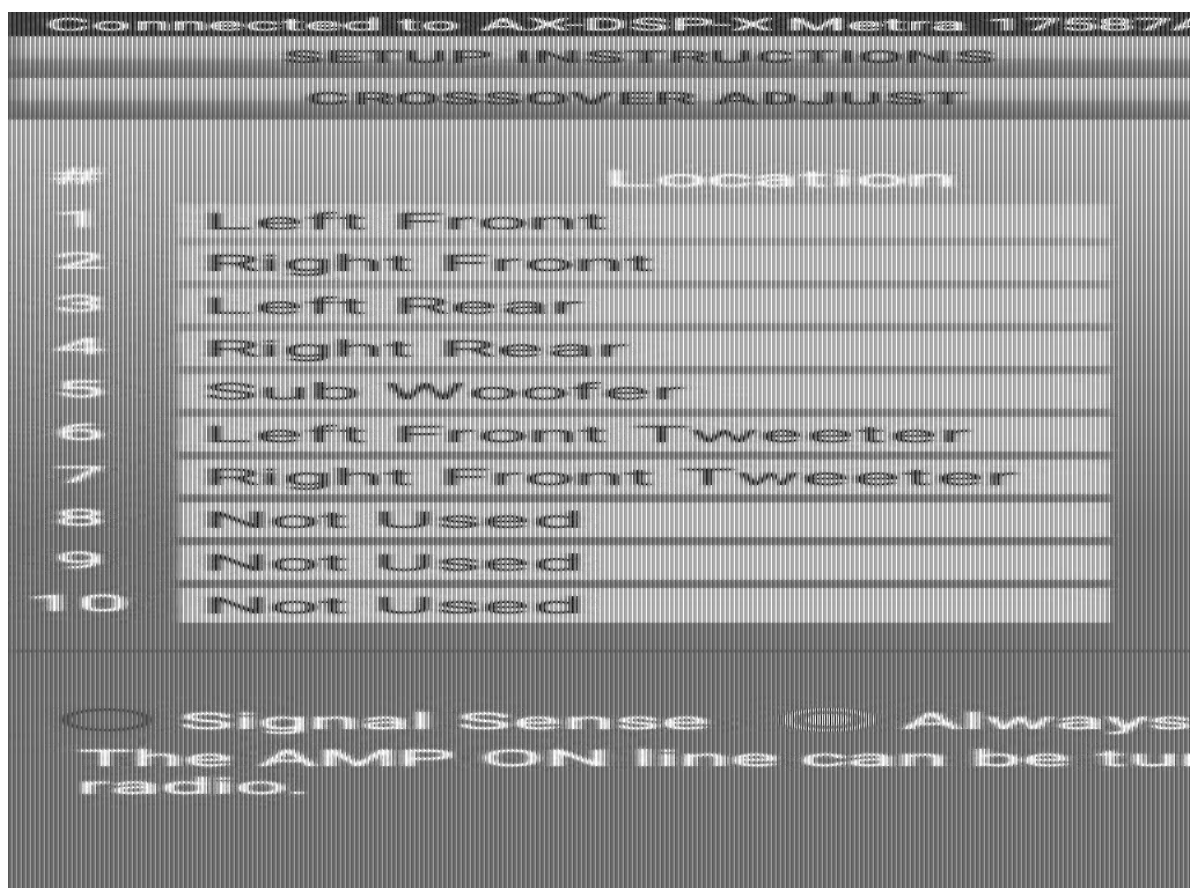


- Apply Configuration – Allows a recalled configuration to the AX-DSP-X. The AX-DSP-X will need to be locked down to save the recalled configuration. This process will shut the amplifier off between 5-10 seconds while the configuration is uploaded to the AX-DSP-X.
- About – Displays information about the app, vehicle, AX-DSP-X, and mobile device.
- Set Password – Assign a 4-digit password to lock the AX-DSP-X. If no password is desired, use “0000”. This will clear out any currently set password. It is not necessary to lock down the AX-DSP-X when setting a password.

Note: A 4-digit only password must be chosen otherwise the interface will show “password not valid for this device”.



Outputs



Output Channels

- Location – Location of speaker.
- Group – Used to join channels together. Example, left front woofer/midrange and left front tweeter will be considered simply left front to the AX-DSP-X. 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.

Amp Turn On

- Signal Sense – Will turn the amplifier on when an audio signal is detected, and keep on for 10 seconds past the last signal. This ensures the amplifier doesn't shut off between tracks.
- Always On – Will keep the amplifiers on as long as they are cycled on.
- Turn on Delay – Can be used to delay amp turn-on to avoid turn-on pops.

Crossover Adjust

- If installing a subwoofer, the front and rear outputs will default to a 100Hz high pass filter to keep the low frequency signals out of the full range speakers. 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 to.
- Selecting High Pass and Low Pass will provide one crossover frequency adjustment. Selecting Band Pass will provide two crossover frequency adjustments, one for low pass, and one for high pass.



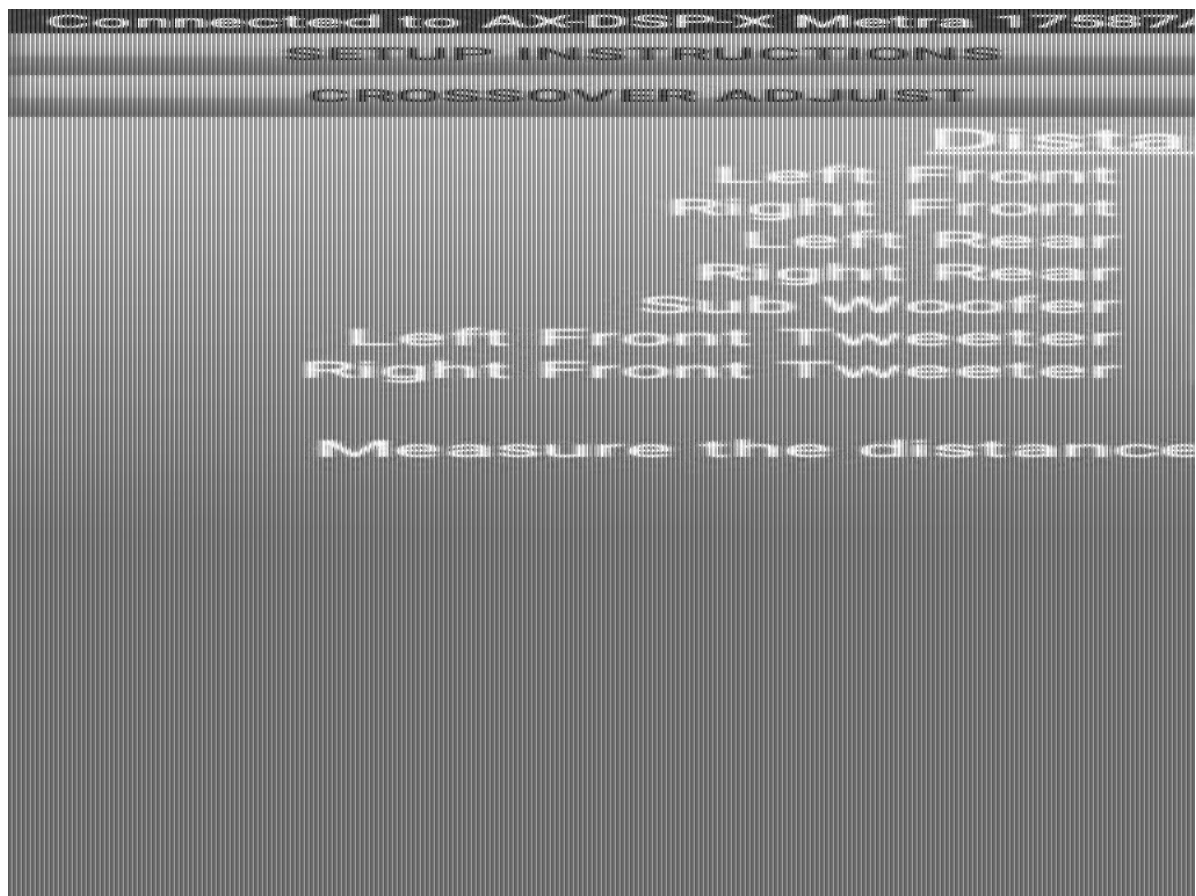
Equalizer Adjust

- All channels can be adjusted independently within this tab with 31 bands of available equalization. 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.



Delay Adjust

- Allows a delay of each channel, up to 10 milliseconds. First measure the distance (in inches) from each speaker to the listening position, then enter those values. If a delay is desired, add to the desired channel(s), up to 99 inches.

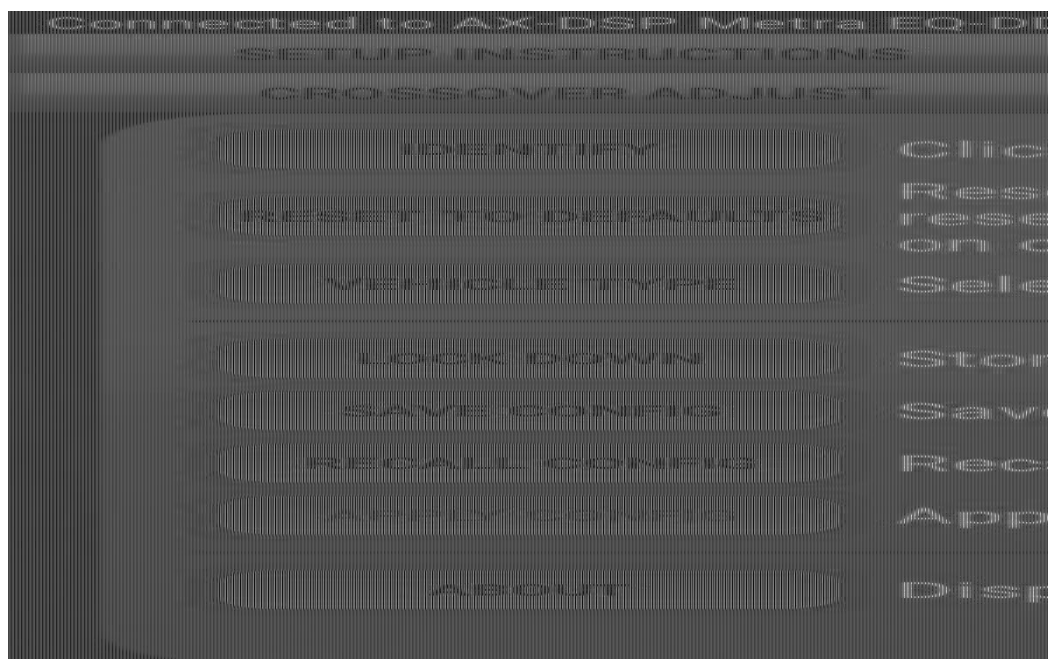


Levels

- Clipping Level – Use this feature to protect sensitive speakers like tweeters from being driven past their capabilities. If the output signal of the AX-DSP-X clips the audio will be reduced by 20dB.
- Turning down the stereo will allow the audio to come back at a normal level. The sensitivity of this feature can be adjusted to the listening preference of the user.
- Chime Volume – Allows the chime volume to be adjusted up or down. Note: In newer Ford vehicles chimes will be heard through the gauge cluster if the OEM amplifier is removed



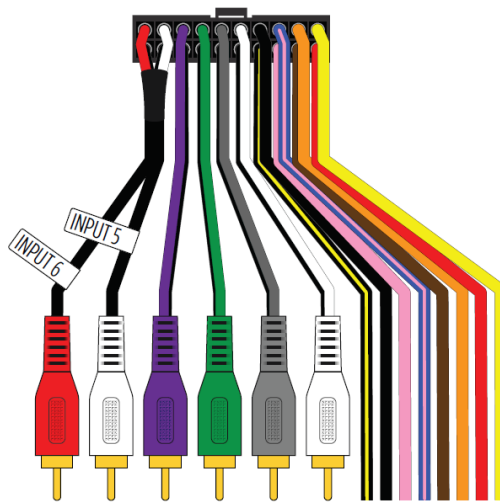
Locking Down Data



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

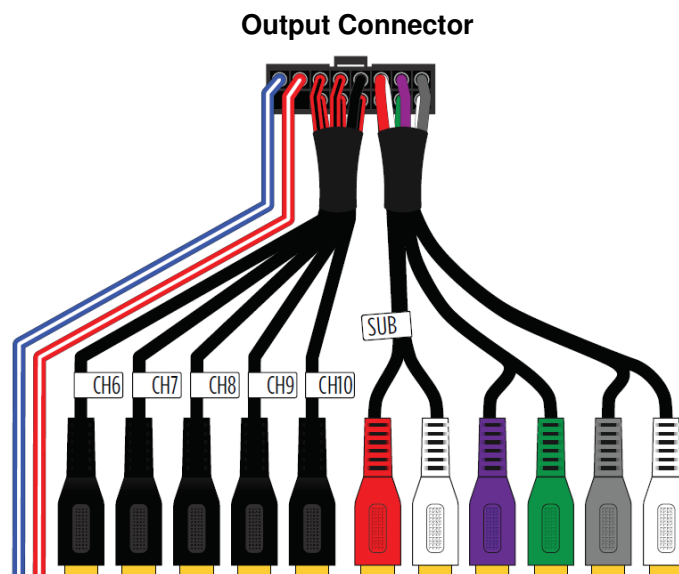
PINOUT

Input Connector



- Input 6 – Subwoofer Right Input
- Black – Chassis Ground
- Input 5 – Subwoofer Left Input
- Pink – CAN-HI
- Purple RCA Jack – Rear Right Input
- * Blue/Pink – CAN-LO
- Green RCA Jack – Rear Left Input
- * Brown – Future Use
- Gray RCA Jack – Front Right Input
- * Orange – Control Wire for Bass Knob
- White RCA Jack – Front Left Input
- * Red – Accessory Power
- Black/Yellow – Future Use
- Yellow – Battery Power

* Cut off RCA jack for speaker level input



- Blue/White – Amp Turn-On
- Purple RCA Jack – User Assignable Output

- Red/White – Future Use
- Green RCA Jack – User Assignable Output
Channel 6-10 – User Assignable Outputs
- Gray RCA Jack – User Assignable Output
Sub RCA Jacks – User Assignable Outputs W
- Blue RCA Jack – User Assignable Output

SPECIFICATIONS

- Input Impedance 1M Ohm
- Input Channels 6 High/Low level Selectable
- Input Options High Level or Low Level
- Input Type Differential-Balanced

Input Voltage

- High Level Range 0 – 28v Peak to Peak

Input Voltage

- Low Level Range 0 – 4.9v Peak to Peak
- Output Channels 10
- Output Voltage Up to 5v RMS
- Output Impedance 50 Ohms
- Equalizer Type 31 Band Graphic EQ, +/- 10dB THD <0.03%
- Frequency Response 20Hz – 20kHz
- Crossover 3-Way LPF, BPF, HPF THP per channel
- Crossover Type Linkwitz-Riley 24DB Slope, Fixed
- Sampling 48kHz
- S/N Ratio 105dB @ 5V RMS

General

- Operating Voltage 10 – 16VDC
- Standby Current Draw ~7mA
- Operation Current Draw ~150mA
- Adjustments/Controls Application via Bluetooth
- Remote Output 12VDC, Signal Sense or with Ignition

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Documents / Resources



[AXXESS AXDSPX-ETH1 Subwoofer Control](#) [pdf] Installation Guide
AXDSPX-ETH1, AX-BASSKNOB, AXDSPX-ETH1 Subwoofer Control, Subwoofer Control, Cont
rol

References

- [Axxess Integrate - Comprehensive Interface Products for Vehicle Upgrades](#)
- [Home - Auto Sound](#)
- [Axxess Integrate - Comprehensive Interface Products for Vehicle Upgrades](#)
- [Metra Online](#)
- [Installer Institute | Car Audio Installation and Mobile Electronics Education](#)

[Manuals+](#).