

QUICK START GUIDE

MS-8 CONNECTIONS

Chassis ground input: Connect it to a paint-free spot on the vehicle chassis.



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+12V: Connect it to the vehicle battery with a 25A fuse within 18 inches (45.7cm) of the positive battery terminal. Use 12 AWG wire minimum!

Remote turn-on output: Connect it to the remote turn-on input of all amplifiers in the system. The MS-8 MUST control the turn-on signal of the other devices that come after it in the signal path. The output is +12 volts DC, 1A.

Remote turn-on input: Connect it to the remote turn-on output of the source unit if the source has such an output. If not, this terminal can connect to the vehicle's accessory (ACC) power circuit. In either case, a connection with over +4 volts DC will trigger the unit, accommodating a range of factory source units or amplifiers.

Input signal connections: Many factory-installed systems include on-board equalization (EQ) and crossovers that make simple connection of aftermarket products difficult. The MS-8 includes signal-summing circuitry, signal-conditioning EQ and timecorrection processing necessary to reconstruct a two-channel, flat, full-range signal when you use the MS-8 with factory-installed equipment. Aftermarket head units with RCA-type outputs provide a flat, full-range, two-channel signal on their front RCA-type outputs. Connect only those outputs to the MS-8.



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RCA-type audio inputs: If you use the MS-8 with an aftermarket head unit that includes RCA-type outputs, connect the front outputs to the MS-8's RCA-type inputs 1 and 2 only. Do not connect any other output signals to RCA inputs 3–8.

Hi-Level inputs: If you use the MS-8 with a factory-installed head unit, or any head unit that does not include RCA-type outputs, connect the front left and front right speaker-level outputs from the head unit to "Hi Level Input" 1 and 2 on the MS-8. If the factory-installed system includes a separate amplifier, connect the output of the amplifier to the "Hi Level Input" of the MS-8. Note: Many factory-installed separate amplifiers include separate channels for front tweeters and midranges and subwoofers. Connect ALL of the front and subwoofer outputs to the speaker-level inputs of the MS-8.

Note: The subwoofer outputs of the factory amplifier MUST be connected only to the MS-8's input channels 7 and/or 8.

Aux input: Connect it to any auxiliary source with RCA audio outputs. Switching between the standard inputs and the Aux input is done in the MS-8 menu.

Speaker outputs: Connect them directly to the speakers if the MS-8's on-board amplifiers will be used. Fill out the chart below to simplify channel assignment during setup

Preamp outputs: If the MS-8's onboard amplifiers won't be used, connect the RCA-type inputs of additional amplifiers to the MS-8's RCA-type output connectors. Some speakers may be powered by the MS-8's amplifiers and some by additional amplifiers, but only use one connection type per output. For example, Output Channel 1 may use the MS-8's amplifier OR an additional amplifier, but not both. Do not connect a speaker to Speaker Output 1 AND an amplifier to RCA-type Output 1. Fill out the chart below to simplify channel assignment during setup.

Output #	Channel / Speaker Connected	Output Connector Used
1		\bigcirc RCA \bigcirc SPEAKER
2		○ RCA ○ SPEAKER
3		○ RCA ○ SPEAKER
4		\bigcirc RCA \bigcirc SPEAKER
5		\bigcirc RCA \bigcirc SPEAKER
6		\bigcirc RCA \bigcirc SPEAKER
7		○ RCA ○ SPEAKER
8		○ RCA ○ SPEAKER



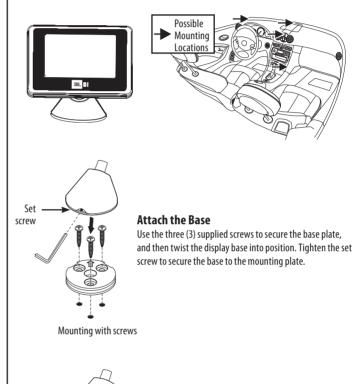
10 MS-8 Display: Connect it to the MS-8 using the supplied cable. You MUST connect the display during setup, but you may disconnect it after setup. If you do not install the display, you cannot adjust the MS-8, and the MS-8's remote control will not function.

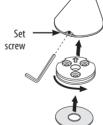


Microphone input: You must connect it to the MS-8 during setup. Once setup is complete, unplug the microphone and store it in a safe place. Do not use any other microphone with the MS-8.

DISPLAY INSTALLATION

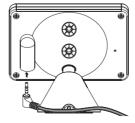
Choose a location for the display that is within easy sight while you are operating the vehicle but that does not obstruct your view or normal vehicle operations. Windshield mounting or mounting on the top of the dashboard between the driver and the windshield may be against the law in your municipality. Be sure to consult local laws before mounting the display.





If you use the supplied adhesive pad, be sure to clean the base and the mounting surface with the supplied alcohol pad to ensure proper adhesion. Once you have secured the base to the mounting surface, twist the display base into position. Tighten the set screw to secure the base to the mounting plate.

Mounting with adhesive



Plug in the Cable

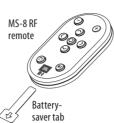
Plug the angled end of the display cable into the MS-8 display. Ensure that the other end of the display cable is connected to the MS-8.

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REMOTE CONTROL

The MS-8 features an RF (radio-frequency) remote to control all of the MS-8's user-selectable features. There are dedicated volume buttons on the remote's top that always control the system volume, regardless of which menu screen is active.

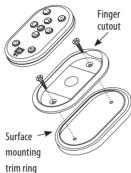
Before you use the remote, pull off and discard its batterysaver tab. Since the remote operates by radio frequency, you do not need to point the remote toward the display.



While you can leave the remote unmounted or secure it with Velcro[®], JBL offers two safe and convenient methods to secure the remote: surface mounting and flush mounting.

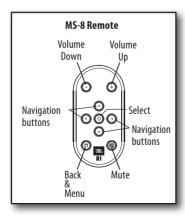
Surface Mount

- 1) Find a suitable location with flat surface where the RF receiver is located.
- 2) Ensure that no wiring or hazards are below the surface.
- 3) Remove remote from mounting cup. Observe position of finger cutout for final positioning.
- 4) Attach cup with trim ring to flat surface with two (2) supplied screws or double-sided tape.



Flush Mount

- 1) Find a suitable location with flat surface and 1/2" (12.7mm) of clearance below.
- 2) Ensure that no wiring or hazards are below the surface.3) Detach the trim ring from the mounting cup. Place on
- mounting surface.4) Mark cutout opening using the inside of the trim ring
- as a template.
- 5) Cut the mounting surface to allow the mounting cup to sit flush in the cutout.
- 6) Remove remote from mounting cup. Observe position of finger cutout for final positioning.
- Press the remote into place and secure it to the ounting surface with glue, double-sided tape or other materials. Some customization may be required.



SETTING UP THE MS-8

The setup procedure consists of four main parts: Language Selection, Input Setup, Output Setup and Acoustic Calibration. During Input Setup, the MS-8 uses a setup CD to analyze and condition the input signal for further processing. During Output Setup, you will configure the basic crossover settings and identify the output channels. During Acoustic Calibration, the MS-8 will automatically equalize the signal that it sends to the loudspeakers and optimize their response for up to four seating positions, using the included binaural microphone. You must complete all of these steps in sequence. If you stop the setup procedure before completing all of the steps, the MS-8 will start at the beginning of the last complete section when you turn it back on. Be sure to have the output-configuration chart you filled out during installation handy. It will make configuring the outputs easy.

1. Turn on the MS-8

Start the MS-8 by turning on the head unit (or turning the car's key to the ACC position if you've connected the REM In terminal to ACC power).

2. Choose Your Language

The MS-8 boots immediately to the language-selection screen the first time it's powered up. Once this screen appears, choose your language. Language > English.

3. Input Setup

Once you have chosen the language, the MS-8 will display the Input Setup Menu.

 Important: You must use the calibration CD provided with the MS-8 for this step. Do not convert the CD to a compressed file format (MP3, WMA, AAC, M4A or any other). If you "rip" the CD, do so only as a copy (WAV file), not a compressed format, and ensure that your media player can play a WAV file format.

If you are using an aftermarket head unit and have connected the head unit's RCA-type outputs to the MS-8's inputs 1 and 2, select Skip Input Setup and go directly to the Xover Setup section and menu. If you are using a factory-installed head unit connected to the MS-8's speaker-level inputs, select Input Setup and follow the Input Setup procedure that follows.

- a. Set the head unit's bass, treble, balance and fader controls to their "flat" or center position. If possible, defeat the factory system's additional processing (Dolby® Pro Logic II, Logic 7, seating-position selector, user-selectable equalization, etc.). Consult your vehicle's owner's manual for instructions.
- b. While the Input Setup screen is displayed, follow the on-screen instructions. Insert the supplied MS-8 CD into the audio source unit, and press "PLAY" on the source unit.

While the CD is playing, the MS-8 will analyze the input signal to ensure that it is receiving the correct signals and that both right and left signals are present. The MS-8's display will show Signal, Level and Balance, and there must be an OK displayed **next to each one** before you can continue.

- If None appears next to Signal, be sure that the head unit is outputting signal (increase the volume control), and/or check the MS-8's input connections.
- If Noisy appears next to Signal, ensure that the head unit's volume control isn't all he
 way up, and turn off the car's engine (if the car is running), but be sure not to turn the key
 past the accessory (ACC) position.
- If the display reads High or Low next to Level, adjust the head unit's volume control until OK appears.
- If Left or Right appears next to Bolonce, adjust the head unit's balance control until OK appears.
- c. Select Continue when the CD is playing Input Setup > (Press PLAY on CD) > Continue

The display will read Acquiring.... while the MS-8 analyzes and corrects the signal. Once the procedure is complete (up to a minute or two), follow the instructions on the screen: turn the head unit's volume down, remove the CD and select Continue.

ENGLISH

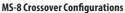


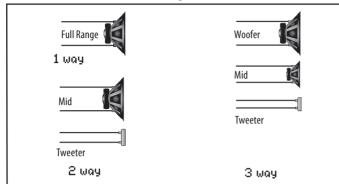
4. Output Setup

Xover Setup

During Xover Setup and Channel Selection, you will help the MS-8 configure the system. You must enter information according to a specific sequence. If you make a mistake and need to reenter information, you'll have to reenter all the information that follows as well. Refer to the configuration chart you filled out during Installation to make this process easy.

During Xover Setup, None, 1 or 2 and 1 way, 2 way or 3 way refer to the number of MS-8 output channels that will be devoted to driving a particular set of speakers.





Select Sub (Subwoofer)

- 1) Select (None), (1) or (2), depending on the number of output channels that will be devoted to driving a subwoofer or system of subwoofers.
- 2) Selecting (None) moves the menu screen to Front. If you've selected (1) or (2), select a Subsonic Filter frequency (20Hz–50Hz). We recommend 20Hz.
- 3) Select Subsonic Slope (6dB-4dB/octave). We recommend 12dB/octave.
- 4) Select Sub/Front Xover frequency between the Subwoofer and Front speakers (50Hz–200Hz). We recommend 80Hz.
- Select Sub / Front Slope between the subwoofer and front speakers (6dB-24dB/ octave). We recommend 24dB/octave.

Select Front (Front Speakers)

- 1) Select (1 way), (2 way) or (3 way), according to the diagram above in Xover Setup.
- 2) If there is no subwoofer, select Front Hi Pass frequency (20Hz-100Hz).
- 3) Select Front Hi Pass Slope (6dB-24dB/octave).
- 4a) If you are using a two-way front, select the Front Lo/Hi Xover frequency (50Hz-10kHz) and Front Lo/Hi Slope (6dB-24dB/octave) between the midrange and tweeter.
- 4b) If you are using a three-way front, first select the Front Lo/Hi Xover frequency (100Hz-10kHz) and Front Lo/Mid Slope (6dB-24dB/octave) between the woofer and midrange. Next, select the Front Mid/Hi Xover frequency (20Hz-10kHz) and Front Mid/Hi Slope (6dB-24dB/octave) between the midrange and tweeter.

Select Center (Center Speaker)

- Select (None), (1 woy) or (2 woy), according to the diagram above. If you selected (None), skip to the next set of speakers: Side.
- If you selected (1 way) or (2 way), select Center Hi Pass frequency (50Hz-10kHz). We recommend 80Hz.
- 3) Select Center Hi Pass Slope (6-24dB/octave). We recommend 24dB/octave.
- If you are using a two-way center, next select the Center Lo/Hi Xover frequency (50Hz-10kHz) and Center Lo/Hi Slope (6dB-24dB/octave) between the and tweeter.

Select Side (Side or Rear Speakers)

Note: If you have side **AND** rear speakers, input the information for the side speakers here and the rear speakers in the next step (Rear). If you have **ONLY** side **OR** rear speakers, input the information for those speakers in this step (Side) and skip Rear.

- Choose (None) or (1 woy). (Separate channels for tweeters are not available for side or rear speakers).
- 2) Choose Side Hi Pass frequency (50Hz-10kHz). We recommend 100Hz.
- 3) Choose Side Hi Pass Slope (6dB-24dB/octave). We recommend 24dB/octave.

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Select Rear (Rear Speakers)

If you have entered information for side speakers, and you'll be using rear speakers as well, enter the information for the rear speakers. If you are using only one set of speakers in the back of the car or there are no speakers in the back of the car, select (None).

- 1) Choose (None) or (1 way).
- 2) Choose Rear Hi Pass frequency (50Hz-10kHz). We recommend 100Hz.
- 3) Choose Rear Hi Pass Slope (6dB-24dB/octave). We recommend 24dB/octave.

If you need to make corrections, select the appropriate speaker location from the menu and reenter the information. Then reenter all of the information that follows as well.

When you are finished with **all** filter settings, select Done.

Channel Selection

This menu assigns the outputs configured in the MS-8's Xover Setup to specific output channels by number. The menu will display only valid choices (according to the entries in Xover Setup). Select the output channel based on the connections you documented in the output-channel configuration chart on page 2.

- 1) If a speaker or amplifier is connected to Channel 1, select Channel 1 from the Channel Selection menu.
- 2) Select the appropriate speaker configuration type for Channel 1. Depending on the entries in Xover Setup, the following choices <u>may</u> be available:

(FL) = Front Left	(FR) = Front Right
(FL Hi) = Front Left High	(FR Hi) = Front Right High
(FL Mid) = Front Left Midrange	(FR Mid) = Front Right Midrange
(FL Lo) = Front Left Low	(FR Lo) = Front Right Low
(Sub1) = Subwoofer 1	(Sub2) = Subwoofer 2
(Ctr) = Center	(Ctr Hi) = Center High
	(Ctr Lo) = Center Low
(SL) = Side Left	(SR) = Side Right

- (RL) = Rear Left (RR) = Rear Right 3) If a speaker or amplifier is connected to Channel 2, select Channel 2 and then select the
- appropriate configuration from the list that appears in the display.
- 4) Repeat the procedure for the other channels to which a speaker or amplifier is connected. If you make a mistake, select the channel that you want to correct, and then enter the correct selection. The MS-8 counts the number of channels used and will not allow duplicate entries. Check your entries carefully against the configuration chart. Once you're satisfied that all is correct, select Done in the Channel Selection menu.

Output Diagnostics

This screen is provided to help you check your work before you proceed to Acoustic Calibration. Select any of the displayed speaker locations to hear test noise through all of the channels dedicated to that location. For example, if you've set up a three-way front system, selecting Front Right will send test noise to the three channels you've designated as Front Right (FR Hi, FR Mid and FR Lo). Listen carefully as you move through the speaker locations. If you've made a mistake, correct your configuration chart and press the Menu button to return to the beginning of the Channel Selection menu. Then enter the all of the correct information starting at the beginning. You may also correct the mistake by reconnecting the RCA or speaker-wire connectors to the MS-8.

Once you've determined that all connections and selections are correct, select Done in the Output Diagnostics menu. Speaker Configuration Complete will appear. Next, select Continue.

Acoustic Calibration

In order to complete MS-8 setup, you must make acoustic measurements for the driver's seating position. You may also make acoustic measurements for up to three additional seats. For the best results for you and a single passenger, be sure to make measurements in the driver's and passenger's seats.

Connect the included binaural microphone to the input jack on the MS-8 labeled "Mic." Carefully route the microphone's cable to the driver's seat, leaving enough excess wire to accommodate the movements of your head. Sit in the driver's seat and place the mic headset on your head. Be sure that the left and right microphones are on the correct ears!

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If the MS-8's internal amplifier is set to drive the front speakers, set its volume to -20dB. If an external, higher-powered amplifier will drive the front speakers, set the volume to a level lower than -20dB.

In either case, the test-noise sweeps that you will hear during acoustic calibration should be about as loud as someone sitting in the passenger's seat speaking at a normal conversational level. Performing acoustic calibration with a level that's too high will negatively affect the calibration results.

Press "Select" to select Acoustic Measurement 1 of 4.

Setup in the Driver's Seat

- 1) Sit in the driver's seat and position the binaural microphones over your ears.
- 2) Look straight forward.
- 3) Select Go.
- 4) Hold your head still until the test signals stop and the next screen (Acoustic Measurement 2 of 4) appears on the display.
- 5) Continue looking forward for the second measurement.
- 6) Select Go.
- 7) Hold this position until the test signals stop. Note: This test signal takes a little longer, so be sure to hold your head still until it has completed and the next screen (Acoustic Measurement 3 of 4) appears.
- 8) Turn your head toward the driver's side mirror for the third measurement.
- 9) Select Go.
- 10) Hold this position until the test signals stop and the next screen (Acoustic Measurement 4 of 4) appears.
- 11) Turn your head toward the passenger's side mirror for the final measurement.
- 12) Select Go.
- 13) Hold this position until the test signals stop and the next screen (Driver's Seat / Next seating position / Done / Remeasure seating position / Quit) appears.

Setup in the Passenger's Seat

To measure the front passenger's seat, select Next seating position. Note: After the front passenger's seat is completely measured, Next seating position will refer you to the driver's rear seat and, finally, to the passenger's rear seat.

If you do not wish to measure additional seating positions, select Done.

If you think you've made a mistake, if there were any loud external noises at the time of the measurements, or if you want to remeasure the seating position for any other reason, select Remeasure seating position.

If the level of the test-noise sweeps was louder than normal conversational level, select Quit to abort Acoustic Calibration and to return to the beginning of Acoustic Calibration to re-adjust the level.

Repeat these steps for up to four seating positions. When you have completed all measurements, select Done.

Acoustic Measurement Complete......Please Wait will appear while the MS-8 calibrates the system. When the calibration is complete, the Main Menu will appear. Disconnect the microphone. Insert your favorite CD, listen and evaluate your results. Additional adjustments are available in the Moin Menu.

MAKING ADJUSTMENTS – MAIN MENU

From the MS-8's Main Menu, you can navigate to all of the additional MS-8 functions and adjustments.

Note: If you do not wish to install the MS-8 display permanently but would like to make some additional adjustments with the EQ or DSP settings, do so at this time while the display is still connected. After you disconnect the display, the Main Menu and additional adjustments will not be available. In addition, the remote will not function.

If you will not mount the display and don't wish to use any of these additional adjustments, set the MS-8's volume control to -6dB and simply unplug the display after acoustic measurements are completed. Be sure to store both the display and the remote control in a safe place in case you want to reconfigure the system or make future adjustments.

Main Menu Choices: From the Main Menu, there are several choices for MS-8 adjustment and use.

Main Menu

- ▶ Input Selection: Allows user to choose Aux or Head Unit
- ► Audio Controls: Channel levels, tone control, 31-band EQ, Logic 7, and seating position
- ► Fovorites: Store and recall favorite settings
- ► Calibration/Setup: Setup as documented previously in this guide
- ► System Settings: Operational and display settings for MS-8

Selecting the Aux Input: To switch to the Aux input from the Main Menu, simply select Input Selection, then select AUX in the next menu.

Main Menu > Input Selection > AUX

To revert back to the head unit, choose Head Unit in the Input Selection Menu.

Setting System Levels, Tone Controls and EQ: To adjust the level of the center channel, subwoofer or auxiliary input, or to adjust the balance or fader control, simply follow these menu paths: Main Menu > Audio Controls > System Levels > (Choose Channel or Aux by using the remote's \blacktriangle/ ∇ buttons.)

To adjust any bass, midrange or treble tone controls, simply follow these menu paths:

Main Menu > Audio Controls > Tone Control > (Choose Tre, Mid or Bas to adjust the tone control with the remote's \blacktriangle / \triangledown buttons.)

The MS-8 has a 31-band graphic equalizer (EQ) with a range of +/-10dB at each center frequency. To adjust the graphic EO, simply follow these menu paths: Main Menu > Audio Controls > Graphic EQ > (Choose Frequency to adjust the graphic EQ with the remote's \blacktriangle / \checkmark buttons.)

Once you've chosen a frequency to adjust and highlighted it with the (**A**) arrow underneath it, use the MS-8 remote control's ▲/▼ buttons to adjust the level up or down. Press the select button on the remote to reset the level to the center position for that band.

Note: Digital volume and EQ work differently from standard analog controls, and adding too much boost can cause unwanted clipping. Don't boost the sub level, the bass (in the tonecontrol menu) and the subwoofer bands in the 31-band EQ to their maximum in every menu and set the MS-8's volume control to 0dB. Doing so will cause severe clipping (distorted sound) and may damage your loudspeakers.

Selecting Logic 7, Digital Signal Processing (DSP), and Optimized Seating Positions: To turn the Logic 7[®] matrix processing on and off, simply follow these menu paths: Main Menu > Audio Controls > Logic 7 > (To toggle between ON or OFF, press Select on the remote.)

To enable or disable Equalization and Time Correction, simply follow these menu paths: Main Menu > Audio Controls > Processing > (To toggle between Default or Active, press Select on the remote.)

The MS-8 allows you to select an optimum listening position based on how many seating positions you measured during the setup process.

To select the preferred optimum listening position, simply follow these menu paths: Main Menu > Audio Controls > Seat > (To toggle among Driver, Possenger, Front, Reor and All, press Select on the remote.)

"Driver" or "Passenger" optimizes either front seat as the preferred position. "Front" or "Rear" optimizes both front or both rear seats as the preferred position. It is ideal when the primary listener(s) generally use one row of seating most often.

"All" is a general setting for good results in any seated position.

Caution : Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate

Changes or modifications not expressly approved or we pure, response to the equipment.
Compliance statement:
I: This device is verified to comply with Part 15 of the FCC Rules. Operation subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.
2: This sequipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However,there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment of an on, the user is encouraged to try to correct the interference by one or more of the following measures:
 - Rocrease the separation between the equipment and receiver.
 - Conset the equipment into an outlet on a circuit different from that to which the receiver is connected.
 - Consult the dealer or an experienced radio/TV technician for help.