Your PDF Guides

You can read the recommendations in the user guide, the technical guide or the installation guide for JBL MS 8. You'll find the answers to all your questions on the JBL MS 8 in the user manual (information, specifications, safety advice, size, accessories, etc.). Detailed instructions for use are in the User's Guide.

> **User manual JBL MS 8**
> **User guide JBL MS 8**
> **Operating instructions JBL MS 8**
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> **Instruction manual JBL MS 8**

JBL

jbl **MS-8**
System integration digital processor

USER GUIDE

Manual abstract:

Please read this manual carefully before attempting installation. If you do not have the necessary tools or experience, do not attempt the installation yourself. Instead, please ask your authorized JBL car audio dealer about professional installation or visit www.JBL.com to find the nearest professional. This manual explains how to install, set up and use your MS-8 in a general sense but will not indicate the specific wiring codes, connections and locations for your particular vehicle. @@JBL's technicians or Web pages may also be able to help. This manual does not explain why the MS-8 works. @@@@@We recommend listening at low or moderate levels while driving your car. JBL accepts no liability for hearing loss, bodily injury or property damage resulting from the use or misuse of this product.

Replacing the Fuse If you must replace the MS-8's fuse, use only the same type and rating as that of the original. Do not substitute another kind. BOX CONTENTS (1) MS-8 main unit (1) MS-8 display unit and base (1) Hi Level input wiring harness (gray and white insulation) (1) Speaker-output wiring harness (clear insulation) (1) 6m (19.7 ft), 2.5mm (1") three-conductor cable for display unit (1) Wireless remote control (battery installed) (1) Remote-control installation tray (1) Remote-control trim ring (1) Binaural microphone headset (1) Calibration and setup CD (includes instruction manual and quick-start guide) (1) Quick-start guide (4) 4x20 screws (3) 3.

5x20 screws (2) 3x20 screws (2) Hexagonal (hex) wrenches (2) Adhesive pads (4) Alcohol prep pads APPLICATIONS The MS-8's extensive crossover capabilities allow you to configure its eight channels in a number of different ways, depending on the type and number of speakers in your vehicle's audio system. JBL recommends that you carefully plan your system and its connections before beginning installation. www.jbl.com 4 CONNeCTiONs 25A fuse Mic connection Remote out connection Remote in connection +12V connection GND connection Line input connections Hi Level input REMOVE FOR SOFTWARE UPDATE Speaker output connections Line output connections Aux input connections Reset button Display connection Power LED Update connection POWER IMPORTANT: Perform the power connections in the following order.

1. Gnd: Connect this terminal to a paint-free location on the vehicle chassis. IMPORTANT: Use at least 12-gauge wire for this connection. Chassis ground (unpainted) 5 www.jbl.com English CONNeCTiONs 2. +12V: Connect this terminal to the vehicle battery's positive (+) terminal. Insert a 25A fuse in series on the +12V wire no further than 18 inches (46cm) from the battery terminal. IMPORTANT: Use at least 12-gauge wire for this connection. + - 1 x 25A 25A fuse within 18" of battery terminal Cable from MS-8 +12V terminal Use a grommet through the firewall 3.

Rem Out: Connect this terminal to the remote turn-on terminals of all amplifiers in the system. The output is +12V DC, 1A. IMPORTANT:TheMS-8MUSTcontroltheturn-onsignalofalltheotheramplifiers that follow the MS-8 in the signal path. Ifyoursystemincludesafactory-installedoutboardamplifier,theturn-onsignal maybeavailableattheamplifier.Ifyourfactoryamplifierhasaturn-onwire,cutit and connect the head-unit side of the wire to the MS-8's Rem In terminal and the amplifiersideofthewiretotheMS-8'sRemOutterminal. This arrangement will allow the factory stereo to turn the MS-8 on whenever the stereoisturnedonandwillallowtheMS-8toturnthefactoryamplifieronandoff. It will also help to eliminate audible clicks and pops when the system turns on and off. To turn-on terminals of all system amplifiers www.jbl.com 6 CONNeCTiONs Rem In: Connect this terminal to the remote turn-on output of the system's source unit, if the source unit has a remote turn-on output.

Alternately, you can connect this terminal to the vehicle's accessory (ACC) power circuit. Any voltage over +4V DC at this terminal will trigger the MS-8 to turn on. NOTE: See Step 3 for more details about connecting the Rem In terminal to a factory-installed stereo system. To head unit remote turn-on or vehicle ACC terminal AUDIO INPUTS Many factory-installed systems include on-board equalization and crossovers that make simple connection of aftermarket products difficult. The MS-8 includes the signal-summing circuitry, signalconditioning EQ and time-correction processing that are necessary to reconstruct a flat, full-range, two-channel signal when you use the MS-8 with factory-installed equipment.

Aftermarket head units with line outputs provide a flat, full-range, two-channel signal on their front line outputs, so you need to connect only those channels to the MS-8. 7 www.jbl.com English CONNeCTiONs Connecting an aftermarket head unit If you're using the MS-8 with an aftermarket head unit that has RCA-type outputs, connect the head unit's front left and front right outputs to the MS-8's line inputs 1 and 2 only. Do NOT connect any other head-unit output signals to the MS-8's line inputs 3 8.

During the calibration/setup process, the MS-8 will "normalize" the input signals and derive as many output signals as your speaker system requires. IMPORTANT: Do not connect the head unit directly to any amplifiers, including a subwoofer amplifier. The MS-8's signal processing takes nearly 8ms, so any signals connected directly to a head-unit will be ahead of the signals leaving the MS-8 by about 8ms. This difference will cause them to be out of sync with the signals that pass through the MS-8. The MS-8 must generate all the signals that are sent to all of the system's speakers! Aftermarket head unit Front line out Rear line out Subwoofer line out DO NOT USE RCA audio cables MS-8 main unit Line inputs 1 and 2 www.jbl.com 8 CONNeCTiONs Connecting a factory radio/head unit If you will be connecting the MS-8 to a factory-installed stereo or a factory-installed amplifier (often located in the vehicle's trunk), connect each of your factory front-speaker and subwoofer outputs to one of the MS-8's Hi Level inputs. Be sure to connect the outputs for all speakers that are part of the vehicle's front left and front right speakers. You can connect the factory front speaker outputs to any MS-8 Hi Level inputs, but factory stereo or amplifier subwoofer outputs MUST be connected ONLY to the MS-8's channel 7 and/or 8 inputs. During the calibration/ setup process, the MS-8 will "normalize" the input signals and derive as many output signals as your speaker system requires.

Factory stereo wiring harness Front left Front right Center Side left Side right Rear right Rear left Subwoofer* + + Connect DO NOT USE + Connect + + Ch 3 Ch 2 Ch 1 Ch 4 Ch 5 Ch 6 Ch 7 + Ch 8 *NOTE: Subwoofers MUST be connected to MS-8 input 7 and/or input 8 MS-8 main unit NOTE: The above illustration shows only a general connection example and does not represent any particular vehicle audio system.

Insert the included Hi Level input wiring harness into the MS-8's Hi-Level-input connector until it locks into place. IMPORTANT: The MS-8's Hi Level input wiring harness has gray and white wires. Each channel has a white (positive or "+") wire and a gray (negative or "") wire. Each wire is labeled with its channel number and polarity, and is pre-stripped for easy connection to your factory radio's speaker outputs. Make sure that the (+) and ( ) wires do not touch each other. Touching wires can cause a short circuit that can damage the MS-8 or your head unit. To ensure proper polarity, connect each factory-radio positive (+) terminal to the respective "+" terminal on the MS-8. Connect the negative () terminals in a similar way. 9 www.

jbl.com English CONNeCTiONs Aux input: If you will be using a portable music player or CD player as an auxiliary audio-source unit, connect its line or headphone output to the MS-8's Aux input using a cable that terminates in stereo RCA audio connections. You can switch between the MS-8's Head Unit inputs and Aux input in the MS-8's Input Selection menu. See Main Menu, on page 35. Aux input To headphone output www.

jbl.com 10 CONNeCTiONs AUDIO OUTPUTS Configurations You can configure the MS-8's eight outputs in a variety of ways, depending on the speakers that are installed in your vehicle. You can configure the MS-8 for a system with one-way (full-range), two-way or three-way front speakers, a one-way or two-way center speaker, side speakers, rear speakers and one or two subwoofers. Remember, however, that the total number of available channels is eight, so any combination of front, center, side, rear and subwoofer channels cannot total more than eight. For example, if you are allocating six channels for a pair of tri-amped, three-way front speakers, there will be only two remaining channels, which will not accommodate a pair of rear speakers and a subwoofer.

If your system will include more than eight channels, use additional separate amplifiers (connected to the MS-8's line outputs) for the additional channels. For example, if you want to build a 7.1-channel system that includes bi-amped or tri-amped front speakers, use the MS-8 to generate the 7.1-channel outputs (seven full-range and one subwoofer). Connect the MS-8's front line outputs to the inputs of an additional crossover (or amplifier containing an additional crossover) that will provide the separate channels required to drive the front midbass, midrange and/or tweeters separately. Use the Configuration Chart below to record which of your system's speakers you have connected to which of the MS-8's outputs. Keeping this record will simplify channel assignment during the setup procedure. See Main Menu, on page 35. Output # 1 2 3 4 5 6 7 8 Channel / Speaker Connected Output Connector Used RCA RCA RCA RCA RCA RCA RCA RCA SPEAKER SPEAKER SPEAKER SPEAKER SPEAKER SPEAKER SPEAKER SPEAKER 11 www.jbl.

com English CONNeCTiONs Speaker Outputs If you'll use the MS-8's built-in power amplifiers to drive your system's speakers, connect the speakers to the MS-8's speaker outputs. Insert the included speaker-output wiring harness into the MS-8's speaker output until it locks into place. See Main Menu, on page 35. IMPORTANT: The MS-8's speaker-output wiring harness's wires have clear insulation. Each channel has a copper (positive or "+") conductor and a silver (negative or "") cE After downloading a firmware upgrade into your PC, remove the sticker and connect the Update port to a USB port on your PC. Follow the directions that accompany the upgraded firmware to upload the new firmware from your PC to the MS-8. www.jbl.com 16 iNsTALLATiON Installation warning and tips · Always wear protective eyewear when using tools. · Before beginning the installation, disconnect the negative () lead from the vehicle's battery.

· Check clearances on both sides of a potential mounting surface before you drill any holes or install any screws. Remember that the screws can extend behind the surface. · At the installation sites, locate and make a note of any fuel lines, hydraulic brake lines, vacuum lines and electrical wiring. Use extreme caution when cutting or drilling in and around these areas. · Before drilling or cutting holes, use a utility knife to remove unwanted fabric or vinyl to keep the material from snagging in a drill bit.

· When routing cables, keep input-signal cables away from power cables and speaker wires. · When making connections, make certain that they are secure and properly insulated. CHOOSING A LOCATION FOR THE MAIN UNIT Cables and wiring · Before mounting the main unit, plan your system's wiring to ensure that all thwww.jbl.com iNsTALLATiON a) Insert the mounting plate, rotate it 180°, and tighten the hex set screw as shown below.

b) Wipe the installation-site surface and the exposed mounting plate with one of the enclosed alcohol pads. Allow both to dry. c) Remove the protective tape from one side of one of the enclosed adhesive pads, and press the pad against the mounting plate. d) Remove the remaining protective tape, and press and hold the display unit to its site for five seconds. Mounting with adhesive Mounting with screws Set screw Set screw To install the display unit with mounting screws 1. Place the mounting plate at the installation site and rotate it so that its arrow will point toward the hex set screw at the back of the base after it's installed. 2. Holding the mounting plate in position, fasten it to the surface with three enclosed mounting screws. 3. Place the display unit on the mounting plate (180° from its final position).

Rotate it a half-turn to the final position. Tighten the hex set screw at the back of the base. 4. Connect the supplied cable to the display unit. If you haven't already done so, route the cable to the main unit and plug it into the main unit's display connector. www.jbl.com 20 iNsTALLATiON Though you can leave the MS-8 RF remote control unmounted, JBL supplies two mounting provisions to secure the remote, making it safe and convenient to operate. Since the remote operates via radio frequency, it is not necessary to aim the remote while using it. NOTE: You can also mount the remote to a convenient surface using a Velcro® strip (not supplied), which allows you to remove the remote to change the battery.

Before mounting the remote Remove its battery-protection strip by pulling it out in the direction indicated by the arrow. Pull strip out of remote 21 www.jbl.com iNsTALLATiON MOUNTING THE REMOTE CONTROL Surface mounting 1. Find a suitable mounting location with a flat surface that's large enough for the remote.

(Note: The remote control is held in the cup by a magnet, so you can mount the cup on a vertical surface if you want.

) 2. Ensure that no hazards or wiring are underneath the mounting surface. Remote control Finger cutout 3. Remove the remote from the mounting cup. Observe the position of the mounting cup's finger cutout, as shown in the illustration. 4. Use two (2) of the supplied screws or some double-stick tape (not supplied) to attach the mounting cup and trim ring to a flat surface, as shown in the illustration. Mounting cup Trim ring Flush mounting NOTE: Flush mounting is a custom-installation procedure that may require additional materials that are not supplied with the MS-8. 1. Find a suitable location with a flat surface that's large enough for the remote and has 1/2" (13mm) of clearance underneath. 2. Ensure that no hazards or wiring are underneath the mounting surface. 3. Mark the cutout opening using the inside of the trim ring as a template.

4. Cut the mounting surface just large enough to allow the mounting cup to sit flush against the surface. 5. Remove the remote from the mounting cup. Observe the position of the mounting cup's finger cutout, as shown in the illustration. 6. Secure the mounting cup in place using glue or double-stick tape. Replacing the battery in the remote control 1. Remove the two screws in the bottom of the remote. 2. Remove the remote's bottom cover. 3. Use a pencil or similar object to push the battery out of its holder. 4. Replace the battery with a new CR2032 3V battery.

NOTE: Insert the battery into the holder with its positive (+) pole facing up. 5. Replace the remote's bottom cover and screws. www.jbl. com 22 Remote control Mounting cup UsiNG The reMOTe CONTrOL Volume Down button Volume Up button Select button Up/Down navigation buttons Left/Right navigation buttons Back button Mute button Volume Up and Down buttons: Pressing either of these buttons at any time (except during the setup/calibration process) will display the MS-8's System Volume screen, allowing you to change the audio volume. The volume range is between 80dB and 0dB. Navigation and select buttons: Use the four navigation buttons (Up, Down, Left and Right) to navigate through the MS-8's various setup and operation screens. The Select button selects or otherwise changes the state of a highlighted item. Back/menu button: Momentarily pressing this button causes the display to revert to the next-higher menu. Holding the button reverts to your default screen (either the Main Menu or Audio Controls screen) from whatever screen is active at the time. See Default Screen, on page 40. Mute button: Press to mute the sound; press again to restore the sound. (Pressing either the Volume Up or Volume Down button also restores the sound.) 23 www.

jbl.com CALiBrATiON/seTUP DISTRACTION WARNING: DO NOT SET UP YOUR MS-8 WHILE DRIVING. We recommend performing these setup procedures while parked at home or after pulling off the road into apositionthatyouareabsolutelysurepresentsnorisk.Alwaysobeyalltrafficlawswhile driving. Before you begin IMPORTANT! The MS-8 will not pass an audio signal through to its outputs until youhaveconfigureditaccordingtothesetupproceduredescribedbelow. The setup procedure consists of four main parts: Language selection: You will select the language that the MS-8 will use on the display. See , on page 25. Input setup: The MS-8 will use the included setup CD to analyze and condition the input signal for further processing. See , on page 25. Output setup: You will configure the crossover settings and identify the output channels. See , on page 26. Acoustic calibration: The MS-8 will automatically equalize the signal sent to the loudspeakers and optimize their response for up to four seating positions using the included binaural microphone headset. See , on page 32. You must complete all four of these steps in the above 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 your completed Configuration Chart (see page 11) handy. It will make configuring the outputs easy. Start the MS-8 by turning on the vehicle radio or head unit (or turning the vehicle's key to the ACC position if you've connected the Rem In terminal to ACC power). Use the remote control's Up and Down navigation buttons to highlight items on the display. Press the remote's Select button to select a highlighted item. Use the remote's Left and Right navigation buttons to make changes in items on the display. Select button Up/Down navigation buttons Left/Right navigation buttons Back button www.jbl.com 24 CALiBrATiON/seTUP LANGUAGE SELECTION The first time you power up the MS-8, the Language screen will appear on the display. This screen determines the language the MS-8 will use to display all of its setup, calibration and operation menus. When this screen appears, choose a language. The following languages are available: English, Spanish, French, Portuguese, German, Dutch, Italian, Danish, Norwegian, Swedish and Finnish. NOTE: After the setup and calibration process, you can change the language using the Main Menu's System Settings option. See System Settings Menu, on page 40. INPUT SETUP Once you have chosen a language, the MS-8 will display Input Setup.

IMPORTANT: You must use the calibration CD provided with the MS-8 for this step. If your systemdoesnothaveaCDplayer,youcanconverttheCDtoa.WAVfileforusewitha portablemediaplayerorotheraudiosource.ThefileformatyouuseMUSTbelossless, or the calibration process will not be accurate. ·Ifyouareusinganaftermarketheadunitand have connected the head unit's front left output and right line outputs to the MS-8's line inputs 1 and 2, you may select Skip Input Setup and go directly to Output Setup, on page 26. ·Ifyouareusingafactory-installedstereothat you connected to the MS-8's Hi Level input or line inputs, continue with steps 13, below. 1. Set the head unit's bass, treble, balance and fader controls to their "flat" or center positions. 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 owner's manual for instructions on how to do it. 2. Insert the calibration CD supplied with the MS-8 into the source unit, press the source unit's "Play" button and select Continue. While the CD is playing, the MS-8 will analyze the input signal to ensure that it is receiving the correct signal and that both right and left signals are present. The MS-8's display will show Signal, Level and Balance. An OK must appear next to each one before you can continue. · If None appears next to Signal, be sure that the head unit is outputting a signal (increase the volume control) and/or check the MS-8's input connections. · If Noisy appears next to Signal, check to see that the head unit's volume control isn't all the way up; turn off the car's engine (if the car is running), but be sure not to turn the key past ACC.

· If High or Low appears next to Level, slowly adjust the head unit's volume control until OK appears. · If Left or Right appears next to Balance, slowly adjust the head unit's balance control until OK appears.

3. Once OK, OK, OK appear on the display, stop making adjustments to the head unit, and select Continue while the CD is playing. NOTE: Do NOT make any other adjustments to the head unit during the entire input setup procedure. The display will read Acquiring while the MS-8 analyzes and corrects the input signal. Once the procedure is complete (it might take 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. 25 www.jbl.com CALiBrATiON/seTUP OUTPUT SETUP Next, the MS-8 will display Xover Setup. During Xover Setup, you must tell the MS-8 which speakers are connected to the system, and you must select the crossover characteristics for all of the system's speakers. Referring to the Configuration Chart that you filled out when you connected the MS-8 will make this process easy.

During Xover Setup and Channel Selection, you must enter the information according to the specific sequence that the MS-8's display presents. A note about crossovers In general, your car stereo's small speakers are designed to reproduce high frequencies, while its large speakers are designed to reproduce low frequencies. Larger speakers do a poor job of reproducing high frequencies, and smaller speakers are not able to reproduce low frequencies and may even be damaged by them. A crossover is a filter or combination of filters that limit the sounds that are sent to a particular speaker so that it receives only the frequencies that it can safely reproduce. The MS-8 features a sophisticated crossover system that you can set to get the best performance from whatever type of speaker system is installed in your vehicle. In the MS-8, a crossover (or filter, abbreviated "Xover" on the MS-8 display) frequency refers to the frequency at which the sounds sent to that speaker will begin to be attenuated. The crossover filter slope refers to the rate at which the sounds will be attenuated. The MS-8's crossover contains two types of filters: · High-pass filters, which send the frequencies above the crossover frequency to a speaker while attenuating the frequencies below the crossover frequency. This type of filter is used to prevent lower frequencies from reaching smaller speakers. · Low-pass filters, which send the frequencies below the crossover frequency to a speaker while attenuating the frequencies above the crossover frequency.

This type of filter is used to prevent higher frequencies from reaching larger speakers. A high-pass filter can be combined with a low-pass filter to create a third type of filter, called a band-pass filter. A band-pass filter sends the band of frequencies between the high-pass and low-pass crossover frequencies to a speaker while attenuating the frequencies below the high-pass crossover frequency and above the low-pass crossover frequency. This type of filter is used to prevent lower and higher frequencies from reaching midrange speakers in three-way speaker systems. The most important thing that determines your selection of an MS-8 crossover filter'sfrequencyandslopeismakingsurethatyoursystem'ssmallspeakers don'treceivetoomuchbass,whichcancausethesoundtheyreproducetobe distorted and can even damage them.

For example, an 80Hz high-pass filter will remove frequencies below 80Hz from the signal that the MS-8 sends to a smaller speaker. However, it may not completely remove those frequencies; a 6dB per octave filter slope will still allow the speaker to receive 1/4 of the signal's power at 40Hz, while a 24dB/octave filter slope will allow the speaker to receive almost no power at 40Hz and will keep the speaker from receiving too much bass. We recommend using 24dB/octave slopes between subwoofers and midrange speakers and between midrange speakers and tweeters. www.jbl.

com 26 CALiBrATiON/seTUP If you make a mistake If you make a mistake and need to reenter Output Setup information, you must abort the Xover Setup process and start it again. To abort the process: 1. Hold the remote's Back/Menu button until the Main Menu screen appears. 2. Select Calibration/Setup; then select Input/Output Setup. 3. When the Warning Message screen appears, select Continue. 4. When the Input Setup screen appears, select Skip Input Setup. 5.

The MS-8 will display the Xover Setup, Sub screen. Continue below. Subwoofer 1. Select Sub (for subwoofer). 2. The MS-8 will then display None, 1, 2. @@Your audio system's subwoofer configuration determines which option you should select. For example, if you have one subwoofer being powered by one amplifier channel (either an outboard amplifier or an MS-8 amplifier channel), select 1. If you have two subwoofers, each powered by its own amplifier channel, connected to separate MS-8 outputs, select 2. If you have two subwoofers, each powered by its own amplifier, but those amplifier channels are connected to a single MS-8 output, select 1.

3. If you've chosen None, skip to , on page 28. 4. If you've chosen 1 or 2, the display will then read Subsonic Filter. This screen enables you to choose the subsonic (that is, infrasonic) high-pass filter for the system's subwoofer(s).

Use the remote's Left and Right navigation buttons to display a frequency between 20Hz and 50Hz, and press the Select button to select it. If you're not sure which frequency to choose, we recommend using 20Hz. 5. The MS-8 will then display Subsonic Slope. This screen enables you to determine the subsonic filter's attenuation rate.

@@@@6. The MS-8 will then display Sub/Front Xover. This screen enables you to determine the crossover frequency between the subwoofer and the front left and right speakers. You should determine this frequency by the amount of bass your left/right speakers can safely produce, considering the amount of power that will be applied to them. @@@@7. The MS-8 will then display Sub/Front Slope. @@@@@@@@The MS-8 will then display Xover Setup > Sub, Front. Select Front. 2. @@@@@@@@@@@3.

If your audio system does not have a subwoofer, the MS-8 will then display Front Hi Pass. This screen enables you to choose the subsonic high-pass filter for the system's speakers. Use the Left and Right navigation buttons to display a frequency between 20Hz and 100Hz, and press the Select button to select it. If you're not sure which frequency to choose, we recommend using 20Hz. Alternately, you may want to use this setting to prevent your front speakers from receiving too much bass, which can cause distortion at higher listening levels. @@@@4. The MS-8 will then display Front Hi Pass Slope. @@@@@5. @@@@@@@@b) The MS-8 will then display Front Lo/Hi Slope. @@@@@7.
@@@@@@@b) The MS-8 will then display Front Lo/Mid Slope. @@@@@c) The MS-8 will then display Front Mid/Hi Xover.

@@@@@@@d) The MS-8 will then display Front Mid/Hi Slope. This screen enables you to choose the attenuation rate of the filter between the midrange and tweeter. @@@@If you're using separate tweeters (as discussed in Step 7c, above), we recommend using 24dB/octave.

Center Speaker 1. The MS-8 will then display Xover Setup > Sub , Front , Center. Select Center. 2. The MS-8 will then display Center, with the options None, 1 way, 2 way.

Use the Up and Down navigation buttons to highlight one of these options, and press the Select button to select it. The configuration of your system's center speaker determines your choice. For example: If your center speaker system consists of a coaxial speaker or component with its own passive crossover connected to one of the MS-8's outputs (either its speaker outputs or its line outputs connected to an outboard power amplifier), choose 1 way. If your center speaker consists of a component system where the tweeter and the midrange will each be connected to separate MS-8 output channels, choose 2 way. 29 www.jbl.com CALiBrATiON/seTUP NOTE: The available center-speaker, side-speaker and rear-speaker options will depend on the number of MS-8 channels that are available after you have set up the subwoofer and front speakers. For example, if you are using two subwoofer channels and three-way front speakers, then all eight of MS-8's channels will have been allocated, and the only option that will be displayed for the center speaker (as well as the side and rear speakers) will be None. If you have selected a single subwoofer channel and three-way front speakers, seven of MS-8's eight channels will have been allocated, and the options displayed for the center speaker will be None and 1. 3.

The MS-8 will then display Center Hi Pass. This screen enables you to choose the high-pass filter for the center speaker. @@@@4. The MS-8 will then display Center Hi Pass Slope. This screen enables you to choose the subsonic filter's attenuation rate. Use the Up and Down navigation buttons to highlight a rate, and press the Select button to select it. If you're not sure which rate to choose, we recommend using 24dB/octave. 5. If in Step 2 you selected 2 way: a) The MS-8 will display Center Lo/Hi Xover. This screen enables you to choose the crossover frequency between the center midrange and tweeter. @@@@b) The MS-8 will then display Center Lo/Hi Slope. @@@@@@Side speakers (side or rear speakers) NOTE: If your system has side AND rear speakers, configure the side speakers in this section (Side) and the rear speakers in the next section (Rear). @@1. The MS-8 will then display Xover Setup > Sub, Front, Center, Side. Select Side.

2. The MS-8 will then display Side, with the options None and 1 way. @@3. The MS-8 will then display Side Hi Pass. @@@@We recommend using at least 100Hz.

4. The MS-8 will then display Side Hi Pass Slope. @@@@@@The MS-8 will then display Rear, with the options None and 1 way. @@@@@@3. The MS-8 will then display Rear Hi Pass. @@@@We recommend using at least 100Hz. 4. The MS-8 will then display Rear Hi Pass Slope. This screen enables you to choose the filter's attenuation rate. @@We recommend using 24dB/octave.

The MS-8 will then display the Xover Setup menu, which lists all the speakers you have set up. If you need to make corrections, select the appropriate speaker location from the menu, and reenter the information as well as all of the information for the speakers that follow. When you are finished with all of the output-setup settings, select Done. Channel selection The MS-8 will then display the Channel Selection menu. This menu enables you to assign the outputs that you configured in all the Xover Setup menus to specific output channels, by number. This menu will display only valid choices (according to your entries in the Xover Setup menus). Select the output channel based on the connections that you documented in the Configuration Chart you filled out on page 11, in the audio outputs section: 1. If a speaker or amplifier is connected to the MS-8's Channel 1, select Channel 1 from the Channel Selection menu. 2. The MS-8 will display the Channel 1 menu, which will list the available choices based on the entries that you made in Xover Setup.

The following choices may be available: FL Front left (full-range speaker) FL Hi Front left tweeter (or midrange/tweeter combination with passive crossover) FL Mid Front left midrange FL Lo Front left low (woofer, midbass or midrange) FR Front right (full-range speaker) FR Hi Front right tweeter (or midrange/tweeter combination with passive crossover) FR Mid Front right midrange FR Lo Front right low (woofer, midbass or midrange) Sub 1 Subwoofer 1 Sub 2 Subwoofer 2 Ctr Center (full-range) Ctr Hi Center tweeter Ctr Lo Center low (woofer or midrange) SL Side left SR Side right RL Rear left RR Rear right 31 www.jbl.com CALiBrATiON/seTUP 3. If a speaker or amplifier is connected to the MS-8's Channel 2, select Channel 2 from the Channel Selection menu and repeat the procedure from Step 2. 4.

Repeat the procedure for each channel to which a speaker or amplifier is connected. Skip channels that are not connected to speakers or additional amplifiers. If you make a mistake, select the channel that you want to correct, and then enter the correct selection. The MS-8 keeps track of the number of channels that you have used and will not allow duplicate entries. Check your entries carefully against the Configuration Chart you filled out on page 11. Once you're satisfied that everything is correct, select Done. Output diagnostics The MS-8 will then display the Output Diagnostics menu. We provide this screen to help you confirm that your connections and channel assignments are correct before you proceed to the next step. Select any of the displayed speaker locations to hear pink noise through all of the channels dedicated to that location. For example, if you've set up a threeway front system, selecting Front Right will cause the MS-8 to send test noise to the three channels you've designated as "Front Right" (hi, mid and lo). Listen carefully as you move through the speaker locations. If you've made a mistake (that is, if the noise is coming from a speaker other than the one you've selected), you may be able to correct the mistake by reconnecting the RCA or speaker-wire connectors on the MS-8's output. If you can't correct the mistake by changing connections, correct your Configuration Chart and hold the remote's Back/Menu button to return to the Xover Setup menu (see the If you make a mistake sidebar on page 27). You will need to enter the all of the correct information again from the beginning of the section. Once you've determined that all connections and selections are correct, select Done in the Output Diagnostics menu.

The MS-8 will display the Speaker Conf iguration Complete screen.

When you're ready to begin the acoustic calibration procedure, select Continue. ACOUSTIC CALIBRATION The last step in setting up the MS-8 is making acoustic measurements that will help the MS-8 optimize the sound at the driver's seating position. (You may also make acoustic measurements to optimize the sound at three additional seats.) To get the best results for you and a single passenger, make measurements in the driver's and front passenger's seats. The MS-8 will display Error > Please Connect Microphone. Connect the included binaural microphone headset to the MS-8's Mic input jack. (The MS-8 will not continue the calibration process until you connect the microphone.) Carefully route the microphone's cable to the driver's seat, leaving enough excess wire to accommodate the movement of your head. Sit in the driver's seat and place the headset mic on your head.

Be sure that the left and right microphones are on the correct ears! Select Continue. The MS-8 will display Set Volume > -20dB. www.jbl.com 32 CALiBrATiON/seTUP · If the MS-8's internal amplifier is set to drive the front speakers, leave the volume set at 20dB.

· If an external, higher-powered amplifier is driving the front speakers, use the remote's Volume Down button to set the volume to a level lower than 20dB. In either case, the test-signal 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. See Volume Up and Volume Down buttons, on page 35. After setting the volume, press the Select button.

The MS-8 will display Driver's Seat > Acoustic Measurement 1of4 > Look Forward 1. Make sure that you have positioned the binaural microphone headset over your ears and that you are sitting in the driver's seat. Look straight forward. 2. Select Go. The MS-8 will play a series of test signals. 3. Hold your head still until the test signals stop and the next screen (measurement 2of4 > Look Forward) appears. 4. Select Go and continue looking forward while the MS-8 plays the second series of test signals.

5. Hold your head still until the test signals stop. NOTE: The subwoofer test signal in measurements 2, 3 and 4 lasts a little longer than the other test signals, so be sure to keep your head still until it has finished and the next screen (measurement 3of4 > Look Driver Side Mirror) appears. 6. Turn your head toward the driver's side-view mirror for the third measurement and select Go. 7. Hold your head still until the test signals stop and the next screen (measurement 4of4 > Look Passenger Side Mirror) appears. 8. Turn your head toward the passenger's side-view mirror for the final measurement and select Go. 9. Hold this position until the test signals stop and the MS-8 displays Driver's Seat, with several options: Next seating position: Selecting this option will perform acoustic calibration for the front passenger seat. NOTE: To calibrate for the front passenger seat, you'll need to sit in the front passenger seat while the MS-8 makes the measurements. If you wish to calibrate for the passenger's seat, move to that seat before starting the next section. After the front passenger-seat calibration is complete, "Next seating position" will refer to the rear driver-side seat, and then the rear passenger-side seat. To calibrate for those seating positions, you must move to those seats before beginning calibration.

"Next seating position" repeats steps 19 for up to three additional seating positions. When you have completed optimizing the sound for all positions, select Done. 33 www.jbl.com CALiBrATiON/seTUP Remeasure seating position: Selecting this option remeasures the seating position that has just been measured. You can select this option if you think you've made a mistake, if loud noises were present during any of the testsignal sweeps, if the sweeps were much louder than someone speaking at a normal volume or if you want to remeasure the seating position for any other reason. Quit: Selecting this option aborts the calibration procedure and returns to the beginning of acoustic calibration. Done: Selecting this option will complete the calibration process if you do not wish to measure additional seating positions. The MS-8 will display Acoustic Measurement Complete > Please wait while it calibrates the system. When the calibration is complete, the MS-8 will display Main Menu. Disconnect the microphone, insert your favorite CD and have a listen. Additional adjustments are available in the Main Menu (see Main Menu, on page 35). www.jbl.com 34 UsiNG The Ms-8 VOLUME UP AND DOWN BUTTONS (on the remote control) Pressing either of these buttons at any time (except during the setup/calibration process) will display the MS-8's System Volume screen, allowing you to change the audio volume.

The volume range is between 80dB and 0dB. For the best results, leave the head unit's volume control set at the level that produced the OK, OK, OK readings on the display during the setup process (see Input Setup, on page 25), and use the MS-8's Volume Up and Volume Down buttons to control the system's volume. You may also use the head unit's volume control to control the system's volume. MAIN MENU When you complete the calibration process, the MS-8 will display the Main Menu screen. From MS-8's Main Menu, you can navigate to all of the MS-8's functions and adjustments. IMPORTANT:IfyoudecidenottoinstalltheMS-8'sdisplaypermanently,the Main Menu and all of the MS-8's adjustments will not be available. In this case,settheMS-8'sSystemVolumeto6dB(seeVolume Up and Volume Down buttons,onthispage),andunplugthedisplayunit.Besuretostore thedisplayunit,cableandremotecontrolinasafeplaceincaseyoumay wanttoreconfigurethesystemormakeotheradjustments. The Main Menu gives you the following selections: Input Selection: This screen lets you choose a connected head unit or the Aux input as the active source of audio. See Input Selection menu, on page 36.

Audio Controls: This screen lets you adjust the system level, tone controls and 31band graphic EQ, and engage/defeat the MS-8's Logic 7 processing, digital signal processing (time correction and equalization) and seating-position optimization. The MS-8 also provides an option to reset all controls to their factory defaults. See Audio Controls menu, on page 36. Favorites: This option lets you store and recall currently active audio settings (you can store and recall up to five different combinations of settings). See Favorites menu, on page 39.

35 www.jbl.com UsiNG The Ms-8 Calibration/Setup: This selection performs the calibration procedures as documented in this manual. See Calibration/Setup, on page 24.

NOTE: If you would like to recalibrate the acoustic performance of the system, you may enter its Calibration/Setup section, choose Acoustic Calibration and re-tune the system without repeating the input-setup, xover-setup and channel-selection procedures.

System Settings: This selection accesses the MS-8's operational and display settings. See System Settings Menu, on page 40. INPUT SELECTION MENU This menu lets you select between the MS-8's Head Unit input (either the line-input connections or Hi Level input connections) and the Aux input connections. The word Active indicates which input is currently active. AUDIO CONTROLS MENU This menu provides control of all of the MS-8's audio adjustments. NOTE: Pressing the Select button while making any adjustment returns the adjustment to the center position. System Levels: This screen lets you adjust the levels of the Aux input and the system's speakers. Use the Left and Right navigation buttons to vary the levels. (NOTE: If the system has both side and rear speakers, the Fader control will adjust between the front speakers and both the side and rear speakers in tandem. It is not possible to adjust the balance between the side and rear speakers.

) www.jbl.com 36 UsiNG The Ms-8 Note for systems that include a center-channel speaker: Logic 7 processing steers all mono information to the center channel. At first, the sound may seem wrong if you're not used to listening with the Logic 7 system. However, after listening for an extended period, you'll find vocal and instrument placement with Logic 7 enabled and the centerchannel level in the center position to be natural sounding and consistent. If you listen to a lot of news, sports or talk radio, you may want to attenuate the center channel you can even save a Favorite setting with such an adjustment. In any case, you can always set the level of the center channel according to your preference. Tone Control: This selection lets you adjust the system's overall tone quality. The bass control and treble control are shelving-type controls, with ±10dB of boost and cut at 20Hz and 20kHz, respectively. The midrange control is a peak-and-dip type with a Q of 0.

26 that offers ±10dB of boost and cut at 650Hz. Use the Left and Right navigation buttons to vary the levels. Graphic EQ: The MS-8's graphic equalizer is a sophisticated tone control that divides the audio spectrum into 31 bands, each approximately a third of an octave wide. This format allows you to fine-tune the system's sound with extreme precision. Each band allows ±10dB of boost or cut at the band's center frequency.

We have designed the equalizer's circuitry to minimize destructive interaction between adjacent bands, giving you precise control with superior sound quality. Indicator arrow Active frequency Amount of boost or cut 37 www.jbl.com UsiNG The Ms-8 The arrow indicates the selected band; the band's center frequency is indicated on the left side of the screen; the amount of boost or cut that you apply is indicated on the right side of the screen. Use the Left and Right navigation buttons to select the frequency band you want to adjust, and use the Up and Down navigation buttons to make the adjustments.

Each press of an Up or Down button changes the level by 0.5dB. As you apply boost or cut, the selected band will increase or decrease in size on the screen to indicate the relative change in level. IMPORTANT: The MS-8's digital volume and equalization work differently than standard analog controls. Boosting the MS-8's subwoofer-level control,bass-tonecontrolandthelowbassbandsinthe31-bandEQto theirnear-maximum,andsettingtheMS-8'sSystemVolumecontrolto 0dB,willcausesevereclipping(distortedsound)thatmaydamageyour system's loudspeakers. Logic 7: Logic 7 technology creates an ideal 5.1-channel or 7.1-channel surround-sound listening environment from two-channel source material. Logic 7 processing widens the stereo soundstage and increases the sense of sonic envelopment, making the vehicle's interior boundaries seem to disappear. The music sounds as though it exists on its own, rather than coming from speakers.

We have specifically tuned the MS-8's Logic 7 for use in vehicles. It includes processing for the center-channel speaker (if one is present in the vehicle's system). You can turn Logic 7 on and off by pressing the Select button while Logic 7 is highlighted in the Audio Controls menu. Processing: The Audio Controls Processing option activates and defeats the MS-8's digital time-correction and acoustic-equalization circuitry. Using the Select button to switch between Active and Defeat will let you hear how the MS-8's advanced digital signal processing dramatically improves your system's performance. Seat: You can optimize the sound for any of the seating positions that you measured during the setup process. Pressing the Select button cycles through the available positions: Driver, Passenger, Front, Rear, All. "Front" or "Rear" optimizes both front seats or both rear seats as the preferred listening position. "All" is a general setting that will produce good sound for any seating position. www.

jbl.com 38 UsiNG The Ms-8 Reset to default: This setting restores all of the audio controls to their default settings. The default settings are: System Levels: All controls centered Tone Control: Flat (all controls centered) GraphicEQ: Flat (all controls centered) Logic 7: On Processing: Active Seat: Driver FAVORITES MENU The MS-8 provides five Favorites positions that let you store the system's currently active audio settings. The system stores all audio and input selection settings in a Favorites setting (except the Aux volume setting). This feature lets you tailor the sound for a certain type of music or a certain driver, and save and recall the settings at any time.

To store a Favorite Select "Save Favorites." The Save Favorites screen will appear. Use the Up and Down navigation buttons to select the Favorites position, then press the Select button to save the current settings there. An asterisk (*) will appear next to the selection to indicate into which Favorites position you have stored the current configuration. To recall a stored Favorite Select Recall Favorites.

The Recall Favorites screen will appear (see above). Use the Up and Down navigation buttons to select the Favorites position, then press the Select button to activate it. The word Active will appear to the right of the active setting's number. This selection will remain until you choose another Favorites setting or you adjust any of the audio settings. 39 www.jbl.com UsiNG The Ms-8 SYSTEM SETTINGS MENU This menu lets you adjust the MS-8's various system settings: Turn off delay: This setting lets you select a delay time for the MS-8 to turn additional amplifiers off via its Remote Out terminal when the MS-8 goes into its standby mode.

The options are zero seconds (no delay), two seconds or five seconds. The factory default is two seconds. Brightness: This setting lets you adjust the display's brightness.

Press the Select button; then use the Left and Right navigation buttons to change the brightness. When you're finished, press the Select or Back button to return to the System Settings screen. Contrast: This screen lets you adjust the display's contrast. Press the Select button; then use the Left and Right navigation buttons to change the contrast. When you're finished, press the Select or Back button to return to the System Settings screen. Default Screen: This setting lets you choose which screen the MS-8 will default to when you turn it on the Main Menu screen or the Audio Controls screen. Language: This screen lets you select the MS-8's screen language. The following languages are available: English, Spanish, French, Portuguese, German, Dutch, Italian, Danish, Norwegian, Swedish and Finnish. About: This screen displays the firmware versions loaded in your MS-8. Restore Factory Defaults: This option erases ALL of the MS-8's settings and filters, and returns the unit to its out-of-the-box state.

www.jbl.com 40 UsiNG The Ms-8 RESETTING THE MICROPROCESSOR If your MS-8 stops responding to the remote control (even after you've replaced the remote's battery) or fails to operate in the way this manual describes, use a pen or similar pointed object to press the Reset button on the main unit (see Connections, on page 5.) NOTE: Pressing the Reset button will NOT erase your calibration settings. Need More Information? For more information, visit www.

JBL.com for the latest technical information and other important MS-8 details. 41 www.jbl.com TrOUBLeshOOTiNG If your MS-8 doesn't seem to be working the way it should, read this section to see if the problem and possible solution are listed here.

If, after you try all of the solutions listed here, the problem persists, contact JBL Customer Service at 516.255.4JBL (4525). POWer Symptom The power LED does not illuminate. Possible Cause The +12V, Gnd or Rem In terminals are not properly connected. Solution Confirm that all power connections are correctly made according to this manual. See Connections: Power, on page 5. Replace the fuse with an identical 25A fuse. Check the connections at display and at main unit. See Connections: Display, on page 14.

Press Reset button with a pen or similar object. See Resetting the Microprocessor, on page 41. Solution Confirm that all the required channels of the source unit are properly connected. See Audio Inputs, on page 7. Perform the calibration/ setup procedure. (The procedure must be performed before the MS-8 will pass an audio signal through to its outputs.) See Calibration/Setup, on page 24. Select the correct input using the MS-8's Input Selection menu. See Input Selection Menu, on page 35. Set the MS-8 System Volume at 20dB.

See Acoustic Calibration, on page 32, and Volume Up and Volume Down Buttons, on page 35. Turn the head-unit or source unit volume up to a normal level. The fuse is blown. The power LED illuminates, but the display does not illuminate. The display is not properly connected.

The MS-8's microprocessor needs to be reset. sOUNd Symptom There is no sound in all channels. Possible Cause Improper input connections. Calibration/setup procedure has not been performed. Incorrect input is selected on the MS-8 The MS-8's System Volume is turned all the way down. The head-unit or source-unit volume control is turned all the way down. www.jbl.com 42 TrOUBLeshOOTiNG sOUNd Symptom There is no sound in one or more channels. Possible Cause Improper input connection. Solution Confirm that all required channels of the source unit are properly connected. See Audio Inputs, on page 7. Confirm that the speaker in question is properly connected to the MS-8's speaker output. See Audio Outputs, on page 10. If the speaker is connected to an outboard amplifier, confirm that the outboardamplifier channel is properly connected to the MS-8.

See Audio Outputs, on page 10. Improper speaker connection to outboard amplifier. Outboard amplifier channel is not functioning. The sound comes from the incorrect speaker. Incorrect output connection. Confirm that the speaker is properly connected to the outboard amplifier. Troubleshoot the outboard amplifier and replace it, if necessary. @@@@@@@@Possible Cause The Aux input level is not properly set. Solution Use the MS-8's System Levels screen to set the Aux level so that the Aux source's level matches the level of the head unit source. See Audio Controls Menu, on page 35.

Set the source player's volume control to a higher level. If you have connected the front speakers to be driven directly by the MS-8's internal amplifier, set the MS-8's System Volume at 20dB. If you have connected the front speakers to an external, higher-powered amplifier that is connected to the MS-8's line outputs, set the MS-8's System Volume to a level lower than 20dB. In either case, you should use the head unit's volume control to control the system's volume. @@@@@@@@Reduce the Bass Control and/or Graphic EQ boost levels.

We recommend never combining high levels of Graphic EQ bass-band boost with high Bass Control boost. The source player's volume control is set too low. The sound in all speakers is distorted. The MS-8's System Volume control and the head unit's volume control are not properly adjusted. www. jbl.com 44 TrOUBLeshOOTiNG sOUNd Symptom The center speaker seems too loud when you're listening to news, sports or talk radio stations. Possible Cause The MS-8's Logic 7 processing is (by design) sending all mono information to the center speaker. Solution Use the MS-8's System Levels screen to reduce the center speaker's level until it sounds correct to you. Then save the settings as one of the MS-8's Favorite settings so you can recall it whenever you listen to this type of station. See Audio Controls Menu, on page 36, and Favorites Menu, on page 39. Use the MS-8's Tone Controls and/or Graphic EQ screens to return all controls to their center positions. See Audio Controls Menu, on page 36. Use the MS-8's Audio Controls menu to activate Logic 7 and DSP. See , on page 36.

Perform the acousticmeasurement portion of the calibration/setup process again, with the MS-8's System Volume set at 20dB. See Acoustic Calibration, on page 32. The sound always has too much or too little bass or treble. The MS-8's Tone Controls and/or Graphic EQ are misadjusted. Music is dull, lifeless and confined-sounding, with poor stereo imaging. The MS-8's Logic 7 and digital signal processing (DSP) are defeated. The MS-8's System Volume was set at too high a level during the acoustic-calibration process. 45 www.jbl.com TrOUBLeshOOTiNG errOr MessAGes ON disPLAY Symptom "MS-8 Has Overheated.

.." Possible Cause There is insufficient cooling air around the main unit. Solution Re-install the main unit in a less confined area that will allow cooling air to circulate around the unit. See Choosing a Location for the Main Unit, on page 17.

If the message displays only once and the MS-8 resets without incident, no further involvement is necessary. If the message displays often, contact JBL Technical Support at 516.255.4JBL (4525). "Voltage Too High.

.." or "Voltage Too Low..." The vehicle's electrical system may be malfunctioning. If the message displays only once and the MS-8 resets without incident, no further involvement is necessary. If the message displays often, contact your vehicle's dealer or mechanic. "No DSP Response..

." There has been a possible electrostatic discharge within the main unit. MisCeLLANeOUs Symptom The display is hard to read. Possible Cause The Brightness and/or Contrast controls are not properly adjusted. Solution Use the MS-8's Brightness and Contrast screens to adjust the display for better viewing. See System Settings Menu, on page 40. www.jbl.com 46 sPeCiFiCATiONs Power Output: Maximum Output Power: Frequency Response: Signal-to-Noise Ratio (Line Input to Line Output): Signal-to-Noise Ratio (Line Input to Speaker Output): Maximum Input Voltage (Speaker-Level Input): Maximum Input Voltage (Line Input): Maximum Output Voltage (Line Output): Maximum Current Draw: Standby Current Draw: Display LCD Screen: Power Requirement: Main Unit Dimensions (L x W x H): 20W x 8 channels @ 4 ohms 30W x 8 channels @ 2 ohms 20Hz20kHz >90dB >85dB 15V 2.8V 2.8V 16A <0.01A 128 x 64 pixels 12V DC, negative ground 11-1/2" x 7-3/8" x 2-1/8" (293mm x 187mm x 55mm) Display Unit Dimensions (H x W x D, including stand): 3-1/8" x 3-3/8" x 2-7/16" (79mm x 86mm x 62mm) Weight: Main unit 6.4 lb (2.9kg) Display unit 2.8 oz (80g) Remote control 1.4 oz (40g) 47 www.jbl.com © 2010 Harman International Industries, Incorporated. All rights reserved. JBL and Logic 7 are trademarks of Harman International Industries, Incorporated, registered in the United States and/or other countries.

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