

VMA160

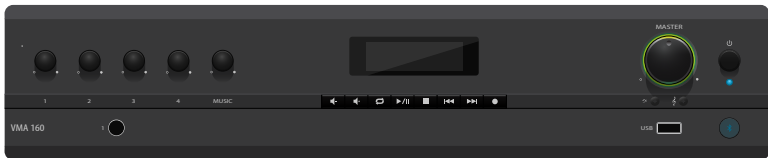
VMA1120

VMA1240

VMA260

VMA2120

Commercial Series
1 Channel & 2 Channel Mixer-Amplifier
Operation Manual



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This manual does not include all of the details of design, production, or variation of the equipment. Nor does it cover every possible situation which may arise during installation, operation or maintenance.

The information provided in this manual was deemed accurate as of the publication date. However, updates to this information may have occurred.

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IMPORTANT SAFETY INFORMATION

U.K. MAINS PLUG WARNING

A. Do not use a power cord with a two-prong electrical plug unless it is used with a power outlet having a ground (earth) connection. The power cord has a three-prong electrical plug for use in a grounded (earthed) electrical outlet.

If the power cord is used in a non-grounding outlet, the safety protection will be reduced.

The power cord has a three-prong electrical plug for use in a grounded (earthed) electrical outlet.

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ELECTROMAGNETIC COMPATIBILITY

This product is designed to be used in a home or office environment. It is designed to be used in a home or office environment. It is designed to be used in a home or office environment.

The product is designed to be used in a home or office environment. It is designed to be used in a home or office environment. It is designed to be used in a home or office environment.

USE GROUNDED OUTLET ONLY!

A. Do not use a power cord with a two-prong electrical plug unless it is used with a power outlet having a ground (earth) connection. The power cord has a three-prong electrical plug for use in a grounded (earthed) electrical outlet.

If the power cord is used in a non-grounding outlet, the safety protection will be reduced.

MAGNETIC FIELD

The product is designed to be used in a home or office environment. It is designed to be used in a home or office environment. It is designed to be used in a home or office environment.

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Do not dispose of this product in household waste. Please refer to the instructions for disposal.

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FEDERAL COMMUNICATION COMMISSION INTERFERENCE STATEMENT

This equipment may cause interference with radio and television reception if it is not properly grounded and used in close proximity to other electronic equipment.

If this equipment causes interference with radio and television reception, you may be able to improve the interference by reorienting the receiving antenna.

Use the following steps to help reduce radio and television interference:

FCC CAUTION

1. Do not use the power cord with a two-prong electrical plug unless it is used with a power outlet having a ground (earth) connection.

2. Do not use the power cord with a two-prong electrical plug unless it is used with a power outlet having a ground (earth) connection.

IMPORTANT NOTE

Do not use this product near water, such as a sink, bathtub, or shower. Do not use this product near a swimming pool or other large body of water.

CANADA STATEMENT

This product is designed to be used in a home or office environment. It is designed to be used in a home or office environment. It is designed to be used in a home or office environment.

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CAUTION EXPOSURE

Do not use this product in areas where there are high voltage or high current electrical circuits, such as power lines or electrical substations.

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THE FINAL END PRODUCT MUST BE LABELLED IN A VISIBLE AREA WITH THE FOLLOWING

Do not use this product in areas where there are high voltage or high current electrical circuits, such as power lines or electrical substations.

Do not use this product in areas where there are high voltage or high current electrical circuits, such as power lines or electrical substations.

EC - DECLARATION OF CONFORMITY

Brand: JBL
 Equipment Type: C: M k -A
 Model names: VMA160, VMA1120, VMA1240, VMA260, VMA2120

We, **Harman International**, declare under our sole responsibility that the product, to which this declaration relates, is in conformity with the following standards.

Report No.	Description
EN 55103-1:2009 +A1:2012	EMC C: P: K F A : A ; A : E : C: A : P: k : J K P 1: E
EN 55103-1:2009 +A1:2012	F k E A A @ 10 20
EN 61000-3-2:2014	L : H : C k : k k k : 16A)
EN 61000-3-3:2013	L : : F k : F k k : - : k : k C k k : 16A
EN 55022:2010	L : M k : : M k : D : C k k : I E : & C: k k , C B L (L : H : C k F k (C) 11.04 EMC C: P :

EN 61000-3-2:2014 EEC, Harbor Professional Audio Disbur

Due to line current harmonics, we recommend that you contact your supply authority before connection.

We certify that the product identified above conforms to the requirements of the EMC Council Directive 89/336/EEC as amended by 92/31/EEC, and the Low Voltage Directive 73/23/EC as amended by 93/68/EEC.

1.0 Welcome

The JBL® for installed sound applications. There are both single channel and two channel

of low impedance, 70V or 100V outputs.

The product includes a rack mounting kit for installations to a cabinet. Provisions are included for remote volume control using the JBL CSR-V control module.

1.1 Features

- 5 or 8 inputs with 1 or 2 outputs, respectively
- Ideal for commercial and industrial use
- Euroblock, RCA and TRS type input connectors available.
- Independent Bass and Treble controls for each output channel
- VOX ducking during announcements
- Remote volume control capability using JBL CSR-V module and standard ethernet cable
- Priority muting using PTT switch closure
-
- Barrier block output connections to drive 8 Ohm, 70V or 100V speaker systems.
- 3 Year Warranty
-

*Warranty is only valid within the United States of America. For information on warranty outside of the U.S.A., please contact your local distributor.

1.2 Front Panel Controls & Indicators

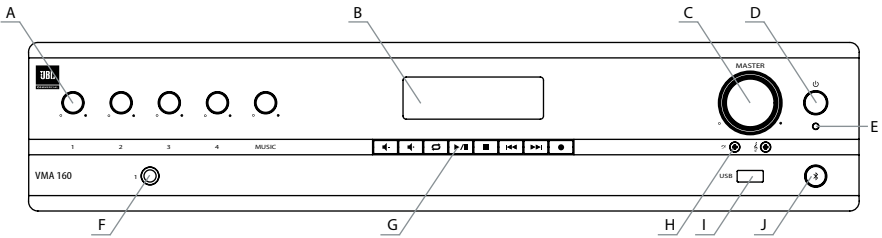
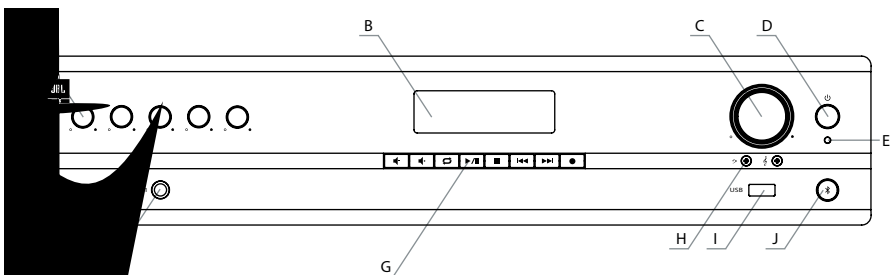


Figure 1.2.1 Front Panel, 1 Channel Model

- A. Input Level Controls
- B. Media Player Display
- C. Output Volume Control(s) Including an Illuminated ring around the output volume control will light green with signal presence while red indicates clipping, i.e. the signal has reached the threshold of audible distortion
- D. Power Switch
- E. Power on LED illuminates blue when power is switched on.
- F. Input 1 - Front panel audio input capability via 1/4" TRS connector. The two channel model includes a second, similar input (Input 4).
- G. Media Player Controls
- H. Tone Controls - Bass ♩ and Treble ♩ potentiometers for each output channel.
- I. USB Audio Input
- J. Bluetooth Key and Indicator



2.0 Setup

2.1 Unpacking Your Amplifier

during transit. If damage is found, notify the transportation company immediately. Only you can initiate a claim for shipping damage. We will be happy to help as needed. Save the shipping carton as evidence of damage for the shipper's inspection.

We also recommend that you save all packing materials so you will have them if you ever need to transport the unit. Never ship the unit without the factory pack.

WARNING:

observe the Important Safety Instructions found at the beginning of this manual.

2.2 Installing Your Amplifier

CAUTION:

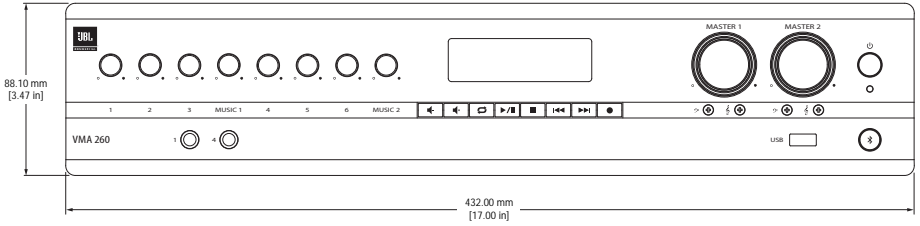
power source and all level controls turned completely down (counterclockwise).

Note: We recommend that any sensitive equipment be located at least 8 inches (20

-
-

the unit for convection cooling. Rubber feet are included and can be
see Figure 2.2.1.

FRONT VIEW



SIDE VIEW

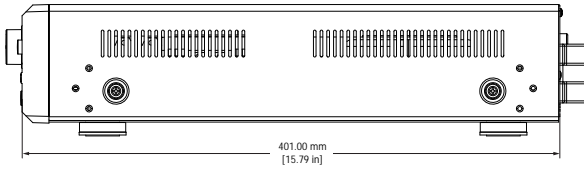
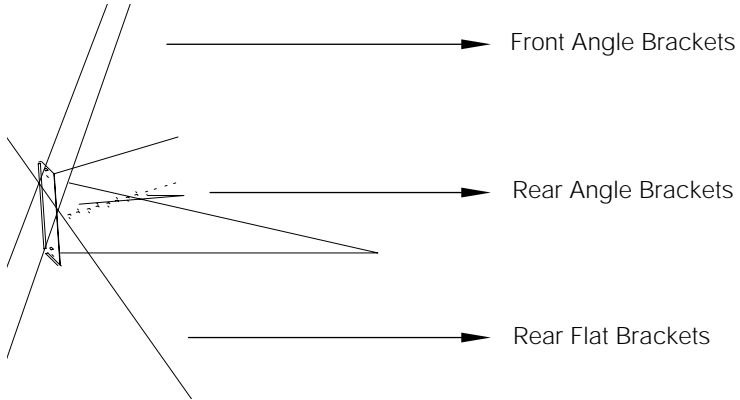


Figure 2.2.1 Dimensions



2.3 Ensuring Proper Cooling

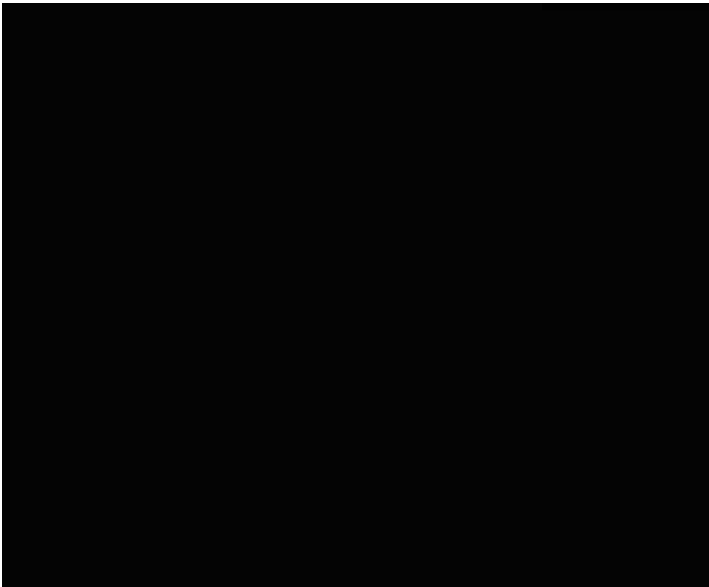
When using an equipment rack, keep a minimum space of 4 inches (10 cm) from the top surface of the unit. Close any open spaces in the rack with blank panels. DO NOT block any air vents. The side walls of the rack should be a minimum of 2 inches

2.4 Choosing Input Wire & Connectors

We recommend using pre-built or professionally wired balanced line (two-conductor included Euroblock connectors, see Figure 2.4.1. Unbalanced lines may be used, but may result in hum or RF noise if using very long cable runs.

You can also use RCA connectors to connect audio devices, for example, CD/DVD player. However, do not use both Euroblock and RCA audio input connectors on a single channel at the same time.

NOTE: *Custom wiring should only be performed by qualified personnel.*



2.5 Output Wiring & Connectors

To drive distributed speaker systems designed to operate at 70V or 100V, connect to the corresponding output terminals.

JBL recommends using pre-built or professionally wired, high-quality, two-conductor, heavy gauge speaker wire. Speaker wires should be twisted cable, if possible. To prevent the possibility of short-circuits, the wires should be stripped back no greater than 6 mm (1/4 inch), see Figure 2.5.1.

Suggested below are guidelines to select the appropriate size of wire based on the

Distance

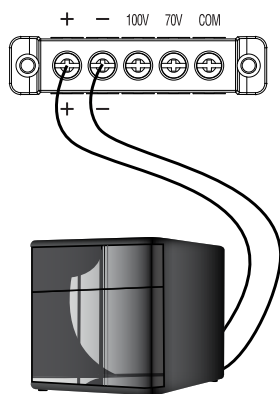
Up to 25 ft. (7.6m)

26-40 ft. (7.9-12.2m)

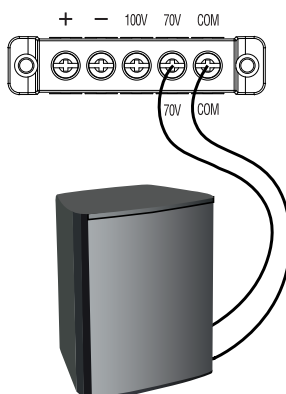
Wire Size

16AWG

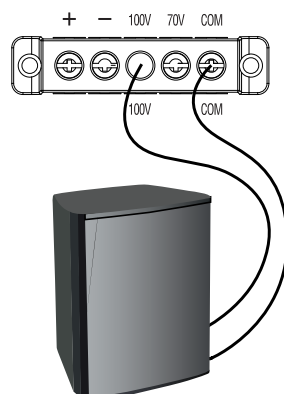
14AWG



8 Ohm Speaker



70V Speaker System



100V Speaker System

2.6 Wiring Your Audio System



2.7 Connecting to AC Mains

supplied AC power cord. First, connect the IEC end of the cord set to the IEC

When properly connected to a live power source, the power LED should illuminate blue.

WARNING: *The third prong of this connector (ground) is an important safety feature. Do not attempt to disable this ground connection by using an adapter or other methods.*

3.0 Operation

3.1 Precautions

the following precautions for optimum performance and safety:

1. including input and output wiring hookup. Improper wiring can result in serious

this manual.
2. Use care when making connections, selecting signal sources and controlling the output level.
3. Always be sure to have all levels at minimum when connecting or disconnecting audio sources from the inputs, especially when MIC is selected from the MIC/

protection mode or even cause damage.
4. **WARNING:** Never connect the output to a power supply, battery or power main. Electrical shock may result.
5. Tampering with the circuitry, or making unauthorized circuit changes may be hazardous and invalidates all agency listings.
- 6.
7. Do not overdrive the mixer, which will cause clipped signal to be sent to

loudspeaker damage may result.
8.

clipping and speaker damage.
9.

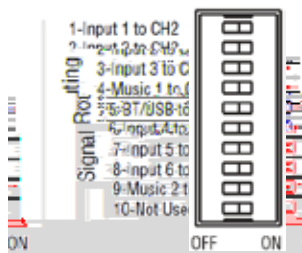
temperature conditions in excess of 40°C. Failure to do so will result in the automatic disconnection from the power supply as the overheat auto protection function will be activated and there will not be any audio signal coming out

temperature you may turn the volume up to a safe level.
10.

will be activated.

CAUTION: JBL is not liable for damage that results from overdriving other system components.

3.2 Input Routing



The two-channel models, VMA260 and VMA2120, include a default routing of Input channels 1-3, Music

The user may take any input and have it routed to both outputs by selecting the appropriate switch. For example, if you set switch 1 to ON, Input 1 will be routed to both AMP1 and AMP2.

3.3 Configuration Settings

3.3.1 70V/100V Output Selection

impedance speakers, (4 Ohms ,minimum) The 70V/100V switch will activate the built-in output transformer allowing the unit to directly drive 70V or 100V speaker systems when connected to the appropriate output terminals. As an added feature when driving the high impedance speakers, the system automatically apply a 70Hz high

3.3.2 Chime Function

Turning chime ON will enable a chime sound at the onset of an announcement when priority muting is invoked. (See section 3.5, Priority Muting, on the following page.)

CH1 Settings	1-70V/100V Output	OFF	ON
	2-Chime	OFF	ON
	3-Input 1 Line/Mic	LINE	MIC
	4-Input 2 Line/Mic	LINE	MIC
	5-Input 2 Phantom	OFF	ON
	6-Input 3 Line/Mic	LINE	MIC
	7-Input 3 Phantom	OFF	ON
	8-Not Used	NC	NC

3.3.3 Line/Mic Gain Switch

Additional gain is available for use with sources, in particular microphones, that have low output levels. Switching to MIC position activates 48dB additional gain. Use only when necessary as the added gain may cause higher noise levels.

3.3.4 Phantom Power

appropriate Phantom Power switch.

3.4 VOX Function

Voice activated ducking is available on input channel 2 of the VMA160, VMA1120 and VMA1240. The feature is available for both input channels 2 and 5 of the VMA260, and VMA2120. The audio input level required to activate ducking is set using the trim pot on the rear panel. Adjusting in the counterclockwise direction will reduce that level while the full clockwise setting will disable the VOX function.

3.5 Priority Muting

VMA160, VMA1120 and VMA1240 may use Input channel 2 as a priority channel, muting all other channels when pins 4 and 5 are shorted using a switch closure.

The VMA260, and VMA2120 lets Input2 operate with priority over all inputs into

3.7 Media Player

3.7.1 Bluetooth Operation

To activate Bluetooth, perform the following:

- 1.
2. Enable Bluetooth of your source media player and search for "JBL COMMERCIAL (XX)". Establish a connection. (Note that the "XX" represents the last two digits of the MAC address which allows the user to have multiple systems in close proximity.)
3. illuminated.
4. Press the VOLUME UP/VOLUME DOWN keys to increase or decrease the volume.
5. Press the NEXT key to jump to the beginning of the next track.
6. Press the PREVIOUS key once to jump to the beginning of the current track or twice to the previous track.
7. Press the STOP key to stop playing. (**Note:** .)
8. Press the PLAY/PAUSE key to pause or resume playing.
9. To disconnect, either press the Bluetooth Key or disable Bluetooth at the media player source device. (**Note:** .)
10. Press the REC key to start recording. (**Note:** .)

Note: *Bluetooth signal is muted when broadcasting the chime tone.*

3.7.2 USB Operation

1. the USB Drive will be displayed.
2. Press PREVIOUS or NEXT Key to scroll the playable media.
3. Press the VOLUME UP/VOLUME DOWN keys to increase or decrease the volume.
4. Press the REPEAT Key to enter different repeat modes:
 - REPEAT CURRENT – Repeat the current track.
 - REPEAT ALL – Repeat all tracks.
 - "MESSAGE_1.mp3" every 30 minutes while repeating all other tracks.

- "MESSAGE_1.mp3" every 60 minutes while repeating all other tracks.
 - REPEAT OFF – No repeat.
5. Press the PLAY/PAUSE key to pause or resume playing.
 6. Press the STOP key to stop playing.
 7. Press the PREVIOUS Key once to jump to the beginning of the current track or twice to the previous track.
 8. Hold down the PREVIOUS Key to rewind.
 9. Press the NEXT Key to jump to the beginning of the next track.
 10. Hold down the NEXT Key to fast forward.
 11. Press the REC key to start recording. (**Note:**
.)

3.7.3 Additional Media Player Information

Bluetooth playback will always have priority over USB.

The default media player volume is maximum.

USB and Bluetooth signals cannot be recorded.

While playing from the USB or Bluetooth source, the signal being played is interrupted momentarily when a chime tone is sounding in another channel.

Hidden functions are available by pressing and holding a media player key for more than 1 second then pressing and holding the Bluetooth key along with it.

- RECORD (>1s) + BT Displays the BT MAC address
-
- PLAY (>1s) + BT Illuminates all dots in the display
- REPEAT (>1s) + BT Factory Reset

3.7.4 Firmware Upgrade Procedure

- 1.
2. Insert the USB Drive.
3. Display will show "USB UPGRADE".
4. Wait until display shows "USB SUCCESS" and the display turns off.
5. Power off the unit.
6. Remove the USB Drive.
- 7.

4.0 Troubleshooting

CONDITION: No power to the mixer-amplifier so that the power LED is not illuminated.

CONDITION: No sound or low sound.

POSSIBLE REASON: The input signal is not present or at a very low level.

POSSIBLE REASON: The Master Volume control is turned down.

POSSIBLE REASON: A CSR-V is connected and turned down.

POSSIBLE REASON: Mixer channel inputs are turned down.

POSSIBLE REASON: A Priority switch is closed, muting all except the priority input.

POSSIBLE REASON: The 70V/100V switch is OFF while using the 70V or 100V outputs.

CONDITION: Distorted sound.

POSSIBLE REASON: Input signal level is too high. Please turn down the input level the clip indicator (red ring around the Master Volume) to be constantly ON.

POSSIBLE REASON: Master Volume is too high.

POSSIBLE REASON: MIC/LINE switch is in MIC position when using a line level source.

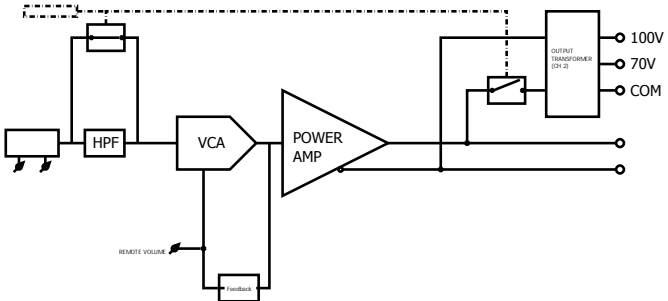
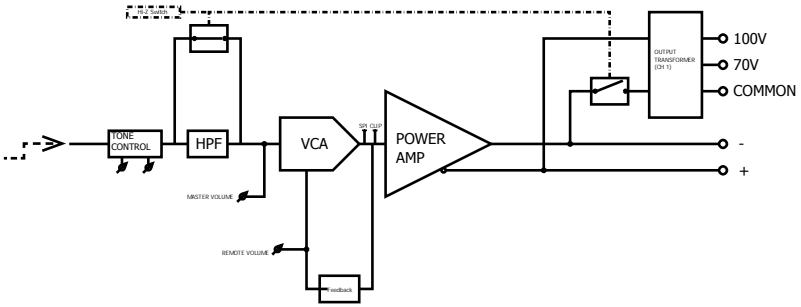
Appendix A: Target Performance Specifications

Performance	VMA160	VMA1120	VMA1240	VMA260	VMA2120
Max Output Power per Channel into 4 Ω or 8 Ω \leq 0.5% THD	60W	120W	240W	60W	120W
Insertion Loss (70V & 100V outputs)	1 dB maximum				
Number of Input Channels	5	5	5	8	8
Number of Output Channels	1	1	1	2	2
Tone Controls (Bass and Treble non-detented potentiometers on each channel)	Bass +/-14dB @ 50Hz Treble +/-14dB @ 10kHz				
Input Sensitivity (to obtain full rated power into 8	Mic Input: 5.5mV _{RMS} Line Input: 1.3V _{RMS} RCA Input (stereo in): 130mV _{RMS}				
Frequency Response (measured at 2.83V _{RMS} into rated load impedance at any output)	70V/100V Outputs: 80Hz - 15kHz +/-3dB				
Total Harmonic Distortion (THD) (measured at 2.83V _{RMS} into rated load impedance at any output)	Power Amp Output: <0.5%, 20Hz - 20kHz				
Signal-to-Noise Ratio (Ref. Rated Power, mixer levels @ min., master volume @ max. A-weighted)	>76dB				
Input Impedance (nominal)					
Phantom Power	27VDC				
Crosstalk (reference rated power, volume at					

Appendix B: Block Diagrams

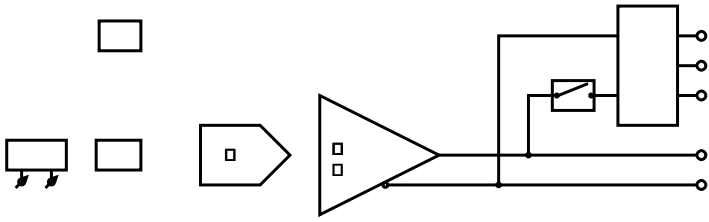
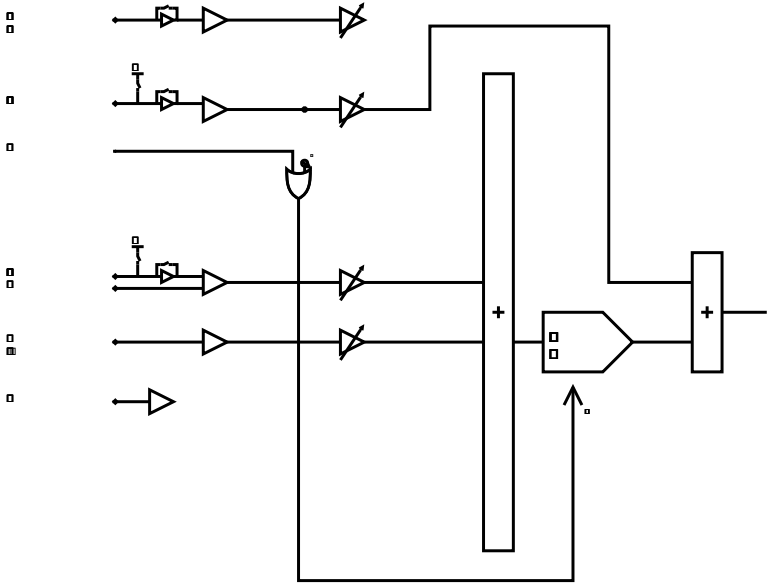
VMA260 & VMA2120

VMA260 & VMA2120 Continued



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VMA160, VMA1120 & VMA1240



Appendix C: Contact Information

For additional information, please consult JBL Professional Customer Service, your system installer or retailer.

On The World Wide Web:

www.jblcommercialproducts.com

Professional Contacts, Outside the USA:

Contact the JBL Professional Distributor in your area. A complete list of JBL Professional international distributors is provided at our U.S.A. Website: www.jblpro.com.

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