PROFICIENT™
Audio Systems

M80

7.1 Channel Surround A/V Receiver

Installation & User Guide

SAFETY INSTRUCTIONS

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

CAUTION: To reduce the risk of electric shock, do not remove cover (or back). No user-serviceable parts inside. Refer servicing to qualified service personnel.

APPLICABLE FOR USA, CANADA OR WHERE APPROVED FOR USAGE

CAUTION: TO PREVENT ELECTRIC SHOCK, MATCH WIDE BLADE PLUG TO WIDE SLOT, INSERT FULLY.

ATTENTION: POUR EVITER LES CHOCS ELECTRIQUES, INTRODUIRE LA LAME LA PLUS LARGE DE LA FICHE DANS LA BORNE CORRESPONDANTE DE LA PRISE ET POUSSER JUSQU AU FOND.

• Explanation of Graphical Symbols

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert you to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert you to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with a damp cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding-type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.

PORTABLE CART WARNING

13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
15. The apparatus shall not be exposed to dripping or splashing and that no objects filled with liquids, such as vases, shall be placed on the apparatus.
16. **CAUTION:** Servicing instructions are for use by qualified service personnel only. To reduce the risk of electric shock, do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so.
17. **WARNING:** To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.

FCC INFORMATION (For US Customers)

1. Product
This product complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this product may not cause harmful interference, and (2) this product must accept any interference received, including interference that may cause undesired operation.

2. Important Notice: Do Not Modify This Product
This product, when installed as indicated in the instructions contained in this manual, meets FCC requirements. Modification not expressly approved by Proficient Audio may void your authority, granted by the FCC, to use the product.

3. Note
This product 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 product 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 product does cause harmful interference to radio or television reception, which can be determined by turning the product OFF and ON, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and the receiver
- Connect the product into an outlet on a circuit different from that to which the receiver is connected.
- Consult the local retailer authorized to distribute this type of product or an experienced radio/TV technician for help.

This Class B digital apparatus complies with Canadian ICES-003
Cet appareil numerique de la classe B est conforme a la norme NMB-003 du Canada.

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INTRODUCTION

Congratulations and thank you for purchasing the Proficient Audio M80 7.1 Channel Surround A/V Receiver.

The M80 combines the best of styling and performance in a full-featured, high performance receiver. The M80 can provide uninterrupted audio/video entertainment, switching from movies on Blu-ray Disc to Sports on Cable or Satellite to iPod Playlists, XM Satellite Radio programming and Video Games. Every source of home entertainment can be connected to the M80 and viewed in any video format from 480i Composite to 1080p HDMI High Definition Video and heard in a wide range of audio Listening Modes from analog stereo to multichannel lossless Dolby TrueHD or DTS HD Master Audio.

The M80 amplifier can be configured for stereo audio playback, 5.1 or 7.1 Surround configurations with an LFE (subwoofer) Pre-Out, or split into a 2 Zone configuration featuring a 5.1 Surround configuration in the Main Room with stereo audio in a second room.

The SmartEQ Speaker Calibration System samples the Main Room acoustics and automatically sets speaker levels, delays and EQ to optimize audio performance for 5.1 and 7.1 configurations to assure seamless surround audio effects.

The 2 Zone capability provides true whole-house entertainment. The Main Room can be watching a movie from Blu-ray or sports program from Satellite or Cable on the High Definition big screen with 7.1 surround, while the iPod, XM Tuner or Music Server provides music entertainment on the patio. An IR Receiver located in Zone 2 and connected to one of the M80s two IR Inputs allows the dedicated Zone 2 IR Remote to independently control Zone 2 functions from the remote location.

The M80 includes a built-in AM/FM Stereo Tuner and a Rear Panel XM Ready Port for connection of an external XM Satellite Radio Tuner. The M80 can store up to 30 AM and FM Preset Channels and up to 40 XM Preset Channels. The M80 OSD, (On Screen Display) will output an on-screen graphic for AM/FM frequency and Preset to the Main Room Video Display. The OSD will also display metadata for channel, preset, artist and song for a connected XM Ready Tuner that can also be controlled by the M80 Remote.

The M80 features a dedicated iPod audio input and communication port. When connected to the Rear Panel MDP Port via a Proficient Audio iPod Dock, iPod functions can be controlled from the M80 Front Panel or M80 Remote. The OSD will display iPod menus and metadata on the Main Room Video Display.

The M80 features multiple, assignable HDMI, Component, S and Composite Video inputs along with multiple, assignable Optical and Coaxial Digital Audio inputs, multiple analog line level stereo inputs and a 7.1 channel input that provide convenient connection and switching for up to eight home entertainment source components. The M80 also includes HDMI, Component, S and Composite Video Monitor outputs for connection to any video display. The M80 also features Coaxial and Optical Digital Audio outputs.

The M80 is versatile and sophisticated, yet easy to setup and operate. The OSD provides clear, easy to use setup screens for every connection and function. Complete on-screen source configuration, Smart EQ automatic speaker calibration, video output resolution and Listening Mode selections are all part of the OSD. The OSD is easily operated with the cursor buttons on the M80 Front Panel or M80 Remote. The M80 Remote can control all OSD functions in addition to AM/FM/XM Tuner functions and iPod Menu navigation for complete armchair control.

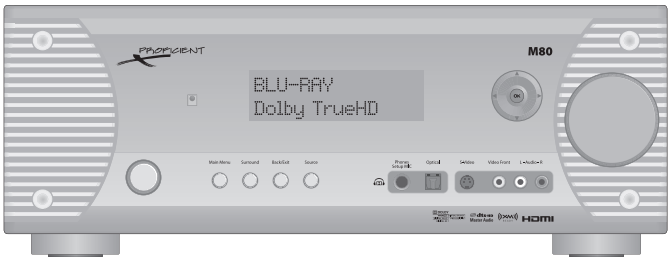
The M80 is more than a solid performer, it looks good too. The cast aluminum Front Panel is like no other and makes an impressive addition to any stack of gear.

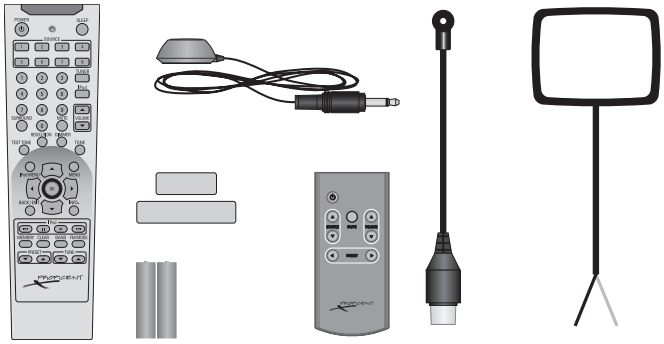
Fully Featured. Solid Performer. Great Looking. Home entertainment never looked and sounded this good.

Please read and follow the instructions in this guide to assist in proper installation connection and use of the Proficient M80 A/V Receiver.

WHAT'S INCLUDED

1 - M80 7.1 Channel A/V Receiver
1 - M80 IR Remote Control
1 - Zone 2 IR Remote
2 - AAA Batteries
1 - FM Indoor Antenna
1 - AM Loop Antenna
1 - SmartEQ Setup Microphone
2 - Front Panel Jack Covers
1 - M80 Installation and User Guide





M80 FEATURES

Basic Description
Eight Source, 7.1 Surround + 2nd Zone A/V Receiver

Amplifier
100W Continuous x 7 Channels @ 8Ω; 20Hz - 20kHz; <0.05% THD

Audio Inputs/Outputs
AM/FM Stereo Tuner with 30 Presets Each
XM Ready Satellite Radio Input with 40 Presets
7 Stereo Analog Line Level Audio Inputs
2 Stereo Analog Line Level Audio IN/OUT Loops
2 Digital Coaxial Audio Inputs
1 Digital Coaxial Audio Output
2 Digital Optical Audio Inputs
1 Digital Optical Audio Output
7.1 Multi-Channel Analog Audio Input
7.1 Multi-Channel Analog Audio Pre-Out

Video Inputs/Outputs
5 Composite Video Inputs
1 Composite Video IN/OUT Loop
1 Composite Video Monitor Out
5 S-Video Inputs
1 S-Video IN/OUT Loop
1 S-Video Monitor Out
3 Component Video Inputs (Y, Pb, Pr)
1 Component Video Monitor Out
4 HDMI Inputs (v1.3a)
1 HDMI Monitor Out (v1.3a)

Speaker Configurations
Stereo
5.1 Surround
7.1 Surround
5.1 Surround + 2nd Zone (Stereo)

Control
2 IR Control Inputs
1 IR Control Output
Sleep Timer
12VDC Configurable Trigger Output

Front Panel Display
Large, clear fluro-display
Dimmer for Front Panel Display

Video Transcoding
Faroudja DCDi Cinema

Listening Modes
Dolby True HD
Dolby Digital Plus
Dolby Digital EX
Dolby Pro Logic IIx Movie/Music/Game
Dolby Pro Logic II Movie/Music
Dolby Virtual Speaker
Dolby Stereo
Dolby Headphone
DTS HD Master Audio
DTS HD High Resolution Audio
DTS ES Discrete 6.1
DTS ES Matrix 6.1
DTS NEO:6 Cinema/Music
DTS 96/24 Decoding
DTS Stereo
7 Channel Stereo
5 Channel Stereo
Stereo
Analog Bypass

Multizone
1 Stereo Analog Line Level Audio Output (Fixed)
1 Stereo Analog Line Level Audio Output (Variable)
1 Composite Video Out
1 S-Video Out
1 IR Control Input

M80 FRONT PANEL FEATURES

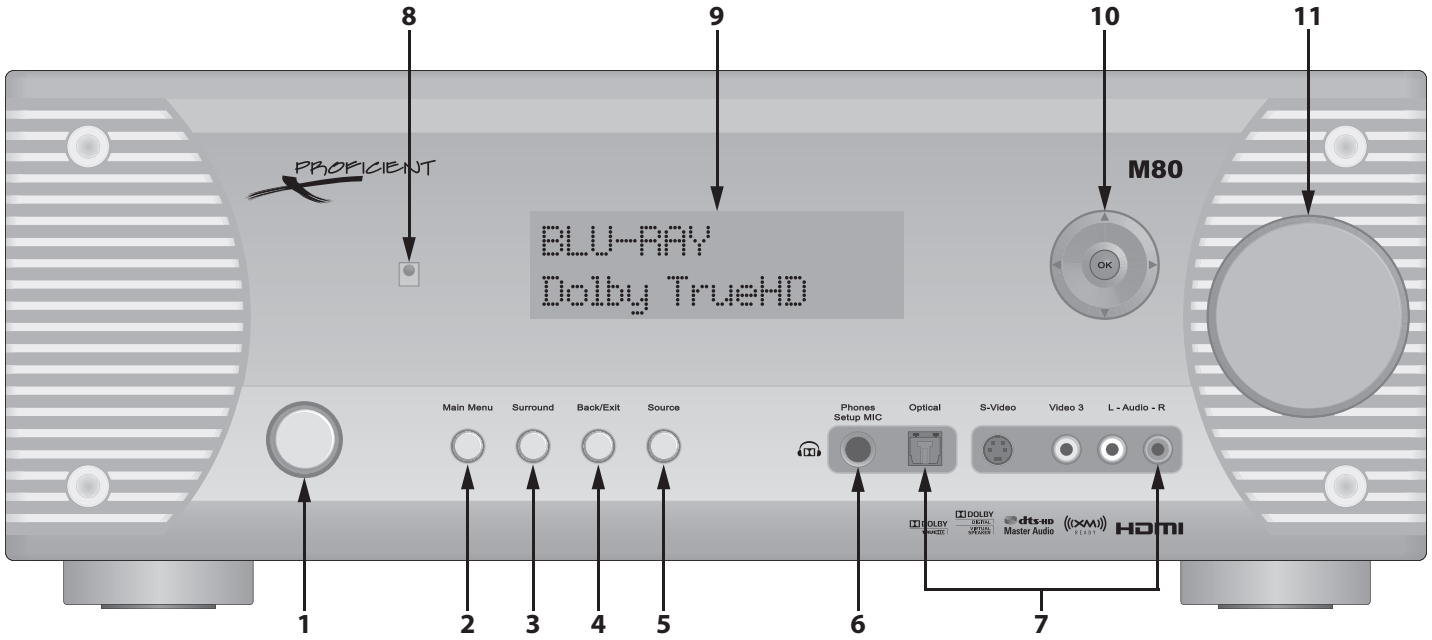


Diagram 1 *M80 Front Panel Features*

FRONT PANEL

1. **ON/STANDBY -** Press this button to turn the M80 ON/OFF. In Standby, the button is surrounded by a red backlight to indicate that the M80 main power is ON. To turn the unit ON, press the button. The backlight turns blue and the Front Panel Display illuminates. The M80 will go through a power up sequence of about five seconds after which the receiver is ready for use. To return to Standby, press the button and the audio signal will be cut, the amp will turn off, the Front Panel Display will turn off and after a short delay the ON/Standby button backlight will illuminate red.

2. **MAIN MENU -** Press this button to activate the On-Screen Display (OSD). The OSD is a menu driven control interface that allows setup and configuration of most M80 operating functions. The OSD can also be used to control the M80 in normal user mode. Menus include: Listening Mode, DSP Options, Tone Controls, Zone 2 Controls and Setup Menu.

3. **SURROUND -** Press this button to scroll through the available audio surround modes for a selected source. The available modes will vary given the connection and encoding of the content being played.

4. **BACK/EXIT -** Press this button when the On-Screen Display (OSD) is open to step backward in menu navigation or ultimately exit the OSD.

5. **SOURCE -** With the M80 power ON, press this button repeatedly to select the desired source. The source name or selected input will appear on the Front Panel Display to indicate the selected source.

6. **PHONES/SETUP MIC -** Connects to a standard stereo 1/4 inch phone plug for listening through stereo headphones or to the included SmartEQ Setup Mic for speaker configuration.

   DOLBY HEADPHONE - The M80 features Dolby Headphone technology. This feature creates a 5.1 surround sound experience from stereo content in any standard headphones when used with Dolby Pro Logic II/IIx. The Speaker Outputs are automatically turned off when headphones are connected to this jack. Dolby H/P will appear on the Front Panel Display as long as the headphones are connected.

   SMARTEQ SETUP MIC - With all of the sophisticated surround capabilities of the M80, calibrating the speaker levels is highly critical. The SmartEQ Setup Mic is used with the OSD Setup Menu/SmartEQ Speaker Setup to precisely calibrate speaker levels to compensate for speaker placement, room acoustics, etc. This assures proper balance of the speaker output levels and delays to deliver the surround audio channels as they were intended to be heard.

7. **FRONT PANEL A/V INPUTS -** These Front Panel convenience jacks connect to an audio/video device such as a video game, MP3 Player, still or video camera, etc that is not a regular system component. This eliminates having to pull the receiver out of its installed position to get to the Rear Panel connections. These inputs are selected by repeatedly pressing the Source button on the M80 Front Panel or by pressing the 8 button on the M80 Remote . When selected, FRONT will appear in the Front Panel Display to indicate the selected input. The Front Panel A/V Inputs are configured in the On-Screen Display (OSD) Source Setup under Source 8.

8. **IR SENSOR -** (Behind Front Panel Lens) The IR Sensor 'sees' the IR control commands output from the M80 Remote Control, M80 Zone 2 Remote Control, other IR Remote when buttons are pressed on the remote for armchair control of the M80. This sensor must be kept clear for direct line-of-sight to the remote, or the remote will not be able to control the M80.

9. **FRONT PANEL DISPLAY -** The Front Panel Display illuminates with receiver status to Source selected, Audio mode, Tuner information, (frequency, preset, tuned, stereo), Volume level (briefly while volume is being set and for five seconds after), XM and iPod metadata, Mute and Sleep Timer. The brightness can be set with the Dimmer button on the M80 Remote Control. The Front Panel Display turns OFF when the M80 is in Standby.

10. **CURSOR -** After pressing the Main Menu button on the M80 Front Panel or Menu button on the M80 Remote, press these buttons to navigate the On-Screen Display (OSD) for control, Source Setup and receiver configuration. With the AM/FM or XM Tuner selected press the ◀ ▶ buttons to tune channels. Press the ▲ ▼ buttons to select Preset Channels. For AM/FM, press OK to select TUNE or PRESET Mode. With an iPod/iPod Dock connected to the MDP jack on the M80 Rear Panel, press the Cursor buttons as is normal for iPod navigation when using the iPod Click Wheel and Center button. The M80 Front Panel Cursor and M80 Remote Cursor have identical functions in any given mode.

11. **VOLUME -** With the M80 ON turn this knob to adjust the speaker level audio output. Turn clockwise (right) to turn volume up; turn counterclockwise (left) to turn the volume down. The audio output level in dB (decibels) will be displayed on the Front Panel Display while the knob is being turned and for three seconds after a volume adjustment has been made.

M80 REAR PANEL FEATURES

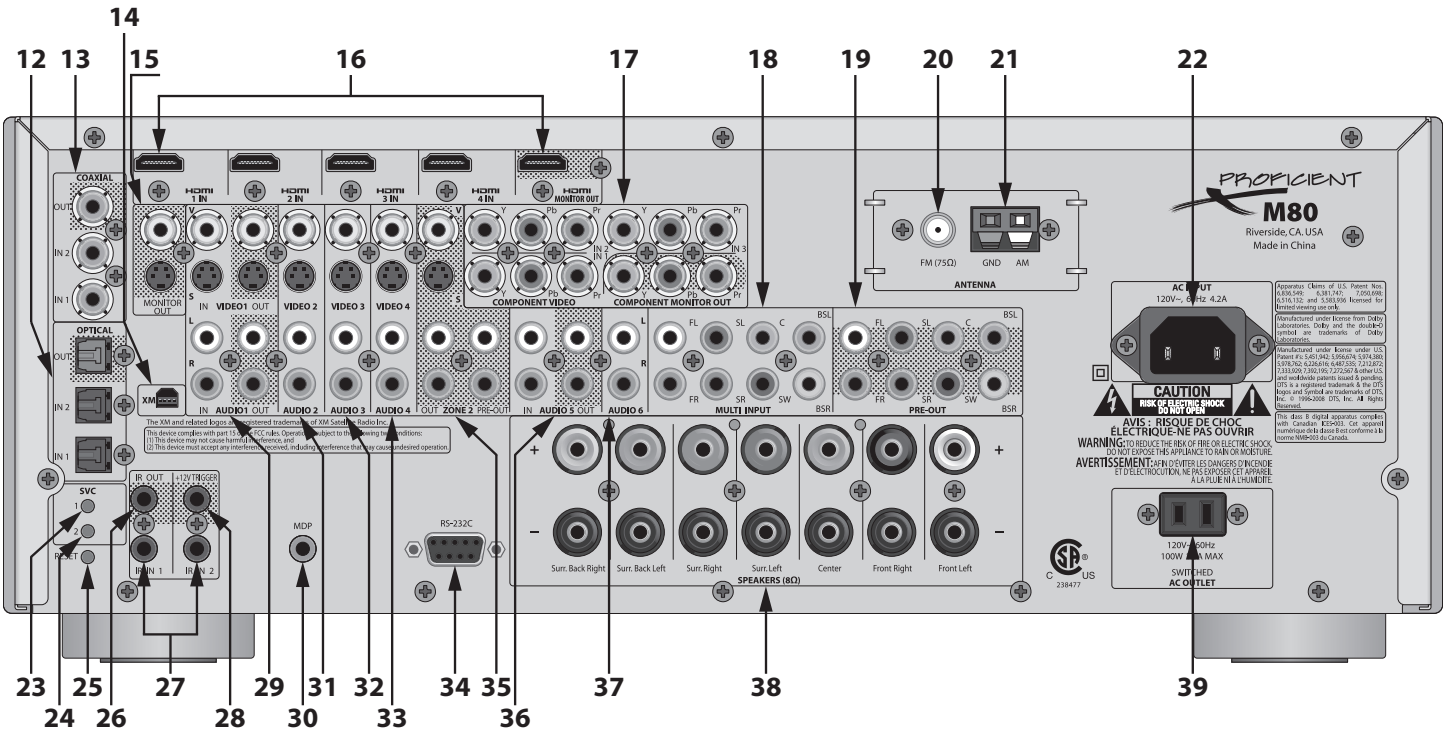


Diagram 2 *M80 Rear Panel Features*

REAR PANEL

12. OPTICAL - (3 Optical Digital Audio Terminals) Connect to the optical digital audio input and outputs of a CD/DVD player, HDTV Tuner, or other S/P-DIF digital audio device for recording and playback of digital audio content.
Note: Only connect the Optical OR Coaxial Digital Audio Output of a given digital audio device. DO NOT connect both.

OUT - Connect to the Optical Digital Input of a digital audio recording device such as a media server, CD-R/RW, PC, etc to record digital audio.

IN - Connect to the optical digital audio output of a CD/DVD player, MP3 player, HDTV Tuner or other S/P-DIF audio output device to playback digital audio content. In addition to digital stereo audio from stereo sources, signals from these outputs typically provide Dolby and DTS encoded content used for 5.1, 6.1 and 7.1 surround audio in home theater systems.

13. COAXIAL - (3 Coaxial Digital Audio Jacks) Connect to the coaxial digital audio input and outputs of a CD/DVD player, HDTV Tuner, or other S/P-DIF digital audio device for recording and playback of digital audio content.
Note: Only connect the Optical OR Coaxial Digital Audio Output of a digital audio device. DO NOT connect both.

OUT - Connect to the coaxial digital input of a digital audio recording device such as a media server or CD-R/RW to record digital audio.

IN - Connect to the coaxial digital audio output of a CD/DVD player, MP3 player, HDTV Tuner or other S/P-DIF audio output device to playback digital audio content. In addition to digital stereo audio from stereo sources, signals from these outputs typically provide Dolby and DTS encoded content used for 5.1, 6.1 and 7.1 surround audio in home theater systems.

14. XM - (1 Mini USB) Connect to an external XM Ready Satellite Radio Tuner. This connection will provide power and control to and receive digital audio and metadata from the connected XM Ready Satellite Radio Tuner.
Note: This XM Ready connection requires an external XM Ready Satellite Radio Tuner that must be purchased separately. XM Satellite Radio requires subscription service from XM Satellite Radio to be able to receive program. To activate an XM Satellite Radio Subscription, call 1.800.XM RADIO (1.800.967.2346) or visit www.xmradio.com and have the Radio ID ready. Please refer to the instructions provided with the XM Satellite Radio Tuner for additional information.

15. **MONITOR OUT -** (1 RCA Jack, 1 S-Video Jack) Connect to the Composite or S-Video Input on a Video Display that does not feature Component Video or HDMI Inputs or as alternate connections for additional Main Room Video Display options.
Note: These connections are not required on a Video Display with either Component Video and/or HDMI Inputs. All M80 Source video input content is up-converted and down-converted to all video formats with the exception of HDMI input content which is only available as HDMI output. See section **Video Display Connections** for additional information.

16. **HDMI IN/OUT -** (5 HDMI v1.3a Repeater Type Terminals) Connect to the HDMI outputs or input on appropriately featured digital audio/video devices. HDMI v1.3a provides transmission of various compressed and uncompressed digital audio and digital video formats along with device control data over a single cable for highest quality audio and video performance with the ease of the connection of a single cable. All composite, S and Component Video input content is up-converted to HDMI. HDMI input content is only available as HDMI output.
Note: It may be desirable to change the HDMI Control Settings (Auto ON/OFF, etc) for some devices to suit user preference. These settings are typically found in these devices' Setup Menus.

    HDMI IN - Connect to the HDMI OUT Terminals on appropriately featured digital audio/video devices. The HDMI inputs must be configured in the On-Screen Display (OSD) Source Setup. They can be associated with Sources 1, 2, 3, 5, 6, 7 (Multi Input) and Source 8 (Front Panel Inputs). Source 4 is dedicated to iPod and is not configurable for HDMI.

    HDMI MONITOR OUT - Connect to the HDMI IN on a Video Display or Projector. All video sources (Composite, S, Component) connected to the M80 will be up-converted to HDMI. If using a video display with HDMI Inputs, a single HDMI connection between the M80 and Video Display is the only required video monitor connection.

17. **COMPONENT VIDEO -** (12 RCA Jacks) Connect to the component video (Y/Pb/Pr) outputs and inputs on appropriately featured audio/video devices. The component input connections should be used for sources that do not have HDMI outputs. The Component Video Monitor Out should be used if the Video Display features component connections and does not have HDMI connections. All composite and S-Video input is up-converted for output on the Component Video Monitor OUT.

    IN - Connect to the Component Video OUT Jacks on appropriately featured audio/video devices. The component video inputs must be configured in the On-Screen Display (OSD) Source Setup. They can be associated with Sources 1, 2, 3, 5, 6, 7 (Multi Input) and Source 8 (Front Panel Inputs). Source 4 is dedicated to iPod and is not configurable for Component Video.

    OUT - Connect to the Component Video IN on a Video Display or Projector. All Composite and S-Video sources connected to the M80 will be up-converted to Component Video. It is not necessary to connect the M80 Component Video OUT to the Video Display if using the M80 HDMI Monitor OUT.

18. **MULTI INPUT -** Connect to the multichannel analog audio outputs of devices such as Blu-ray Disc, HD-DVD, DVD-Audio, SA-CD Players, etc for playback of discrete analog audio channels. These connections are required for DVD-Audio devices that are HDMI v1.0 or SA-CD devices up to HDMI v1.1 for multichannel audio. For a device that features an on-board digital processor with HDMI, (DVD-Audio v1.1 or better or SA-CD v1.2 or better) Digital Optical or Coaxial outputs, only the digital connection (HDMI, optical, coaxial) is required.
Note: The Digital Optical and Digital Coaxial connections do not output multichannel audio for DVD-Audio or SA-CD Players. Typically a 2-channel audio downmix is output over these connections for those devices.

19. **PRE-OUT -** Connect to an external amplifier(s) to increase Main Room audio power. The SW jack is a discrete subwoofer channel, (the so called '.1' channel in 5.1, 6.1 and 7.1 surround systems) that gets connected to a LFE or line level audio input on a powered subwoofer. The SW jack can be used for the '.1' sub channel with speakers connected to either the M80 speaker terminals or an external amplifier.
Note: Some audio encoding provides a discrete LFE (Low Frequency Effects) Channel that is engineered as part of a surround audio mix. Some Listening Modes will 'manufacture' a subwoofer channel by separating low frequency content from the audio program. The M80 accommodates both conditions and outputs LFE or subwoofer information via the Pre-Out SW (subwoofer) jack, based upon the currently selected audio content and Listening Mode.

20. **FM(75Ω) -** (1 female 'F' type terminal) Connect to the included FM antenna.

21. **GND/AM -** (2 spring clips) Connect to the included AM Loop antenna.

M80 REAR PANEL FEATURES

22. **AC INPUT -** Connect to the included IEC 2-prong AC Power Cord. After all connections have been made and confirmed, plug the power cord into an unswitched 110V AC Outlet to power the M80. Contact Proficient Audio Systems for a proper replacement should the AC Power Cord be damaged or misplaced.

23. **SVC 1 -** This button is only used during factory M80 firmware updates. Do not press this button. To view the current firmware version, with AM Tuner selected, press and hold the Surround button on the M80 Front Panel for five seconds. The firmware version will appear on the Front Panel Display.

24. **SVC 2 -** This button is only used during factory HDMI firmware updates. Do not press this button.

25. **RESET -** This button is only used during factory M80 firmware updates. Do not press this button. To reset the M80 to factory defaults, with FM Tuner selected, press and hold the Surround button on the M80 Front Panel for five seconds. This will delete any user programmed settings including Source Setup, Tuner Presets, Speaker Settings and Listening Mode preferences.

26. **IR OUT -** (1 mono 3.5mm mini jack) Connect to the IR IN on a device equipped with an appropriate IR Control Input. These types of inputs typically accept an IR control signal that has had the IR carrier stripped.
    Note: Devices that feature IR Control Inputs for stripped carrier signals typically have parallel ports that allow daisy chaining multiple devices.

27. **IR IN 1& 2 -** (2 mono 3.5mm mini jacks)
    Main Room - Connect either jack to the standard IR Flasher output of an IR repeater system for main room remote control without having to use an IR Flasher. This connection also allows the M80 to be controlled via the M80 Remote when the M80 is hidden in an equipment closet or enclosed cabinet. IR signals received at these inputs can also control any devices controlled via the IR OUT Jack. (Visit www.proficientaudio.com and select 'accessories' for additional information on IR control products.)

    Zone 2 - Connect either jack to the standard IR Flasher output of an IR repeater system for Zone 2 control of the M80 when used with the M80 Zone 2 Remote. Multizone functionality must be configured in the On Screen Display (OSD) Setup under: Zone 2 Controls. IR signals received at these inputs can also control any devices controlled via the IR OUT Jack. (Visit www.proficientaudio.com and select 'accessories' for additional information on IR control products.)

28. **TRIGGER -** (1 mono 3.5mm mini jack) Connects to the 12V Control IN Terminal on an external amp or powered subwoofer. Check amp or sub Control IN polarity and voltage rating before making any connections. (Trigger Out ON = 12VDC) Trigger Out Polarity: TIP= +12VDC; SLEEVE =GND.
    The Trigger jack is governed by one of three setup options:
    Source Setup - The jack turns ON (12VDC)/OFF (0VDC) when any Source configured for YES/NONE on the Source Setup 'Trigger OUT' line is selected and the Setup Menu/Trigger Setup 'Trigger OUT' is set to Source. The jack turns ON (12VDC) for any source set to YES. The jack turns OFF (0VDC) for any source set to NONE. This configurability allows voltage controlled sync for an external device by source.
    Main - The jack turns ON (12VDC)/OFF (0VDC) with M80 ON/OFF Status when the Setup Menu/Trigger Setup 'Trigger OUT' is set to Main.
    Zone 2 - The jack turns ON (12VDC)/OFF (0VDC) with M80 Zone 2 Status when the Setup Menu/Trigger Setup 'Trigger OUT' is set to Zone 2.

29. **AUDIO/VIDEO 1 IN/OUT -** (6 RCA Jacks; 2 S-Video Jacks) Connect to the left and right analog line level audio and composite video inputs and outputs of an audio/video recorder for recording and playback of analog audio and composite video (default configuration). The Audio/Video 1 OUT jacks output analog line level audio and composite or S -Video from the currently selected source. (If the selected source has line level audio and composite or S-Video connections and those connections are selected in the Source Setup.) Audio/Video 1 is selected as a source or for playback by repeatedly pressing the Source button on the M80 Front Panel or by pressing the 1 button on the M80 Remote Control. The Front Panel Display will indicate Source 1. Audio/Video 1 can be renamed and optional digital audio, S-Video, component video and HDMI inputs can be configured in the Source Setup under Source 1.
    Note: HDMI inputs are not down-converted to analog line level audio or composite, S or component video and cannot be recorded. Multi Input audio is not downmixed and cannot be recorded.

    AUDIO/VIDEO 1 IN - Connect to the left and right analog line level audio and composite or S-Video outputs of an audio/video recorder.

    AUDIO/VIDEO 1 OUT - Connect to the left and right analog line level audio and composite or S-Video inputs on an audio/video recorder.

30. **MDP (Metadata Port) -** Connect to the 3-circuit (stereo) 3.5mm mini jack on a Proficient Audio iPod Dock. This connection sends control to and receives metadata from an iPod connected to the iPod Dock. See: Proficient Audio **iPod Dock Installation and User Guide** for complete information.
    Note: The iPod Dock requires separate analog audio connections to the M80 Audio 4 Inputs for audio signal. M80 Source 4 is configured specifically for iPod/iPod Dock.

31. **AUDIO/VIDEO 2 -** (3 RCA Jacks; 1 S-Video Jacks) Connect to the left and right analog line level audio and composite video outputs of a DVD Player, Satellite Receiver, Cable Box or other audio/video device (default configuration). Audio/Video 2 is selected by repeatedly pressing the Source button on the M80 Front Panel or by pressing the 2 button on the M80 Remote Control. When selected, the Front Panel Display will indicate Source 2. Audio/Video 2 can be renamed and optional digital audio, S-Video, component video and HDMI inputs can be configured in the Source Setup under Source 2.

32. **AUDIO/VIDEO 3 -** (3 RCA Jacks; 1 S-Video Jacks) Connect to the left and right analog line level audio and composite video outputs of a DVD Player, Satellite Receiver, Cable Box or other audio/video device (default configuration). Audio/Video 3 is selected by repeatedly pressing the Source button on the M80 Front Panel or by pressing the 3 button on the M80 Remote Control. When selected, the Front Panel Display will indicate Source 3. Video 3 can be renamed and optional digital audio, S-Video, component video and HDMI inputs can be configured in the Source Setup under Source 3.

33. **AUDIO/VIDEO 4 (iPod) -** (3 RCA Jacks; 1 S-Video Jack) Connect to the left and right analog line level audio outputs of a Proficient iPod Dock (default configuration). Audio/Video 4 is selected by repeatedly pressing the Source button on the M80 Front Panel or by pressing the 4 or iPod button on the M80 Remote Control. When selected, the Front Panel Display will indicate iPod. Audio/Video 4 is dedicated for use with the iPod Dock and cannot be renamed. Only the Trigger Out configuration for Audio/Video 4 can be changed in Source Setup.

34. **RS232C -** (1 DB9F Terminal) This terminal is only used during factory firmware updates. Do not make any connections to this terminal.

M80 REAR PANEL FEATURES

35. ZONE 2 - (4 RCA Jacks; 2 S-Video Jacks) Preamp and fixed analog line level audio, and composite and S-Video outputs for connection to external amplifies or a Video Display when the M80 is setup in a 2 Zone configuration.

ZONE 2 OUT - Fixed analog line level audio output connects to the line level IN on an external A/V Receiver or integrated amplifier that will be used to amplify Zone 2 audio and provide volume control. This output can also be used to feed Zone 2 audio to a multi-channel amplifier to add multiple rooms to Zone 2 where individual room volume is controlled with in-wall volume controls. The Zone 2 OUT can also be connected to a TV line level IN, using the TV speakers for sound and volume controlled using the TV Remote.

ZONE 2 PRE-OUT - Variable analog line level audio output connects to the line level audio IN on a external power amplifier for high power output in Zone 2, where volume will be controlled using the M80 Zone 2 Remote Volume Controls. The Zone 2 PRE-OUT can also be connected to a TV line level IN, using the TV speakers for sound and volume controlled using the M80 Zone 2 Remote.

ZONE 2 VIDEO OUT - Composite video output connects to the Composite Video IN on the Zone 2 Video Display. Only outputs video from sources with composite video input connections that are selected in Source Setup.

ZONE 2 S-VIDEO OUT - S-Video output connects to the S-Video IN on the Zone 2 Video Display. Only outputs video from sources with S-Video input connections that are selected in Source Setup.

36. AUDIO 5 IN/OUT -(4 RCA Jacks) Connect to the left and right line level audio inputs and outputs of a tape deck or other audio recording device for recording and playback of analog audio content (default configuration). Audio 5 Out will output line level audio from the currently selected source. (If the selected source has line level audio connections and those connections are selected in the Source Setup.) Audio 5 is selected by repeatedly pressing the Source button on the M80 Front Panel or by pressing the 5 button on the M80 Remote Control. When selected, the Front Panel Display will indicate Source 5. Audio 5 can be renamed and optional digital audio inputs can be configured in the Source Setup under Source 5. Optional composite, S or component video or HDMI inputs can also be configured for video input with Audio 5.
Note: Digital audio inputs (coaxial, optical, HDMI) are not down-converted to analog line level audio and cannot be recorded. Multi Input audio is not downmixed and cannot be recorded.

IN - Connect to the left and right analog line level audio outputs of a tape deck or other analog audio record/playback device. This input can also be used as an analog line level audio source input configured with optional video inputs as an A/V Source IN if Audio 5 OUT is not going to be used for recording.

OUT - Connect to the left and right line level audio record inputs on a tape deck or other analog audio recording device.

37. AUDIO 6 - (2 RCA Jacks) Connect to the left and right line level audio outputs of a CD Player or other device such as a MP3 Player, Music Server, etc (default configuration). Audio 6 is selected by repeatedly pressing the Source button on the M80 Front Panel or by pressing the 6 button on the M80 Remote Control. When selected, the Front Panel Display will indicate Source 6. Source 6 can be renamed and optional digital audio inputs can be configured in the Source Setup under Source 6. Optional composite, S or component video or HDMI inputs can also be configured for video input with Audio 6.

38. SPEAKERS - (14 five way binding posts) The M80 speaker outputs can be configured in multiple configurations, including stereo, 5.1 surround and 7.1 surround. An additional option allows up to a 5.1 surround main room configuration with a stereo second zone, all utilizing the M80 on-board amplifier.
Note: See section **Speaker Placement** for additional information.

FRONT RIGHT/FRONT LEFT - Connect the Front Left + and Front Left - Speaker five way binding posts on the M80 to the Main Room Front Left + and Front Left - Speaker Terminals. Connect the Front Right + and Front Right - Speaker Terminals on the M80 to the Main Room Front Right + and Front Right - Speaker Terminals. These connections are used for stereo, 5.1 Surround and 7.1 Surround configurations.

CENTER - Connect the Center + and Center - Speaker five way binding posts on the M80 to the Main Room Center Speaker + and - Speaker Terminals. These connections are used for 5.1 Surround and 7.1 Surround configurations.

SURR RIGHT/SURR LEFT - Connect the Surr. Left + and Surr. Left - Speaker five way binding posts on the M80 to the Main Room Surround Left + and Surround Left - Speaker Terminals. Connect the Surr. Right + and Surr. Right - Speaker Terminals on the M80 to the Main Room Surround Right + and Surround Right - Speaker Terminals. These connections are used for 5.1 Surround and 7.1 Surround configurations.

SURR BACK RIGHT/SURR BACK LEFT - Connect the Surr. Back Left + and Surr. Back Left - Speaker five way binding posts on the M80 to the Main Room Surround Back Left + and Surround Back Left - Speaker Terminals. Connect the Surr. Right + and Surr. Right - Speaker Terminals on the M80 to the Main Room Surround Back Right + and Surround Back Right - Speaker Terminals. These connections are used for 7.1 Surround and 2 Zone configurations. (See section: **Multizone Configuration** for additional information on Zone 2 configurations.)

40. **SWITCHED AC OUTLET -** (1 switched AC outlet - 50 Watts max power) Connect the AC power cord of a source components that is to be turned ON/OFF with M80 power ON/OFF status to the switched AC Outlet.

M80 REMOTE FEATURES

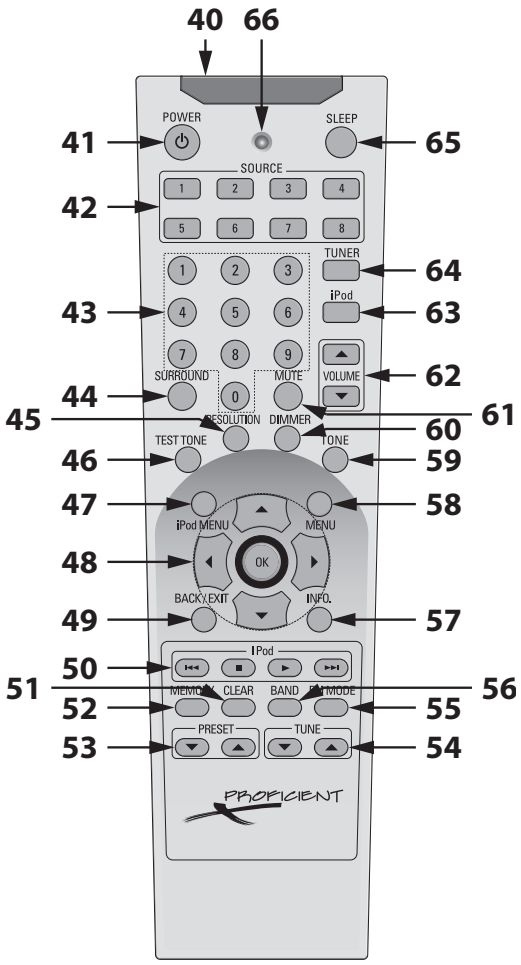


Diagram 3 *M80 Remote Control Features*

40. LENS - Infrared commands that control the M80 are output from LEDs hidden behind this lens. The lens should always be pointed directly at the IR Sensor on the M80 Front Panel (Item 8, Page 11) when pressing buttons on the remote for armchair control. The remote can control the M80 up to 40 feet away.

41. POWER (M80 OFF) - With the M80 ON, (ON/Standby button backlight blue). Press this button to turn the M80 OFF (ON/Standby button backlight red).

42. SOURCE SELECT BUTTONS (M80 ON/Source Select) - With the M80 in Standby, (ON/Standby button backlight red), press one of these buttons to turn the M80 ON and select the desired source. With the M80 power ON, press one of these buttons to select a desired source. The Front Panel Display will indicate the selected source.

43. NUMERIC BUTTONS - With the AM or FM Tuner selected, in Preset Mode (press OK button until PRESET appears on the Front Panel Display), press these buttons to select programmed tuner preset channels. Channels can be tuned directly by first selecting a Band (AM/FM) then pressing the OK button until TUNE appears on the Front Panel Display followed by the channel frequency (94.7, 95.5, etc).

With an optional external XM Ready Tuner connected to the XM Port on the Rear Panel and selected, in All Channel Search, (press the Menu button until ALL CH SEARCH appears on the Front Panel Display), press these buttons for direct numeric tuning of all XM Channels. In Preset Search, (press the Menu button until PRESET SEARCH appears on the Front Panel Display), press these buttons for direct numeric tuning of programmed XM Preset Channels.

44. SURROUND - Press this button repeatedly to review and select audio surround modes (Listening Modes). All Listening Modes are not available for all sources. Available Listening Modes are determined by speaker configuration (5.1 vs 7.1), source connections (analog vs digital) and the encoding or non-encoding of the audio content being played.

45. RESOLUTION - Press this button to open or close the Video Format/Resolution to Display screen. Available resolutions: Auto, 480i, 480p, 720p, 1080i, 1080p.
Note: Resolution to Display should typically be set to Auto. If a resolution is selected that is not compatible with the connected Main Room Video Display, and the screen has no picture, wait 30 seconds and the last compatible setting will be restored automatically.

46. TEST TONE - With the On Screen Display (OSD) open to Setup Menu/Speaker Setup/Speaker Levels press this button to generate the Test Tone for manual speaker level calibration. Improperly calibrated speaker output levels will reduce the 'focus' of the audio surround effects. See section: **Speaker Setup/Manual Speaker Setup/Speaker Levels** for additional information.

47. iPOD MENU - With the iPod Now Playing screen selected, press this button to show the On-Screen Display (OSD) iPod Menu on the Main Room Video Display. Press this button anywhere in the iPod Menu to step back in Menu navigation. The iPod Menu is output on the Composite, S, Component and HDMI Video Monitor OUTs. A Menu Timeout from 5 to 60 seconds, in five second increments, or Off (no timeout) can be set in iPod Setup that will return the OSD to the Now Playing screen if the iPod Menu button is pressed while the Now Playing screen is active. iPod Menu does not output to the Zone 2 Video Display.

48. CURSOR ARRAY/OK - After pressing the Main Menu button on the M80 Front Panel or Menu button on the M80 Remote, press these buttons to navigate the On-Screen Display (OSD) for control, Source Setup and receiver configuration. With the AM/FM or XM Tuner selected press the ◀ ▶ buttons to tune channels. Press the ▲ ▼ buttons to select Preset Channels. For AM/FM, press OK to select TUNE or PRESET Mode. With an iPod/iPod Dock connected to the MDP Port on the M80 Rear Panel,

press the Cursor buttons as is normal for iPod navigation when using the iPod Click Wheel and Center button. The M80 Front Panel Cursor and M80 Remote Cursor have identical functions in any given mode.

49. BACK/EXIT - Press this button when the On-Screen Display (OSD) is open to step backward in menu navigation or ultimately exit the OSD.

50. IPOD - Press these buttons to control an iPod connected to the MDP jack on the M80 Rear Panel.
Note: This functionality requires use of a Proficient Audio iPod Dock. See section **Connections/iPod** for additional information.

51. CLEAR - With a Preset Channel selected in either the AM or FM Band, press this button to delete the Preset Channel. PRESET CLEARED will scroll across the Front Panel Display once and the tuner will automatically tune to the next higher Preset Channel. With a connected XM Ready Tuner selected, and tuned to a Preset, press this button to delete the Preset. 'X' DELETED will appear in the Front Panel Display. ('X' = the XM Preset Number.)

52. MEMORY - With an AM or FM channel tuned, press this button to store it as a Preset. P- - will appear on the Front Panel Display and flash slowly until the Memory button is pressed again. The tuned channel will be stored to the next unused Preset. The Display will return to P- - if the Memory button is not pressed within 5 seconds. With an XM channel tuned in Preset Search mode, press this button to store the channel as a Preset. The next unused Preset Number will appear on the Front Panel Display until the Memory button is pressed again. The tuned channel will be stored to the next unused Preset. The Display will return to last selected Preset if the Memory button is not pressed within 5 seconds. Storing a channel on an already programmed Preset will replace the existing Preset. The M80 can store up to 30 AM, 30 FM and 40 XM Presets.

53. ▼ PRESET - With the AM, FM or XM Tuner selected, a press of this button will select the next previous programmed Tuner Preset. That is, if currently on Preset 4, a press of the ▼Preset button will select Preset 3. If Preset 1 is currently selected, the M80 will return to the highest number programmed Preset. The selected Preset Number is indicated on the Front Panel Display to the right of the tuned frequency and below the tuned frequency in the Tuner On-Screen Display (OSD).

PRESET ▲ - With the AM, FM or XM Tuner selected, a press of this button will select the next programmed Tuner Preset. That is, if currently on Preset 4, a press of the Preset ▲ button will select Preset 5. After selecting the highest number programmed Preset, the M80 will return to Preset 1. The selected Preset Number is indicated on the Front Panel Display to the right of the tuned frequency and below the tuned frequency in the Tuner On-Screen Display (OSD).

54. ▼ TUNE - With either the AM or FM Tuner selected, a press of this button will decrease the tuner frequency by one increment. If the XM Tuner is selected, a press of this button will select the previous XM channel. If the tuned frequency is also a Preset, the Preset Number is indicated on the Front Panel Display to the right of the tuned frequency and below the tuned frequency in the Tuner On-Screen Display (OSD).

TUNE ▲ - With either the AM or FM Tuner selected, a press of this button will increase the tuner frequency by one increment. If the XM Tuner is selected, a press of this button will select the next higher XM channel. If the tuned frequency is also a Preset, the Preset Number is indicated on the Front Panel Display to the right of the tuned frequency and below the tuned frequency in the Tuner On-Screen Display (OSD).

55. FM MODE - With the FM Tuner selected, press this button to switch the FM Tuner between stereo and mono modes. Typically, FM Mode should be left in the stereo mode. The mono setting can be useful for cleaning up background noise when tuned to weak stereo channels. The Front Panel Display will indicate ST for stereo and MN for mono between the tuned frequency and Preset number. The On Screen Display (OSD) will indicate FM STEREO or FM MONO in the lower left corner.

56. BAND - With the M80 ON and the Tuner selected, press this button to cycle through the AM, FM and XM Bands.

57. INFO - With any one of Sources 1, 2, 3, 5, 6, 7 or 8 selected, press this button to open the M80 Information Screen on the Main Room Video Display. The Information Screen will indicate the Audio Input, Video Input, Speaker Setup (incoming audio signal configuration), Resolution to Display, Input Audio Format (audio encoding), Listening Mode, Volume and Trigger Out settings for the currently selected source. 'OSD INFO' will appear on the Front Panel Display. Press again to turn the Information Screen OFF. The Information Screen will not open when AM/FM/XM Tuner or iPod (Source 4) is selected.

M80 REMOTE FEATURES

58. MENU - With any one of Sources 1, 2, 3, 5, 6, 7 or 8 selected, press this button to open the On Screen Display (OSD) on the Main Room Video Display. The OSD features all M80 setup and many control screens for selecting Listening Modes, adjusting Lip Sync, Tone Controls, Zone 2 Controls and the Source Setup Menu. 'OSD Menu' will appear in the Front Panel Display. Press again to turn the OSD OFF. With the XM Tuner selected, repeatedly press this button to select the All Channel Search, Category Search or Preset Search modes. The Menu button has no function when the AM/FM Tuners or iPod (Source 4) are selected. The OSD will not appear on the Zone 2 Video Display.

59. TONE - Press this button to access the M80 Tone Controls. Adjust with the Volume ▲ ▼ buttons while the Tone Controls are displayed on the Front Panel Display. Repeatedly press to select: Tone Active (ON), Treble, Bass or Tone Defeat (OFF).

60. DIMMER - Press this button to control of the brightness of the Front Panel Display. When the M80 is turned ON, the Front Panel Display will illuminate to full brightness. One press will dim the display to about half brightness, a second press will restore full brightness to the display.

61. MUTE - With the M80 ON and with any source selected, press this button to cut the amplifier output to the speakers. (There will be no sound coming from the speakers.) 'Mute' will flash in the Front Panel Display. To un-mute the speakers, press the Mute button again. In a multizone configuration Mute will only mute the Main Room speakers; Zone 2 will be unaffected. **Note:** If an external amplifier is connected to the Pre-Out jacks or if a subwoofer is connected to the SW jack, Mute will also mute/un-mute the external amp or subwoofer.

62. VOLUME ▲ ▼ - With the M80 ON press the VOLUME ▲ button to turn volume up; press the VOLUME ▼ button to turn the volume down. The audio output level in dB (decibels) will be displayed on the Front Panel Display while either button is being pressed and for three seconds after a volume adjustment is made.

63. iPOD (M80 ON/iPod Select) - With the M80 in Standby, (ON/Standby button backlight red), press this button to turn the M80 ON, select the iPod Input (Audio 4) and activate the iPod On-Screen Display (OSD). With the M80 ON, press this button to select the M80 iPod Input (Audio 4) and activate the iPod On-Screen Display (OSD). An iPod connected to the MDP jack via a Proficient Audio iPod Dock (option, available separately) can be controlled with the iPod buttons on the M80 Remote and Cursor buttons on the M80 Remote or Front Panel.

64. TUNER (M80 ON/Tuner Select) - With the M80 in Standby, (ON/Standby button backlight red), press this button to turn the M80 ON, select the Tuner Input and activate the Tuner On-Screen Display (OSD). The M80 will turn ON to the last Tuner Band selected (AM/FM/XM). With the M80 ON, press this button to switch to the Tuner Input. The M80 will switch to the last Tuner Band selected (AM/FM/XM). Repeatedly press the button to select AM, FM or XM. The AM/FM Tuner is an internal tuner; XM requires connecting an optional external XM Ready Satellite Radio Tuner to the XM Port on the M80 Rear Panel.

65. SLEEP - With the M80 ON and with any source selected, press this button to turn on the M80 Sleep Timer. Sleep Timer durations from 15-90 minutes, in 15 minute increments, can be set by repeatedly pressing the Sleep button until the desired Sleep Timeout is set. The Front Panel Display will dim to half brightness and the remaining time to OFF will be displayed for the duration of the Sleep Timeout. The Front Panel Display will illuminate full brightness for one second for each minute Sleep Timeout duration is reduced. To cancel Sleep Timer, repeatedly press the Sleep button until 'Sleep Off' appears on the Front Panel Display.

66. IR OUTPUT LED - One, red LED flashes while the remote is outputting IR commands.

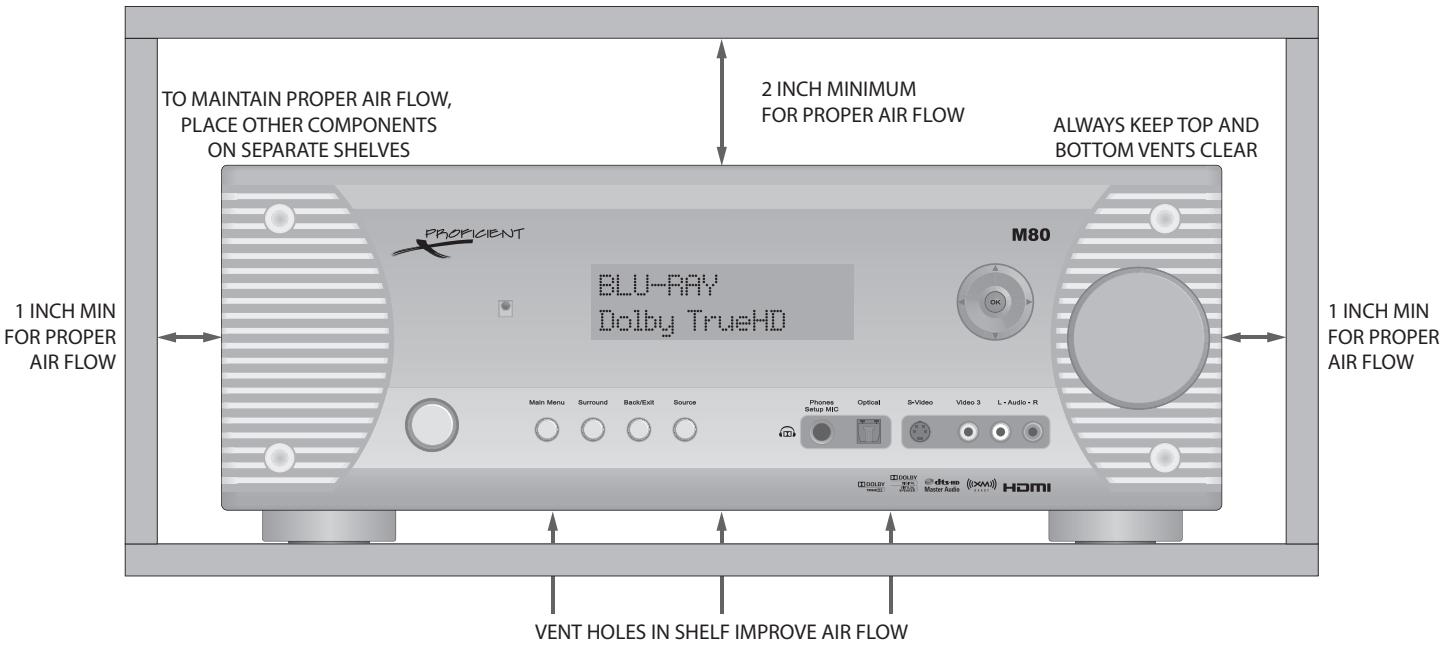


Diagram 4 *M80 Air Flow Requirements*

AIR FLOW

The Proficient M80 is designed to run cool under most normal operating conditions but may run warm in certain modes. The highly sophisticated nature of processing and syncing audio surround modes with video up and down conversions while running a high-current seven-channel amplifier can generate a certain amount of heat dissipation that needs to be properly ventilated.

The M80 features two cooling fans that are internally mounted to the bottom of the chassis. These silent fans will automatically turn on and off when necessary to keep the M80 operating in a proper thermal range. When installing the M80 it is critical that the fan openings and all chassis vents be kept clear to assure proper air flow.

Closed spaces such as equipment cabinets and racks can get hot with the heat generated by microprocessors and motors in various devices. Providing proper ventilation for good air flow will help keep the temperature down and protect not only the M80 but all system components and help preserve their longevity.

When installing the M80 a few easy steps should be taken to assure proper air flow:

1. Never block the fan openings on the bottom of the M80.

2. Never block the vent holes on the top, bottom or sides of the M80.

3. Never remove the feet on the bottom of the M80.

4. Leave at least 2 inches above and 1 inch on each side of the M80 for free air flow.

5. Whenever possible, provide vent holes in the shelf under the M80 to increase air flow into the bottom of the unit.

6. Leave the back of the cabinet as open as possible for good air circulation.

7. Place other system components on separate shelves.

8. Install fans in cabinets and racks when equipment is generating high heat levels.

SPEAKER PLACEMENT

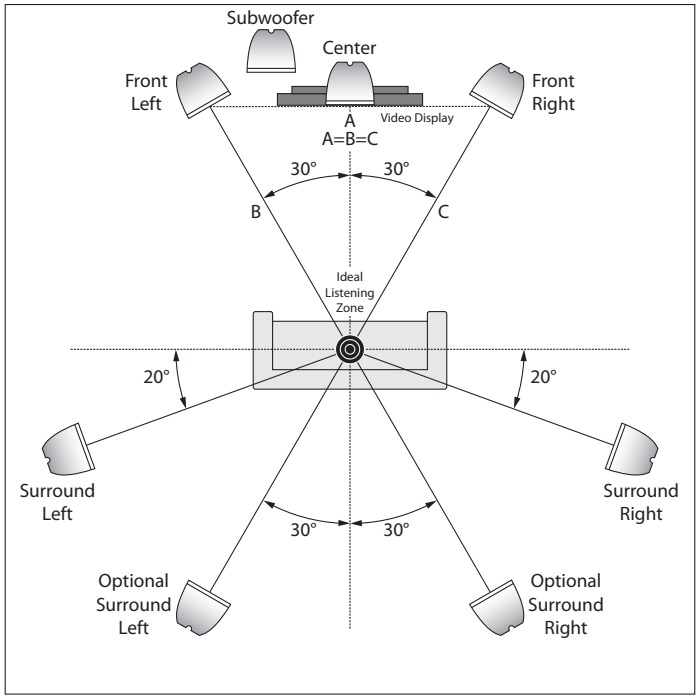


Diagram 5 *5.1 Speaker Placement*

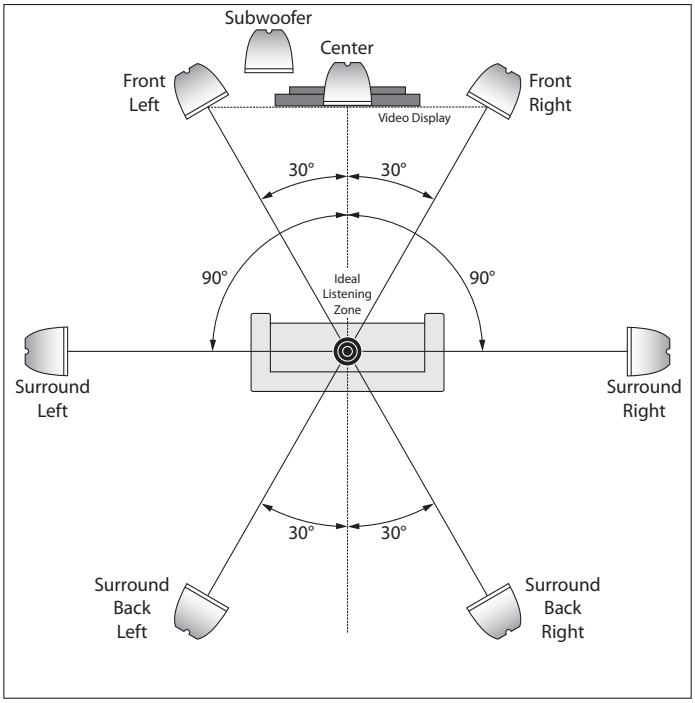


Diagram 6 *7.1 Speaker Placement*

SPEAKER PLACEMENT

The Proficient M80 can be setup for several different speaker configurations. They include: stereo, 5.1 Surround, 7.1 Surround and 5.1 Surround with a 2nd stereo zone. The following are brief descriptions of the different speaker configurations with instructions for speaker placement. For descriptions of the various Listening Modes and their compatibility with the different speaker configurations, see section: **Operating the M80/Listening Modes**.

Stereo - Two speaker configuration that would typically be used when a 5.1 or 7.1 configuration is not practical, given the room layout, or if surround speakers are not available. A subwoofer can be added in this configuration by utilizing the SW PRE-OUT (subwoofer) jack.

5.1 Surround - Six speaker configuration including Front left/right, Center, Surround left/right speakers and a Subwoofer. With appropriately encoded content, in a 5.1 system, most of the dialog (voice) gets sent to the Center channel speaker. With the Center speaker positioned directly above or below the TV or Video Display, voices seem to emanate directly from the screen. The Front left and right speakers typically fill space with ambient sound (street noise, the sounds in a room, crowd noise, etc) and soundtrack music. The Surround left/right speakers will not always be playing. They will typically produce sounds that would naturally occur behind the listener such as reflected sound off a back wall or a plane flying overhead from front to rear. Low frequencies, (bass) get sent to the Subwoofer. A discrete Subwoofer channel enhances natural low frequency sounds in explosions, jet engines, the pounding of waves or wind and the music from the sound track.

7.1 Surround - Eight speaker configuration similar to 5.1 Surround but with dedicated Surround left/right (side) and Surround Back left/right positioned speakers for even more realistic reproduction of ambient (environmental) sounds.

5.1 Surround + 2nd Zone - The M80 can be configured to play two different sources in two different rooms at the same time. In this configuration, the Main Room can be configured as a 5.1 Surround system as described above in '5.1 Surround'. The Surround Back speakers that can be used for a 7.1 Surround system can also be configured as amplified stereo audio to a second room. This configuration allows playing one source in 5.1 surround in the Main Room while playing another source, or the same source, in stereo in another room at the same time! Adding an external amplifier to the Zone 2 OUTs will allow a 7.1 Main Room system with a stereo 2nd Zone. See section: **Multizone Configuration** for additional information.

Note: The M80 has certain default capabilities that allow it to perform straight out of the box. However, Main Room speaker calibration for 5.1 and 7.1 configurations and Zone 2 Setup must be done in the On-Screen Display (OSD) under: Setup Menu/Speaker Setup and Zone 2 Controls respectively, to unleash the full potential of the M80.

Determine The Ideal Listening Zone
The area where the user will most likely be sitting when listening to the speakers is the Ideal Listening Zone.

Speaker Placement Relative to the Video Display
For best overall results in creating a realistic sound/visual environment, whenever possible, try to position the Video Display at typical, seated viewing eye level, directly in front of the Ideal Listening Zone. This will allow the viewer to sit in a normal comfortable position, without having to look uncomfortably up, down or sideways at an oddly positioned Video Display. The speakers should ideally be positioned at ear level, referenced to the same seated position. Whenever possible, all speakers (except the subwoofer) should be positioned at the same height. This relative positioning of the Video Display and speakers will create a sound/visual environment that allow the eyes and ears to see and hear as they would in a natural setting.

Once in place, optimizing the speaker configuration with SmartEQ will fine tune the balance of voice and ambient sound to the Ideal Listening Zone, by compensating for speaker placement (if the front/center/surround/back speakers are not equal distances from the listening position) speaker size and general room conditions. See sections below for additional information regarding use of bookshelf, inwall and ceiling speakers.

Placement of Stereo Speakers
If only connecting stereo speakers, (Front left/Front right), the distance between the left and right speakers should as closely equal the distance from one speaker to the listener as possible. (A=B=C) The left and right speakers should also be equal distances from the TV or Video Display for balance with audio/video content. **(Diagram 5)**

Placement of 5.1 Surround Speakers
When placing speakers in a 5.1 Surround configuration, always try to maintain an equal distance from each speaker to the Ideal Listening Zone. The Front left/right speakers should be placed approximately 30° off axis from the center of the video display. The Center channel speaker should be placed directly above or below the Video Display. The Surround right/left speakers should be placed approximately 20° behind the Ideal Listening Zone. If that position is not practical, the Surround speakers can also be placed behind the Ideal Listening Zone approximately 30° off axis from center, essentially in line with the Front left/right Speakers. Subwoofer placement is somewhat less critical in that low frequency information is non-directional. **(Diagram 5)**

Placement of 7.1 Surround Speakers
When placing speakers in a 7.1 configuration, always try to maintain an equal distance from each speaker to the Ideal Listening Zone. The Front left/right speakers should be placed approximately 30° off axis from the center of the Video Display. The Center channel speaker should be placed directly above or below the Video Display. The Surround right/left speakers should be placed directly to the sides of the Ideal Listening Zone, 90° off axis from center. The Surround Back left/right speakers should be placed behind the Ideal Listening Zone approximately 30° off axis from center, essentially in line with the Front left/right speakers. Subwoofer placement is somewhat less critical in that low frequency information is non-directional. **(Diagram 6)**

Bookshelf Speakers
In audio/video applications when using bookshelf speakers, locating the speakers at the same height as the Video Display and at equal distances to left and right of the Video Display will create an effect where the sound emanates from the picture.

Inwall Speakers
Ideally, speaker placement should be similar to that described for bookshelf speakers. Many brands of inwall speakers, including most Proficient models, have pivoting tweeters that can 'focus' the high frequency content directly to the Ideal Listening Zone and compensate for sometimes less than desirable placement so the sound will still be balanced with the Video Display.

Ceiling Speakers
Ceiling speakers are very popular in modern architecture. Ceiling speakers, like bookshelf or inwall speakers, should be placed at an equal distance from each other and the Ideal Listening Zone. Many Proficient ceiling speakers have pivoting tweeters that can 'focus' the high frequency content directly to the Ideal Listening Zone and compensate for sometimes less than desirable placement so the sound will still be balanced with the Video Display.

Subwoofer
Subwoofer placement isn't quite as critical as placement of the left and right speakers. The low frequency output of a subwoofer is non-directional, so the sub can be placed almost anywhere in a room. A little bit of trial and error may help in finding a particularly good location. Refer to the instructions provided with the sub for additional information.

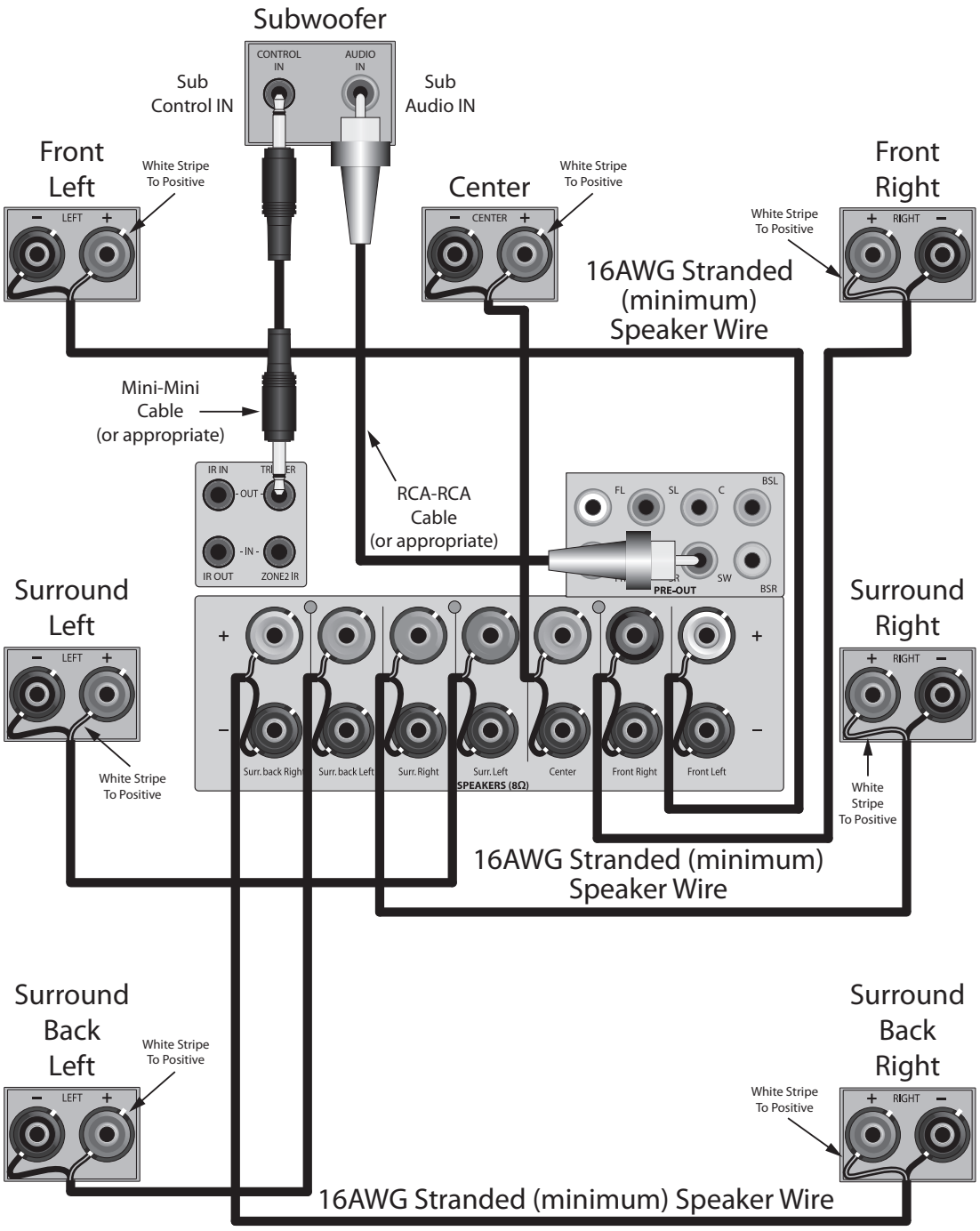


Diagram 7 *Speaker & Subwoofer Connections*

SPEAKER AND SUBWOOFER CONNECTIONS

Diagram 7 shows a typical application for connecting speakers to the M80 in a 7.1 Surround configuration. Connections for a 5.1 Surround configuration are as shown in **Diagram 7** without the Surround Back Speakers. Connections for a stereo configuration are as shown without the Surround or Back Surround Speakers. The subwoofer connection is optional in a stereo configuration.

Note: The M80 can safely drive 4Ω or 8Ω speakers. 8Ω speakers are recommended for cleanest sound, lowest temperature operation and to minimize power consumption. Do not connect more than one speaker directly to a set of Speaker Terminals (+/-) at any time. This can cause the M80 to shut down and may damage the unit. This type of damage is not covered by the Warranty.

For information on Zone 2 speaker connections, see section: Multizone Configuration.

Speaker Connections

1. Use 16AWG (min) 2-conductor stranded speaker wire for speaker connection.
2. Strip approximately 1/2 to 3/4 of an inch off the ends and twist the strands together so there are no loose ends that can cause shorts.
3. Loosen the Speaker Terminals as shown in **Diagram 8** so there is enough room between the post and the collar to feed the stripped wire through without damaging the strands.
4. Tighten the post to secure the wire.
5. Repeat for all Speakers, + and -.
6. Confirm connection and polarity.

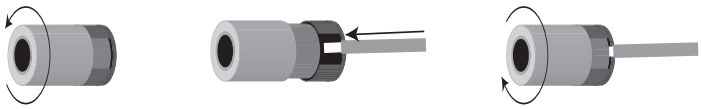


Diagram 8 *Bare Wire Connections*

7. Connect the speaker wires to the appropriate + and - terminals on the speakers.
8. Confirm connection, polarity and position.

Subwoofer

Diagram 7 shows connections for adding a powered subwoofer with a 12V Control Input to the M80 using the PRE-OUT SW and Trigger OUT connections. This configuration will have the subwoofer turn ON when the M80 is turned ON and turn OFF when the M80 is turned OFF. The sub will also mute when the main room speakers mute. To configure a Subwoofer as shown in **Diagram 7**:

Note: There are several different ways to connect a subwoofer to an A/V receiver. One is to have the receiver's speaker level output connected to speaker level inputs on the sub. The sub then acts as a crossover, separating the high and low frequencies with the low frequencies going to the sub and the mid and high frequencies going to the connected left and right speakers. (That configuration would only apply to the M80 in a stereo configuration when only the Front left/right speakers are connected.) The only way to properly configure a 5.1 or 7.1 system is to connect an amplified sub with a mono or LFE (Low Frequency Effects) input to the SW-PRE OUT jack. The following describes typical connections for that type of application, with all other speakers connected to the M80 Speaker Terminals. Please refer to the subwoofer manufacturer's instructions for connection and operating options for varying subwoofer applications.

Note: Some audio encoding provides a discrete LFE (Low Frequency Effects) Channel that is engineered as part of a surround audio mix. Some Listening Modes will 'manufacture' a subwoofer channel by separating low frequency content from the audio program. The M80 accommodates both conditions and outputs LFE or subwoofer information via the Pre-Out SW (subwoofer) jack, based upon the currently selected audio content and Listening Mode.

Subwoofer Connections

Audio

1. Using a mono RCA-RCA cable, connect the Pre-Out SW jack on the M80 to the LFE or Audio Line IN on the subwoofer. Some subs will have adjustable crossover points to match the low frequency cut-off of the left and right speakers when used in a typical stereo satellite/subwoofer configuration. The SmartEQ speaker calibration process will set a subwoofer crossover point and set the SW jack output level. Set the sub crossover point and output levels to a mid point of their adjustable range, and allow the SmartEQ process to fine tune the setting for optimum performance. If, prior to running SmartEQ, the sub level is way too high, or low, adjust as needed to avoid damaging the sub amp or subwoofer driver. Refer to the sub manufacturer's instructions for additional information.

Trigger Out

1. Using a mono Mini-Mini Cable, connect the Trigger OUT jack on the M80 to the Control IN on the subwoofer.
   Note 1: Some subs may have different types of connectors for the Control IN. Be sure to maintain proper polarity when making this connection. Refer to the sub manufacturer's instructions for additional information.
   Trigger Out Polarity: TIP=+12VDC, SLEEVE=GND
   Note 2: Trigger Out has three setup options that are configured in the Source Setup. See sections: **Setup Menu/Trigger Setup** and **Source Setup/Trigger Out** for additional information.

CONNECTIONS

REAR PANEL CONNECTIONS

Antenna Connections

Connect the AM and FM Antennas to the AM and FM Antenna Terminals on the M80 Rear Panel as shown in **Diagram 9**.

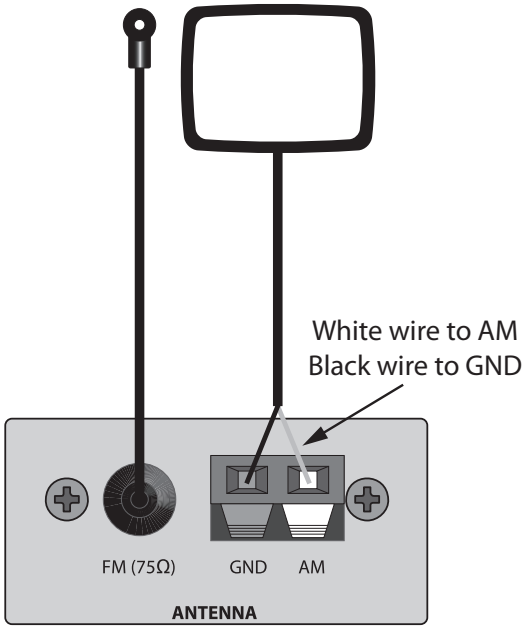


Diagram 9 *Antenna Connections*

AM Antenna

1. Connect the included AM Loop Antenna to the Antenna AM & GND Terminals. The spring clips are color coded, black and white. Connect the black wire from the antenna to the black terminal (GND) and the white wire to the white terminal (AM).

2. Position the AM Antenna for optimum reception. Experiment by moving the antenna high and low and turning it side to side until the best position is found. The antenna can be formed into a shelf top stand. With the antenna wire at the bottom and positioned AWAY from you, carefully pull the molded plastic piece in the middle away from you then down under the bottom of the loop. Pull toward the front until the tabs in the bottom of the loop snap into the slots in the molded piece. Be careful not to pinch the antenna wire. Position the antenna for best reception.

FM Antenna

1. Attach the FM Antenna 'F' connector to the FM(75Ω) Terminal. Extend the antenna to find the optimal position. Stretch the antenna completely vertical (up and down) and then try different side to side positions until optimum reception is attained. Use a small wire brad or thumb tack to secure the antenna to a wall or cabinet through the hole in the plastic end piece.

XM Satellite Radio Tuner

This 'XM Ready' connection requires an external XM Ready Satellite Radio Tuner. The M80 does not have an on-board XM Satellite Radio Tuner.

1. Connect the XM Antenna to the XM Satellite Radio Tuner per the tuner manufacturer's instructions.

2. Make any other necessary connections for proper operation of the XM Satellite Radio Tuner per the XM Tuner's instructions.

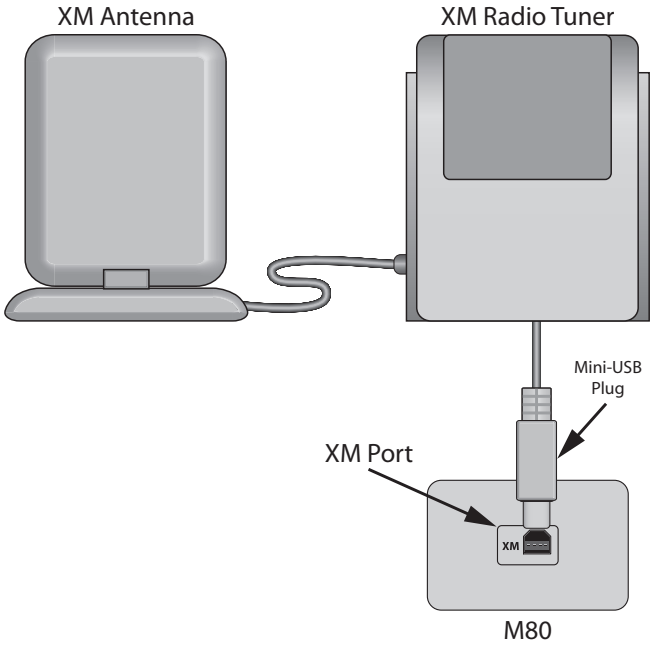


Diagram 10 *XM Tuner Connections*

3. Connect the Mini-USB Cable on the XM Satellite Radio Tuner to the XM Port on the M80 Rear Panel as shown in **Diagram 10.** This connection will provide power and control to the XM Satellite Radio Tuner and receive audio signals and metadata from the tuner. Metadata will be displayed in the M80 Front Panel Display and in the On-Screen Display (OSD) when the Main Room Video Display is ON. CHECK XM TUNER will appear in the Front Panel Display and in the On-Screen Display (OSD) if the XM Tuner is not properly connected.

4. Follow the instructions for the XM Satellite Radio Tuner for antenna position and activation.

Note: XM Satellite Radio requires subscription service from XM Satellite Radio to be able to receive program. To activate an XM Satellite Radio Subscription, call 1.800.XM RADIO (1.800.967.2346) or visit www.xmradio.com and have the Radio ID ready. Follow the instructions for the XM Satellite Radio Tuner to find the Radio ID.

READ THIS SECTION BEFORE MAKING ANY SOURCE CONNECTIONS

NOTE: Source 4 is a dedicated iPod input configured specifically for use with the Proficient Audio iPod Dock (option, available separately). Please refer to the iPod Dock Installation and User Guide for complete information regarding installation, setup and use of the Proficient Audio iPod Dock.

The Proficient M80 is a highly evolved A/V Receiver capable of processing a wide range of audio and video signals. The M80 features analog line level audio, digital optical and coaxial audio, composite, S and component video and HDMI inputs. This flexibility allows connection of most audio and audio/video components whether brand new or many years old.

The availability of different analog and digital audio/video signals will vary from source to source. The M80 source input defaults are set at the factory for the most basic signal level configuration: stereo line level audio and composite video.

The optical and coaxial digital audio, S-Video, component video, and HDMI inputs are selected in the On-Screen Display (OSD) Source Setup allowing each source to be configured for optimum performance from the available options, by source.

Each source connection section features two diagrams: Default and Option.

Default - The Default Diagrams show the connections that match the factory default settings, stereo line level audio and composite video, for Sources 1-3 (Rear Panel) and 8 (Front Panel) and stereo line level audio for Sources 5 & 6. These connections will be appropriate for legacy sources such as VCRs, Tape Decks and other devices that do not have digital audio, S-Video, component video or HDMI outputs.

The analog line level audio input connections are also required when the M80 is being used in the multizone configuration or for recording analog audio. The M80 does not convert digital audio to analog line level audio. There is no analog line level audio output at the Audio 1 OUT, Audio 5 OUT, Zone 2 OUT or Zone 2 PRE-OUT for any device connected with only a digital audio connection. Analog audio connections must be made and selected in Source Setup for any device that is going to be recorded as analog audio or played in Zone 2. In addition, only connected composite or S-Video inputs that are selected in Source Setup will output at the Video 1 Composite or S-Video OUTs or Zone 2 Composite or S-Video OUTs.

Further, some source audio content may sound better as an analog audio signal, so having the analog line level connections made provides additional options for critical listening users.

Option (No HDMI) - The Option Diagrams show the connection options typically available for a given source. These options include the coaxial and optical digital audio connections. These connections provide more dynamic audio signals than the analog connections and Dolby and DTS surround audio from appropriately encoded content. Unless using the multizone capability of the M80, or recording analog audio, only the digital audio connection is required form a source with either a coaxial or optical digital audio output. It is however recommended that both the analog and digital connections are made.

The Option Diagrams also include connections for S-Video, component video and HDMI. Varying combinations of optical or coaxial digital audio and S-Video or component video can be selected in the On-Screen Source Setup to utilize the highest quality audio/video signals that a source will provide, given the available connections and the content being played.

HDMI - HDMI (High Definition Multimedia Interface) is a single connection that provides highest quality digital audio signals including Dolby TrueHD and DTS-HD Master Audio encoding from Blu-ray Disc Players and up to 1080p high definition video resolution from Blu-ray Disc and some Satellite TV Programming. The HDMI connection from any device with an HDMI output is typically the only connection required for that source. (Unless using the multizone configuration or recording analog audio or composite or S-Video.) HDMI content is not downconverted and cannot be recorded. For DVD-Audio HDMI v1.0 or SA-CD HDMI up to v1.1, a separate multichannel analog audio connection from the device to the M80 Multi Input is required to reproduce the DVD-Audio or SA-CD content played on that device. (See **Connections/Multi Input**) Refer to the owners manual for any HDMI device to verify the HDMI version for that device. On-line updates may be available. The M80 is HDMI v1.3a.

SOURCE INPUT CONNECTIONS WORKSHEET

The Appendix of this manual features a Source Input Connections Worksheet that can be used to work out the source connections on paper prior to making the actual connections. Use of this and the other Worksheets is highly recommended to help the installation and setup process go as smooth as possible. Keep these Worksheets with other system documentation for future reference to assist in Troubleshooting or should replacing source components become necessary.

CONNECTIONS

Audio/Video 1, 2 & 3 In Connections (Default)
Connect a Blu-ray Disc Player, DVD Player, Satellite Receiver, Cable Box, Video Game or other audio/video playback device to the Audio/Video 1, 2 or 3 Inputs on the M80 Rear Panel as shown in **Diagram 11**.

These connections allow playback of the A/V sources connected to these inputs. The analog line level audio signals received at these inputs will be output at the Audio 1 OUT, Audio 5 OUT, Zone 2 OUT and Zone 2 PRE-OUT L & R analog line level audio jacks. The composite video signal will be output through the HDMI Monitor OUT as well as the Video 1 OUT and Zone 2 Composite Video jacks. See Section: **Audio/Video 1, 2 & 3 In Connections (Option)** for information on optional connections.

These connections match the Source Setup input default settings for this source, so no additional configuration is required with these connections.

1. Using a stereo A/V patch cable with gold ends, connect the L&R line level audio OUT of the source to the L & R Audio 1 IN on the M80. Connect the composite video OUT of the DVD Player to the Video 1 Composite IN on the M80.

2. Repeat **Step 1** to connect additional A/V devices to the Audio/Video 2 & 3 Inputs using the Analog Audio 2 &3 and Composite Video 2 & 3 Inputs.

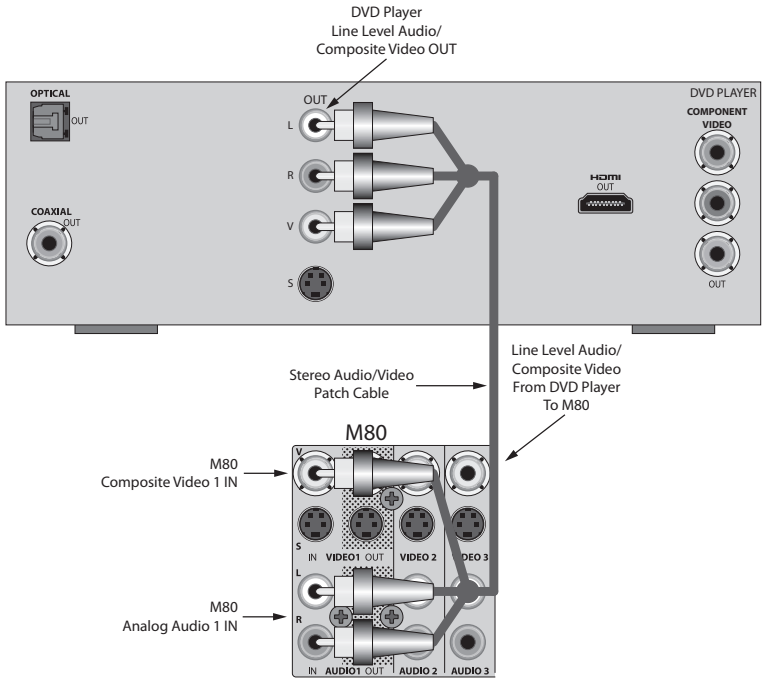


Diagram 11 *Audio/Video 1, 2 & 3 In Connections (Default)*

Note: Source composite video will output from the HDMI Monitor OUT with the 'Resolution to Display' setting in Source Setup set to any resolution other than 480i. Source composite video inputs can be output on the Composite, S and Component Monitor OUTs, but the Resolution to Display setting will need to be changed to lower resolution settings in the Source Setup. The 'Auto' setting should always be tried first.

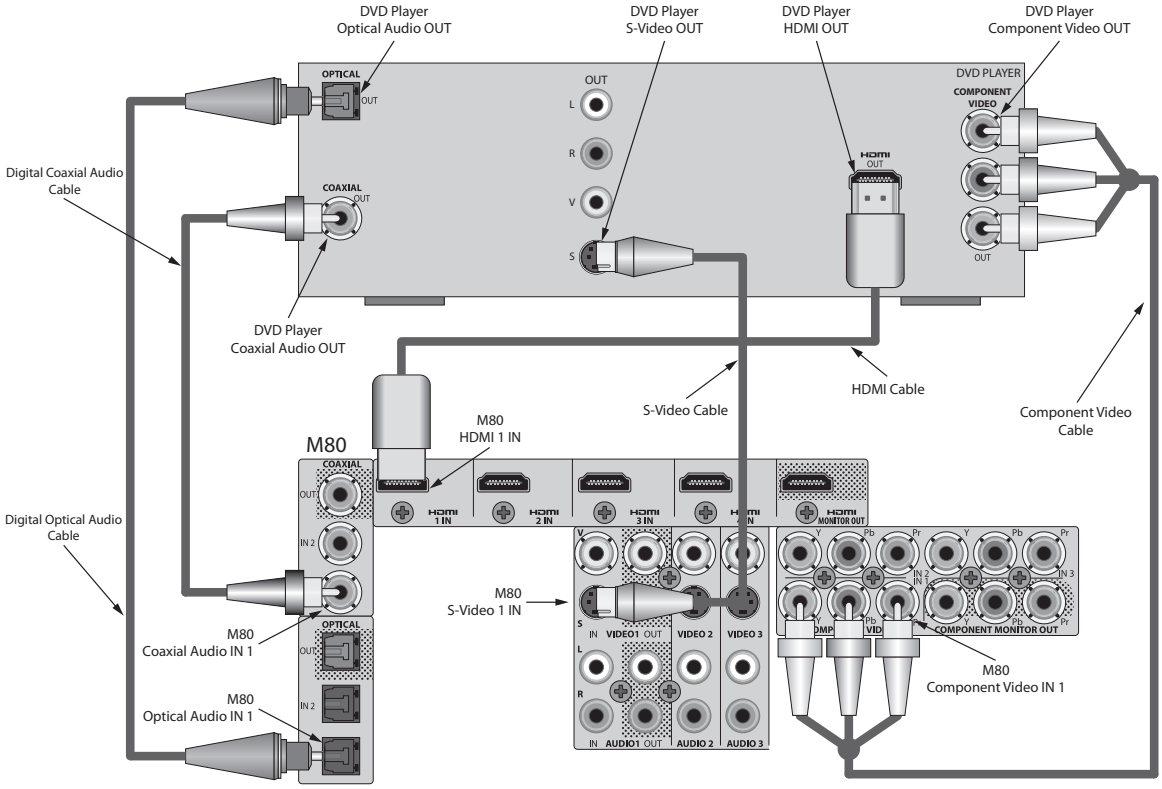


Diagram 12 *Audio/Video 1, 2 & 3 In Connections (Option)*

Audio/Video 1, 2 & 3 In Connections (Option)
Diagram 12 shows the connection options for an audio/video device connected to the M80 Audio/Video 1 IN Connections. Not all of the connections shown are required for a given setup, but are shown here for reference.

Note: All connections in this section with the exception of analog line level audio require configuration in Source Setup to become active. The M80 will default to line level audio and composite video if no changes are made in the Source Setup.

Analog Line Level Audio - Though not shown in **Diagram 12**, the line level audio connections are recommended and are required for record/playback of analog audio content or if the digital audio connections are not going to be used. Copyright protection can prevent some digital audio content from being recorded digitally and the M80 does not down-convert digital audio to analog. The analog line level connections can be used as backup in some cases to record/playback analog audio, by changing the Audio Input configuration in Source Setup. The analog line level audio IN connection is also required to playback audio content from the DVD Player to the Zone 2 Speakers, Zone 2 OUT or Zone 2 PRE-OUT, if used.

1. Follow **Step 1** in Section: **Audio/Video 1 In Connections (Default)**. The Composite Video connection is also required and must be selected for recording composite video and to playback video content to the Zone 2 Composite Video out, if used.

HDMI - The HDMI (digital audio & video) connection should be used to playback HDMI content from any device with an HDMI output. An HDMI connection carries both digital audio and video so when connecting HDMI, no other connections are required for playing that source. However, HDMI input will be not be down-converted to analog audio or composite or S-Video for recording at the Audio/Video 1 OUTs or Audio 5 OUT. HDMI input will be not be down-converted to analog audio or composite or S-Video for the Zone 2 Outputs. Have either the analog audio and composite or S-Video connections made for any source that is going to be recorded from Audio/Video 1 OUT, Audio 5 OUT or output from the Zone 2 OUT, PRE-OUT, composite or S-Video OUTs. Use the digital audio connections to record/playback digital audio.

1. Using an HDMI patch cable with gold ends, connect the HDMI OUT of the Blu-ray Disc Player to HDMI 1 IN on the M80. (Any one of the HDMI inputs can be used.) Be sure to configure the HDMI input in Source Setup.
   Note: For DVD-Audio HDMI v1.0 or SA-CD HDMI up to v1.1, a separate multichannel analog audio connection from the device to the M80 Multi Input is required to properly reproduce the DVD-Audio or SA-CD content played on that device. (See section: **Connections/Multi Input**) Refer to the owners manual for any HDMI device to verify the HDMI version for that device. On-line updates may be available. The M80 is HDMI v1.3a.

Digital Audio - The digital audio connections should be used for any device that does not feature HDMI connections. Use either the coaxial or optical digital audio output connection for a given source, do not connect both. The digital INs will allow playback of digital audio content and input of associated surround encoding. Copyright protection can prevent some digital audio content from being recorded digitally, so having the analog line level audio connections in place for backup is recommended to record the audio content as analog audio. The M80 does not down-convert digital audio to analog. The analog line level audio IN connection is also required to playback audio content from the source to the Zone 2 Speakers, Zone 2 OUT or Zone 2 PRE-OUT, if used.

1. Using either a digital coaxial or optical audio cable, connect the appropriate digital audio OUT of the source to either Digital Coaxial or Optical IN 1 on the M80. (Either coaxial or optical input can be used. Be sure to configure the digital audio input in Source Setup.)

Component Video - When available, the component video connections should be used for any device that does not feature HDMI output. Component video is the highest quality analog video signal. Component video input will output at all Monitor OUTs (with proper Resolution to Display settings) when selected as the Video Input for a given Source in Source Setup.

1. Using a component video patch cable with gold ends, connect the Component Video OUT of the source to Component Video IN 1 on the M80. Be sure to properly match the red, (Pr), blue (Pb) and green (Y) jacks on both ends.

S-Video - Use S-Video for improved video performance over composite video from a source that does not feature component video or HDMI outputs. S-Video input will output at all Monitor OUTS (with proper Resolution to Display settings), the Video 1 S-Video OUT and the Zone 2 S-Video output when selected as the Video Input for a given Source in Source Setup.

1. Using a S-Video patch cable with gold ends, connect the S-Video OUT of the DVD Player to the S-Video 1 IN on the M80.

Audio/Video 2 & 3 Inputs - Repeat the above steps to connect A/V devices to the Audio/Video 2 & 3 Inputs for HDMI, digital audio, component video and S-Video. Connect to any unused HDMI, digital audio, component video or S-Video input. Be sure to properly configure the inputs in Source Setup.

CONNECTIONS

Audio/Video 1 In/Out Connections (Default)
Connect a DVR, VCR or other audio/video record/playback device that requires an in/out loop to the Audio/Video 1 Inputs/Outputs on the M80 Rear Panel as shown in **Diagram 13**. Dual Tuner Cable Boxes and Satellite Receivers with on-board DVRs typically do not require an in/out loop and can be connected as an input only device.

This will allow recording the currently selected A/V source when it is connected with an analog line level audio input and either a composite or S-Video input. These connections also allow playback of the recorded content. See Section: **Audio/Video 1 In/Out Connections (Option)** for information on optional connections.

These connections match the Source Setup input default settings for this source, so no additional configuration is required with these connections.

1. Using a stereo A/V patch cable with gold ends, connect the L&R line level audio OUT of the A/V Recorder to the Audio 1 L & R IN on the M80. Connect the composite video OUT of the A/V Recorder to the Video 1 Composite IN on the M80.

2. Using a stereo A/V patch cable with gold ends, connect the L&R Audio 1 OUT on the M80 to the appropriate L & R line level audio IN on the A/V Recorder. Connect the Video 1 composite OUT on the M80 to the appropriate composite video IN on the A/V Recorder.

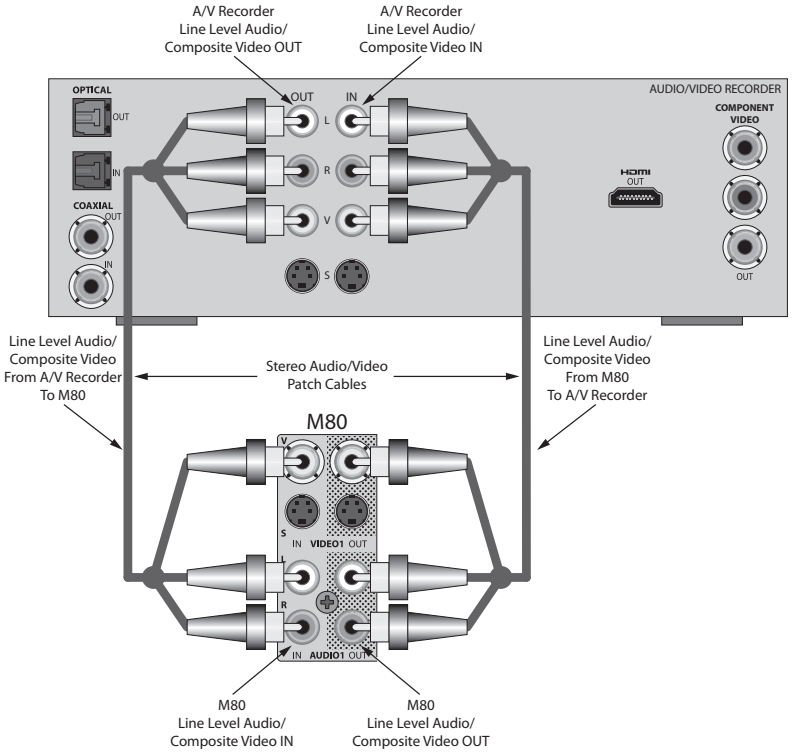


Diagram 13 *Audio/Video 1 In/Out Connections (Default)*

Note: Audio/Video 1 OUT will only output analog line level audio and composite or S video from sources connected with analog line level audio and composite or S video inputs and have those connections selected in Source Setup. Other signals are not converted to these outputs.

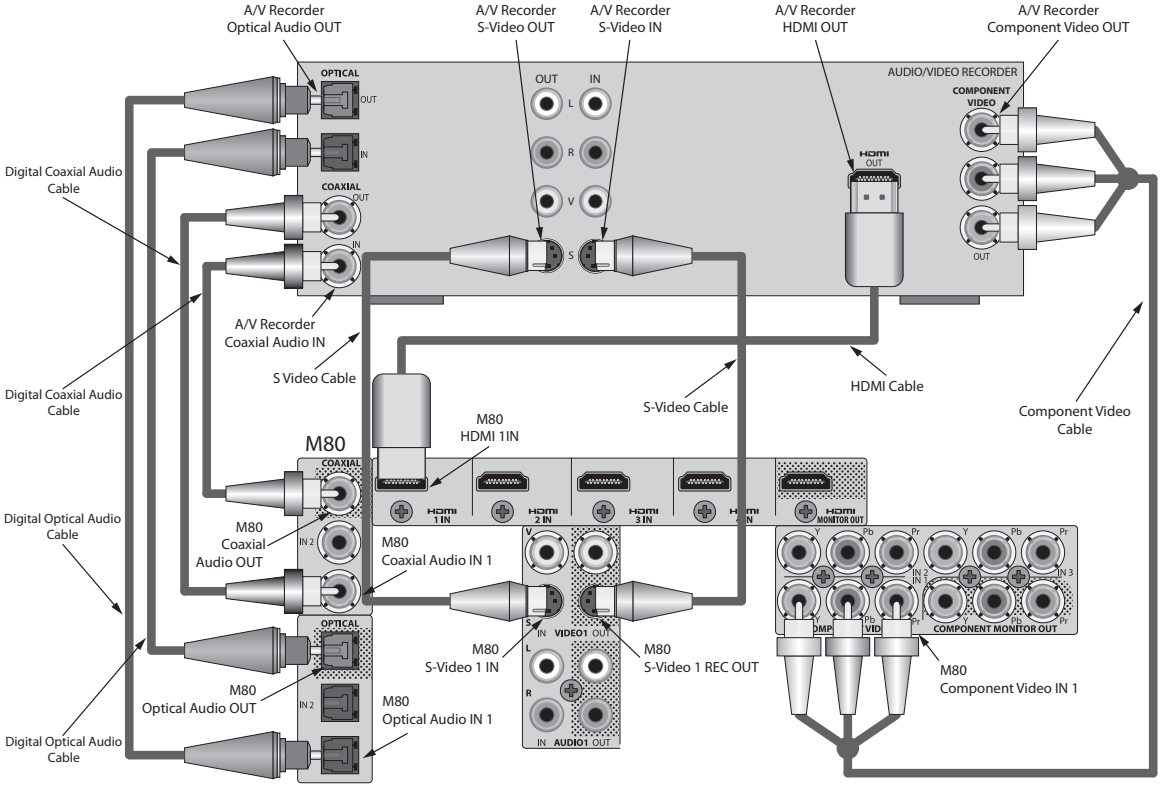


Diagram 14 *Audio/Video 1 In/Out Connections (Option)*

Audio/Video 1 In/Out Connections (Option)

Diagram 14 shows the connection options for an audio/video record/playback device, that requires an in/out loop, that is connected to the M80 Audio/Video 1 IN/OUT Connections. Not all of the connections shown are required for a given setup, but are shown here for reference.

Note: All connections in this section with the exception of analog line level audio require configuration in Source Setup to become active. The M80 will default to line level audio and composite video if no changes are made in Source Setup.

Analog Line Level Audio - Though not shown in **Diagram 14**, the line level audio connections are recommended and are required for record/playback of analog audio content or if the digital audio connections are not going to be used. Copyright protection can prevent some digital audio content from being recorded digitally and the M80 does not down-convert digital audio to analog. The analog line level audio connections can be used as backup in most cases to record/playback analog audio, by selecting the Analog Audio Input, by source, in Source Setup. The analog line level audio IN connection is also required to playback audio content from the A/V Recorder to the Zone 2 Speakers, Zone 2 OUT or Zone 2 PRE-OUT, if used.

1. Follow **Steps 1-2** in Section: **Audio/Video 1 In/Out Connections (Default)**. **Step 2** is not required for a playback only device. The composite video connections are also required and must be selected in Source Setup to record composite video and to playback composite video to the Monitor OUTs or Zone 2 Composite Video out, if used.

S-Video - S-Video is the highest level video signal that can be both recorded and played back in its native format. Video 1 S-Video OUT will only output S-Video from sources with S-Video input connections that are selected in Source Setup. Other video signals are not converted to the Video 1 S-Video OUT. The Video 1 S-Video IN will also output at the Zone 2 S-Video OUT.

1. Using a S-Video patch cable with gold ends, connect the S-Video OUT of the A/V Recorder to the Video 1 S-Video IN on the M80. Be sure to select S-Video 1 as the Video Input in Source Setup.

2. Using a S-Video patch cable with gold ends, connect the Video 1 S-Video OUT on the M80 to the appropriate S-Video IN on the A/V Recorder. (Not required for a playback only device.)

Digital Audio - Use either the coaxial or optical digital audio connections for a given digital audio record/playback device, do not connect both. The digital IN/OUTs typically allow record/playback of digital audio content and associated surround encoding. Copyright protection can prevent some digital audio content from being recorded digitally, so having the analog line level audio connections in place for backup is recommended to record the audio content as analog audio. The M80 does not down-convert digital audio to analog. The analog line level audio IN connection is also required to playback audio content from the A/V Recorder to the Zone 2 Speakers, Zone 2 OUT or Zone 2 PRE-OUT, if used.

1. Using either a digital coaxial or optical audio cable, connect the appropriate digital audio OUT of the A/V Recorder to either Coaxial IN 1 or Optical IN 1 on the M80. (Either coaxial or optical input can be used. Be sure to configure the digital audio input used in Source Setup.)

2. Using either a digital coaxial or optical cable, connect the appropriate coaxial or digital audio OUT on the M80 to an appropriate digital coaxial or optical audio IN on the A/V Recorder. (Not required for a playback only device.)

HDMI - The HDMI (digital audio & video) connections are not required and can only be used to playback HDMI content from the A/V Recorder, if capable. HDMI content is not down-converted and cannot be recorded. Have the analog line level audio and either the composite or S-Video connections made for any source that is going to be recorded from the Audio/Video 1 Analog Audio 1 OUT, and composite or S-Video 1 OUT.

1. Using an HDMI patch cable with gold ends, connect the HDMI OUT of the A/V Recorder to HDMI 1 IN on the M80. (Any one of the HDMI inputs can be used. Be sure to configure the HDMI input used in the Source Setup.)
   Note: For DVD-Audio HDMI v1.0 or SA-CD HDMI up to v1.1, a separate multichannel analog audio connection from the device to the M80 Multi Input is required to properly reproduce the DVD-Audio or SA-CD content played on that device. (See section: **Connections/Multi Input**) Refer to the owners manual for any HDMI device to verify the HDMI version for that device. On-line updates may be available. The M80 is HDMI v1.3a.

Component Video - The component video connections are not required and can only be used to playback component video from the A/V Recorder, if capable. Component video from other sources will be not be down-converted to the Video 1 Composite OUT or Video 1 S-Video OUT for record/playback.

1. Using a component video patch cable with gold ends, connect the Component Video OUT of the A/V Recorder to Component Video IN 1 on the M80. Be sure to properly match the red, (Pr), blue (Pb) and green (Y) connections on both ends.

Audio 5 In/Out Connections (Default)
Connect a Tape Deck, Music Server or other audio record/playback device to the Audio 5 Inputs/Outputs on the M80 Rear Panel as shown in **Diagram 15**.

These connections will allow recording analog audio from the currently selected source if it is connected with an analog line level audio input. These connections also allow playback of the recorded content. See section: **Audio 5 In/Out Connections (Option)** for information on optional connections.

These connections match the Source Setup input default settings for this source, so no additional configuration is required with these connections.

1. Using a stereo RCA-RCA patch cable with gold ends, connect the L&R analog line level audio OUT of the Audio Recorder to the L & R Audio 5 IN on the M80. **Note:** If the device is an audio/video playback only device, use any compatible, unused video input. (See section: **Audio/Video 1, 2 & 3 Connections** for additional information.) Be sure to select the appropriate video input in Source Setup.

2. Using a stereo RCA-RCA patch cable with gold ends, connect the L&R Audio 5 OUT on the M80 to the appropriate L & R analog line level audio IN on the Audio Recorder. (Not required for a playback only device.)

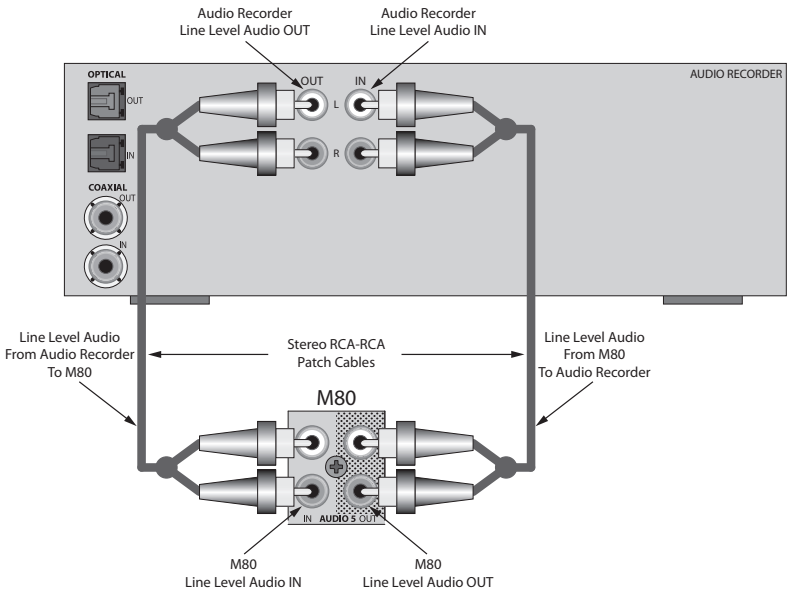


Diagram 15 *Audio 5 In/Out Connections (Default)*

Note: Audio 5 OUT only outputs analog line level audio from sources connected with analog line level audio inputs and have those connections selected in Source Setup. Other signals are not converted to these outputs.

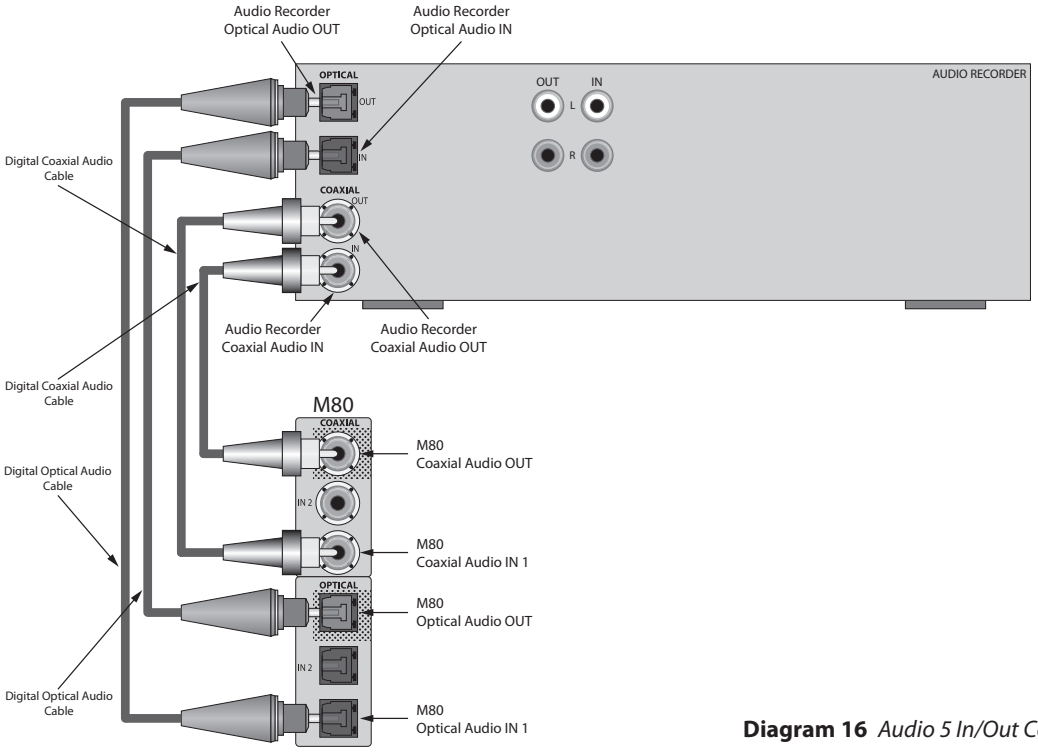


Diagram 16 *Audio 5 In/Out Connections (Option)*

Audio 5 In/Out Connections (Option)
Diagram 16 shows the connection options for an audio record/playback device connected to the M80 Audio 5 IN/OUT Connections. Not all of the connections shown are required for a given setup, but are shown here for reference.

Note: All connections in this section with the exception of analog line level audio require configuration in Source Setup to become active.

Analog Line Level Audio - Though not shown in **Diagram 16**, the analog line level audio connections are recommended and are required for record/playback of analog audio content or if the digital audio connections are not going to be used. Copyright protection can prevent some digital audio content from being recorded digitally and the M80 does not down-convert digital audio to analog. The analog line level audio connections can be used as backup in most cases to record/playback analog audio, by selecting the Analog Audio Input, by source, in the Source Setup. The analog line level audio IN connection is also required to playback audio content from the Audio Recorder to the Zone 2 Speakers, Zone 2 OUT or Zone 2 PRE-OUT, if used.

1. Follow **Steps 1-2** in section: **Audio 5 In/Out Connections (Default)**.

Digital Audio (Digital Audio Recorder, Music Server, CD Player) - Use either the coaxial or optical digital audio connections for a given source, do not use both. The digital IN/OUTs typically allow record/playback of digital audio content. Copyright protection can prevent some digital audio content from being recorded digitally, so having the analog line level audio connections in place for backup is recommended to record the audio content as analog audio. The M80 does not down-convert digital audio to analog. The analog line level audio IN connection is also required to playback audio content from the Audio Recorder to the Zone 2 Speakers, Zone 2 OUT or Zone 2 PRE-OUT, if used.

1. Using either a digital coaxial or optical audio cable, connect the appropriate digital audio OUT of the Audio Recorder to any unused digital coaxial or optical IN on the M80. (Either coaxial or optical input can be used. Be sure to configure the digital audio input used in Source Setup.)
   Note: If the device is an audio/video playback only device, use any compatible, unused video input. (See section: **Audio/Video 1, 2 & 3 Connections** for additional information.) Be sure to select the appropriate video input in Source Setup.

2. Using the same type of connection (digital coaxial or optical) as used in **Step 1**, connect an unused coaxial or digital Audio OUT on the M80 to an appropriate digital coaxial or optical audio IN on the Audio Recorder. (Not required for a playback only device.)
   Note: A Coaxial IN can output to either the Coaxial or Optical OUT and an Optical IN can output to either the Optical or Coaxial OUT. Using the same type of connection (coaxial/optical) for both IN and OUT is recommended.

DVD-Audio/SA-CD: For DVD-Audio HDMI v1.0 or SA-CD HDMI up to v1.1, a separate multichannel analog audio connection from the device to the M80 Multi Input is required to properly reproduce the DVD-Audio or SA-CD content played on that device. A DVD-Audio Player with HDMI v1.1 or better or a SA-CD Player with HDMI v1.2 or better will output uncompressed, multichannel audio via HDMI and can be connected to a HDMI Input on the M80. The M80 will not output this content as either digital or analog audio and therefore cannot be recorded. The Multi Input on the M80 can also be used for analog multi-channel audio for a player that has a proper HDMI rev but there are no HDMI Inputs available on the M80. DVD-Audio and SA-CD multichannel audio are not available on the optical and coaxial connections. Some DVD-Audio and SA-CD multichannel audio content (when appropriately encrypted) gets down-converted to 2-channels at a lower sampling rate when output via the coaxial and optical connections. Some of this content will be copy protected and cannot be recorded via the digital audio connections.
Note: The firmware for many digital audio/video devices can be updated via PC, Internet or Jump Drive download. Check the audio/video device manufacturers' web sites periodically for updates, to assure all devices are functioning at their full capabilities.

Audio 6 In Connections (Default)

Connect a CD Player, Tape Deck, Music Server or other audio playback device to the Audio 6 IN on the M80 Rear Panel as shown in **Diagram 17**.

These connections allow playback of the Audio Source connected to these inputs. The analog line level audio signals received at these inputs will be output at the Audio 1 OUT, Audio 5 OUT, Zone 2 OUT and Zone 2 PRE-OUT L & R line level audio jacks. See Section: **Audio 6 In Connections (Option)** for information on optional connections.

These connections match the Source Setup input default settings for this source, so no additional configuration is required with these connections.

1. Using a stereo RCA-RCA patch cable with gold ends, connect the L&R analog line level audio OUT of the source to the L & R Analog Audio 6 IN on the M80. **Note:** If the device is an audio/video playback device, use any compatible, unused video input. (See section: **Audio/Video 1 2 & 3 Connections** for additional information.) Be sure to select the appropriate video input in Source Setup.

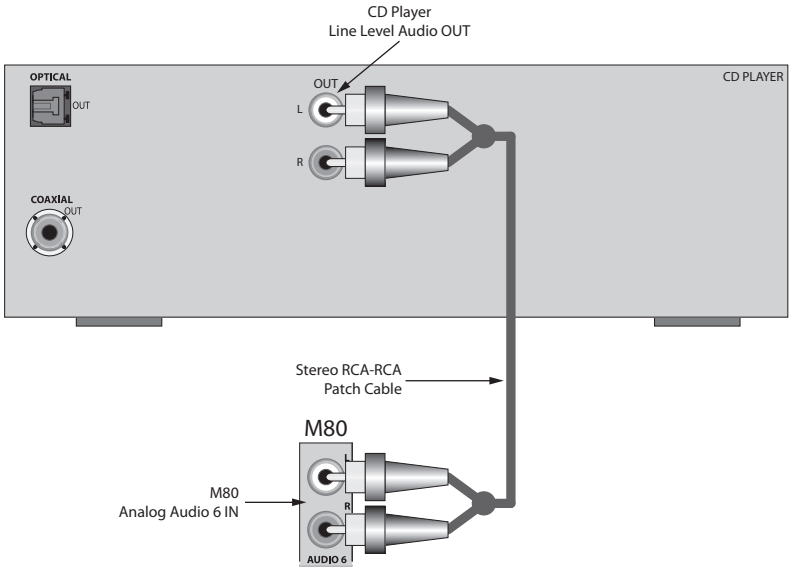


Diagram 17 *Audio 6 In Connections (Default)*

Audio 6 In Connections (Option)

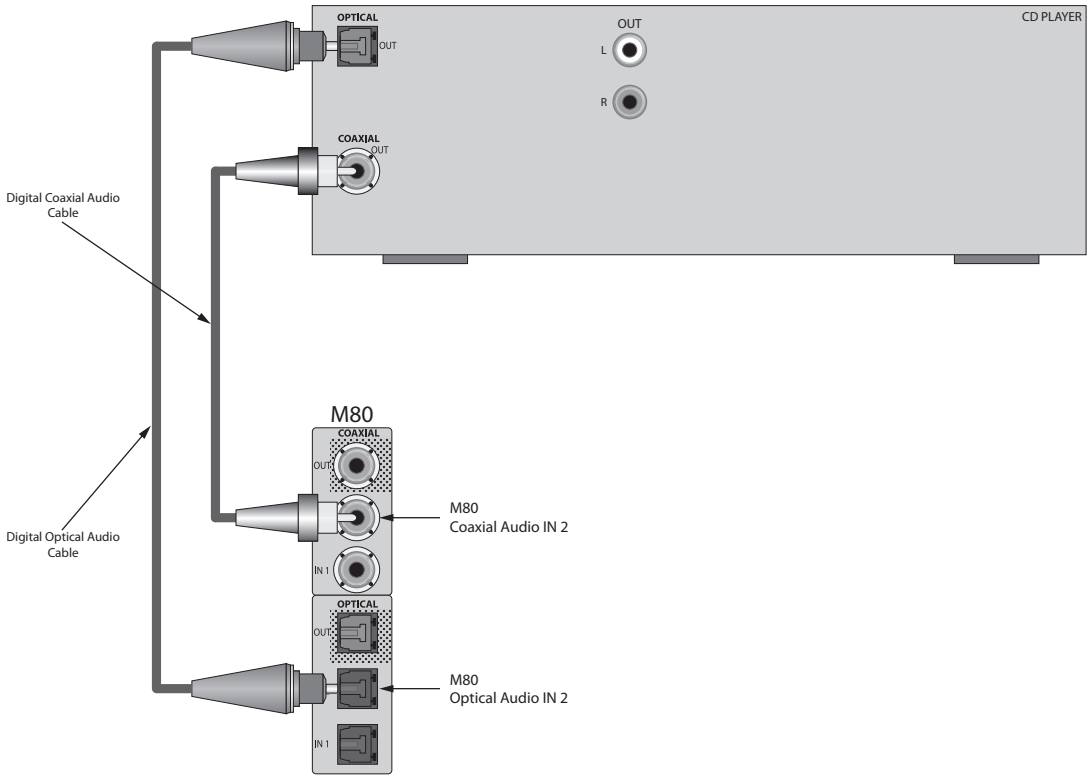


Diagram 18 *Audio 6 In Connections (Option)*

Diagram 18 shows the connection options for an audio playback device connected to the M80 Audio 6 IN Connections. Not all of the connections shown are required for a given setup, but are shown here for reference.

Note: All connections in this section with the exception of analog line level audio require configuration in Source Setup to become active.

Analog Line Level Audio - Though not shown in **Diagram 18**, the line level audio connections are recommended and are required for record/playback of analog audio content or if the digital audio connections are not going to be used. Copyright protection can prevent some digital audio content from being recorded digitally and the M80 does not down-convert digital audio to analog. The analog line level connections can be used as backup in some cases to record/playback analog audio, by changing the Audio Input configuration in the Source Setup. The analog line level audio IN connection is also required to playback audio content from the CD Player to the Zone 2 Speakers, Zone 2 OUT or Zone 2 PRE-OUT, if used.

1. Follow **Step 1** in Section **Audio 6 In Connections (Default)**.

Digital Audio (Digital Audio Recorder, Music Server, CD Player) - Use either the coaxial or optical digital audio output connection for a given source, do not connect both. The digital INs will allow playback of digital audio content and input of associated surround encoding. Copyright protection can prevent some digital audio content from being recorded digitally, so having the analog line level audio connections in place for backup is recommended to record the audio content as analog audio. The M80 does not down-convert digital audio to analog. The analog line level audio IN connection is also required to playback audio content from the source to the Zone 2 Speakers, Zone 2 OUT or Zone 2 PRE-OUT, if used.

1. Using either a digital coaxial or optical audio cable, connect the appropriate digital audio OUT of the source to any unused digital coaxial or optical IN on the M80. (Either coaxial or optical input can be used. Be sure to configure the digital audio input used in Source Setup.)
   Note: If the device is an audio/video playback device, use any compatible, unused video input. (See section: **Audio/Video 1, 2 & 3 Connections** for additional information.) Be sure to select the appropriate video input in the Source Setup.

DVD-Audio/SA-CD: For DVD-Audio HDMI v1.0 or SA-CD HDMI up to v1.1, a separate multichannel analog audio connection from the device to the M80 Multi Input is required to properly reproduce the DVD-Audio or SA-CD content played on that device. A DVD-Audio Player with HDMI v1.1 or better or a SA-CD Player with HDMI v1.2 or better will output uncompressed, multichannel audio via HDMI and can be connected to a HDMI Input on the M80. The M80 will not output this content as either digital or analog audio and therefore cannot be recorded. The Multi Input on the M80 can also be used for analog multichannel audio for a player that has a proper HDMI rev but there are no HDMI Inputs available on the M80. DVD-Audio and SA-CD multichannel audio is not available on the optical and coaxial connections. Some DVD-Audio and SA-CD multichannel audio content (when appropriately encrypted) gets down-converted to 2-channels at a lower sampling rate when output via the coaxial and optical connections. Some of this content will be copy protected and cannot be recorded via the digital audio connections.

Note: The firmware for many digital audio/video devices can be updated via PC, Internet or Jump Drive download. Check the audio/video device manufacturers' web sites periodically for updates, to assure all devices are functioning at their full capabilities.

CONNECTIONS

Multi Input Connections

Connect a Blu-ray, DVD-Video, DVD-Audio or SA-CD Player with 5.1 or 7.1 Analog Audio Outputs to the Multi Inputs on the M80 Rear Panel as shown in **Diagram 19**.

These connections allow playback of the decoded analog multi-channel audio output of a Blu-ray, DVD-Video, DVD-Audio or SA-CD Player connected to these inputs. Any Blu-ray, DVD-Video, or DVD-Audio Player with HDMI v1.1 or better or SA-CD Player with HDMI v1.2 or better will output digital, multi-channel audio and digital video via HDMI and only requires a HDMI connection to the M80. The Multi Input on the M80 can be used for analog multi-channel audio for a DVD-Audio Player with v1.0 or a SA-CD Player up to v1.1, or if there are no HDMI Inputs available on the M80 and the DVD Player is equipped with 5.1 or 7.1 analog audio outputs. The M80 will not output HDMI content as either digital or analog audio and therefore it cannot be recorded. Multi-channel audio for DVD-Audio and SA-CD is not available on the optical and coaxial connections. (DVD-Video surround encoding is provided as is typical of a DVD Player.) Some DVD-Audio and SA-CD multi-channel audio content (when appropriately encrypted) gets down-converted to 2-channels at a lower sampling rate when output via the coaxial and optical connections. Some of this content will be copy protected and cannot be recorded via the digital audio connections.

The analog line level audio signals received at the Multi Input do not output from the Audio 1 OUT, Audio 5 OUT, Zone 2 OUT or Zone 2 PRE-OUT L & R line level audio jacks. The Multi Input Front left/right inputs can be used as a stereo source input, but the Listening Modes will not be available.

The Multi Input connections shown in **Diagram 19** match the Source Setup Analog Audio input default settings for this source, so no additional configuration is required with these connections. The Digital Audio, Video and HDMI connections are all options and require configuration in the Source Setup. See Section: **Audio/Video 1, 2 & 3 In Connections (Option)** for information on optional connections.

1. Using a 7.1 audio patch cable (eight RCA-RCA plugs; or 4 identical stereo RCA-RCA patch cables) with gold ends, connect the multi-channel line level audio OUT of the source to the Multi Input on the M80.

   Note 1: For a player that only has 5.1 analog audio out, use a 5.1 audio patch cable (six RCA-RCA plugs; or 3 identical stereo RCA-RCA patch cables) and do not connect the BSR (Surround Back Right) and BSL (Surround Back Left) jacks on the M80.

   Note 2: For video input, use any compatible, unused video input. See section: **Audio/Video 2 & 3 In Connections (Option)** for additional information. Be sure to select the appropriate video input in Source Setup under Source 7.

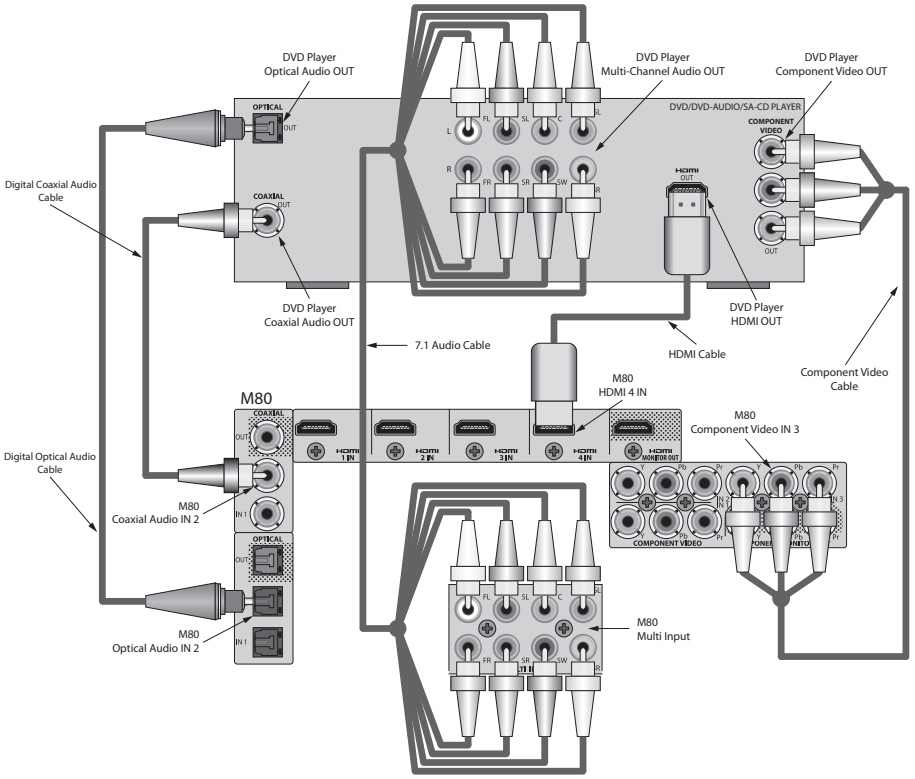


Diagram 19 *Multi Input Connections*

Pre-Out

When configuring the M80 as a 7.1 or 5.1 surround system, connect the Pre-Out S/W (Subwoofer) jack to the LFE or line level input on a powered subwoofer as shown in **Diagram 7** on **Page 24** and described on **Page 25**. (Required for 5.1 or 7.1 configuration.) Connect the remaining Pre-Out jacks on the M80 Rear Panel to an external amplifier for high output audio in large rooms or when using speaker systems that require additional power. (Option)

7.1 System

1. Using a 7.1 audio patch cable (eight RCA-RCA plugs; or 4 identical stereo RCA-RCA patch cables) with gold ends, connect the PRE-OUT jacks on the M80 to the appropriate line level audio INs on the external amplifier(s). (A proper 7.1 Cable will have color coded RCA plugs that match the color coding on the PRE-OUT jacks.)
2. Do not connect the S/W Out on the M80 to the amplifier unless the amp is going to power the subwoofer.
3. Confirm proper connection of audio channels from the M80 to the amplifier(s). Improper connections will have an adverse effect on surround sound performance.
4. Connect the external amplifier(s) to speakers as appropriate.

5.1 System

1. Using a 5.1 audio patch cable (six RCA-RCA plugs; or 3 identical stereo RCA-RCA patch cables) with gold ends, connect the PRE-OUT jacks on the M80 to the appropriate line level audio INs on the external amplifier(s), and do not connect the BSR (Surround Back Right) and BSL (Surround Back Left) Out jacks on the M80 to the amplifier. (A proper 5.1 Cable will have color coded RCA plugs that match the color coding on the PRE-OUT jacks.)
2. Do not connect the S/W Out on the M80 to the amplifier unless the amp is going to power the subwoofer.
3. Confirm proper connection of audio channels. Improper connections will have an adverse effect on surround sound performance.
4. Connect the external amplifier(s) to speakers as appropriate.

Trigger Out

The M80 Trigger Out is a 12VDC control voltage that can be used to turn an external device such as a powered subwoofer **(Diagram 7, Page 24)** or external amplifier ON/OFF as configured in Source Setup.

There are three selectable modes in the Setup Menu/ Trigger OUT.

Source Setup - Turns the Trigger OUT ON/OFF by source selection as configured in the Source Setup.

Main - Turns the Trigger OUT ON/OFF with M80 ON/OFF Status.

Zone 2 - Turns the Trigger OUT ON/OFF with Zone 2 ON/OFF Status.

To connect the Trigger Out:

1. Using a 3.5mm mini-plug, connect the tip to the +12VDC Control IN on the external device to be controlled. (If using a specific connector or plug, confirm the polarity of the device and the connector.) **Diagram 20**

2. Connect the 3.5mm mini plug sleeve to the Control IN GND on the external device.

3. Confirm connection polarity.

4. Plug the mini plug into the Trigger Out on the M80.

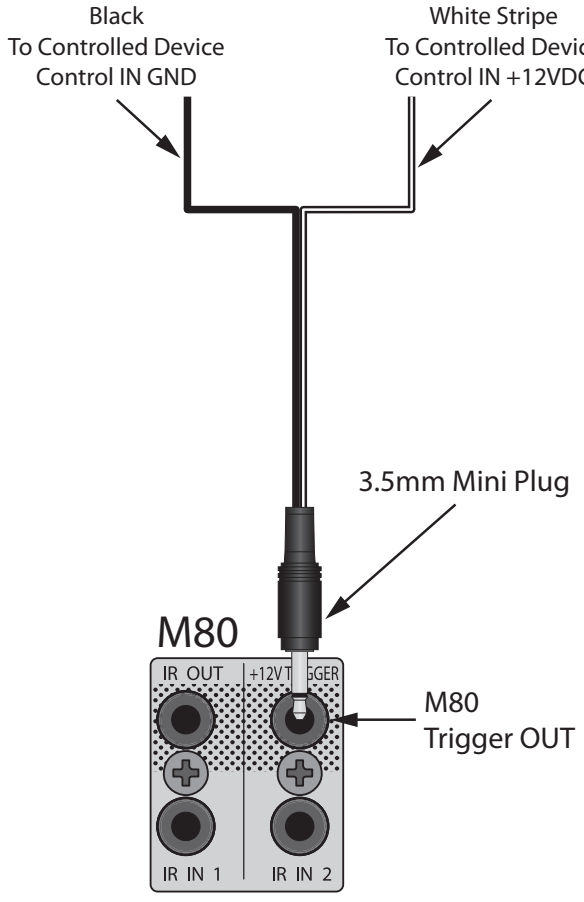


Diagram 20 *Trigger Out Connections*

CONNECTIONS

IR IN/OUT Connections

The IR IN 1 & 2 jacks on the M80 Rear Panel allow direct connection to the Flasher Output of an IR control system. This allows the M80 to be controlled when hidden in an equipment cabinet or closet, or from another room. Using these jacks eliminates the need for attaching an IR Flasher to the Front Panel of the M80.

The IR OUT jack can be connected to source components that are equipped with compatible IR Control Input connections. This eliminates the need for IR Flashers on these devices.

The two IR IN jacks are parallel so one can be used for a Main Room IR control system and one can be used for a Zone 2 IR control system or the Main Room and Zone 2 IR Receivers can be connected in parallel to a single IR Router. The IR commands from the M80 Remote and Zone 2 Remote are discrete for their respective Zones so the IR systems do not need to be isolated.

Diagram 21 shows an application where the M80 IR IN 1 is connected to a Proficient IR Control System. In this example an IR Flasher is used on the DVD Player because it does not have an IR Control Input. Additional Flashers can be added to control additional sources.

Diagram 22 shows an application where the M80 IR IN 1 is connected to a Proficient IR Control System. In this case, all of the sources have compatible IR Control Inputs and are daisy-chained for IR control without using IR Flashers.

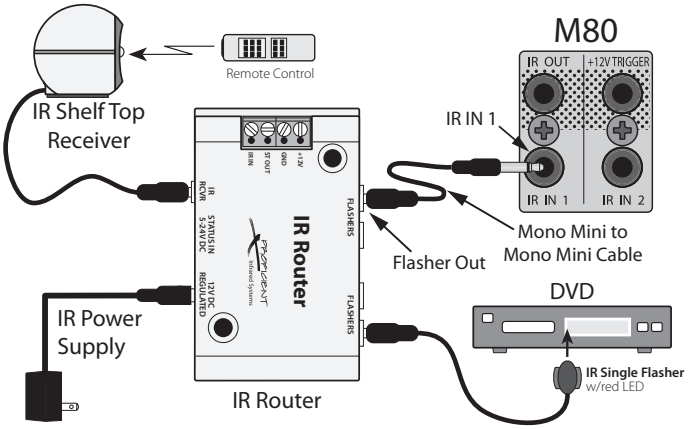


Diagram 21 *IR IN Connections with IR Flashers*

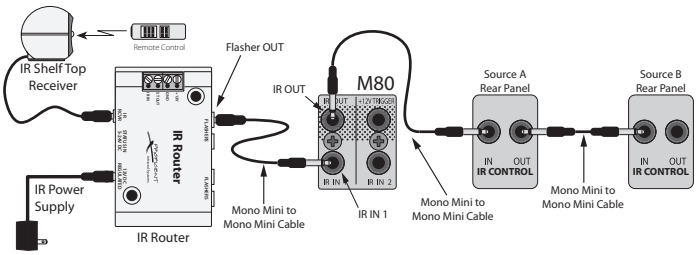


Diagram 22 *IR IN/OUT Connections with IR Control Inputs*

Note: Not all devices that feature IR Control Inputs will be compatible with the Remote IN/OUT connection on the M80. IR Control Inputs typically receive IR signals that have had the carrier stripped but not all will be compatible. In some cases, IR Flashers will have to be used.

To make M80 IR IN/OUT Connections:

1. Using a mono mini-mini cable, connect the Flasher OUT on a Proficient IR Router to the IR IN 1 or 2 jack on the M80 Rear Panel.

2. If using IR Flashers, connect the Flasher mini plug to a Flasher OUT on the IR Router. Attach the Flasher to the device being controlled, over the IR eye on that device. **(Diagram 21)** Add additional Flashers as needed.

3. If using source components that feature IR Control Inputs, using a mono mini-mini cable connect the IR OUT on the M80 Rear Panel to the IR Remote IN jack on the device being controlled.

4. To connect additional devices with IR Control Inputs, connect a mono mini-mini cable to the IR Remote OUT on Source A to the IR Remote IN on Source B as shown in **Diagram 22.** Repeat **Step 4** as needed.

Video Display Connections
Connect a Video Display, Projector or TV to the M80 as shown in **Diagram 23**.

There are four types of video connections that can be made from the M80 to a typical Video Display. (Composite, S and Component Video or HDMI.) The Video Display connection(s) will be determined by the types of inputs available on the Video Display. All analog video inputs on the M80 are up-converted and down-converted to all video Monitor Output formats. HDMI inputs only output as HDMI. The highest quality input available on the Video Display is the one that should be used.

Note: The default 'Resolution to Display' setting is Auto. If using an HDMI connection to the Video Display, this automatically up-converts and outputs all video input content to the Main Room Video Display at 1080p. If using component, S or composite video, (no HDMI) the M80 will establish a 480i connection to the Video Display. See section: **Video Setup** for additional information.

HDMI
If the Video Display has an HDMI Input, it is the best choice. All video input signals will be output on the HDMI Monitor OUT.

1. Using an HDMI Cable, connect the M80 HDMI Monitor OUT to an appropriate HDMI Input on the Video Display as shown in **Diagram 23**.
   Note: HDMI also passes digital audio signals. The Video Display audio should be turned all the way down when using the HDMI connection to the M80 so the HDMI Audio will not interfere with the surround audio from the M80 speaker system.

Component
If the highest level input is component video, connect the M80 Component Monitor OUT to the Video Display and reconnect all sources with HDMI connections to the M80 with component, S or composite video connections as available. The M80 does not down-convert HDMI Video to component, S or composite video.

1. Using a Component Video Cable with gold ends, connect the M80 Component Monitor OUT to an appropriate Component Video Input on the Video Display as shown in **Diagram 23**. Change 'Resolution to Display' to 1080i or lower if necessary.

S-Video
If the highest level input is S-Video, then connect the M80 S-Video Monitor OUT to the Video Display and reconnect all sources with HDMI connections to the M80 with component, S or composite video connections as available. All component and composite video input will be converted to S-Video.

1. Using an S-Video cable, connect the M80 S-Video Monitor OUT to an appropriate S-Video Input on the Video Display as shown in **Diagram 23**. Change 'Resolution to Display' to 480i.

Composite Video
If the highest quality input is composite video, then connect the M80 Composite Video Monitor OUT to the Video Display and reconnect all sources with HDMI connections to the M80 with component, S or composite video connections as available. All component and S-Video input will be down-converted to composite video.

1. Using a composite video cable, connect the M80 Composite Video Monitor OUT to an appropriate Composite Video Input on the Video Display as shown in **Diagram 23**. Change 'Resolution to Display' to 480i.

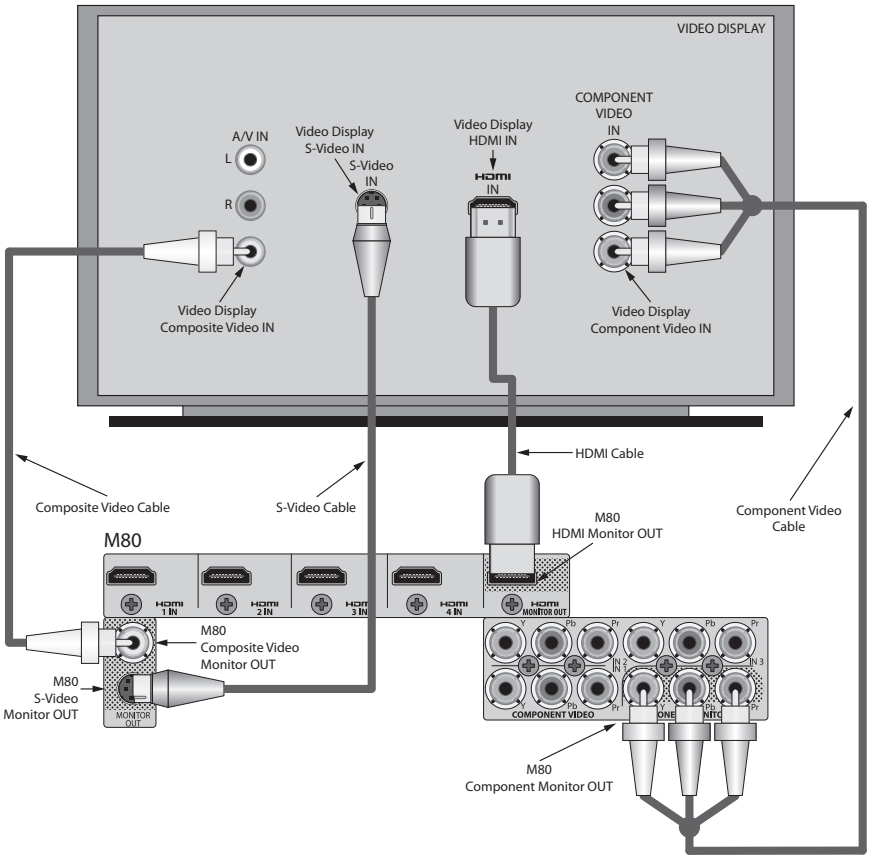


Diagram 23 *Video Display Connections*

CONNECTIONS

AC Outlets Connections

The M80 features one Switched AC Outlet. It turns ON/OFF with M80 power (ON/Standby). It can be used to control power on a device that is to be turned on and off at the same time as the M80. Devices with clocks and timers (DVR, TiVo, VCR) or that are connected to the internet for updates, (Media Servers, Satellite Receivers, Cable Boxes) should be connected to unswitched outlets.

Only connect one device to the switched outlet. Be sure the device draws less than 100W.

1. Connect the power cord for a 'switched' device to the AC Outlet on the M80 Rear Panel as shown in **Diagram 24.**

2. Set the mechanical power switch on the 'switched' device to the ON position.

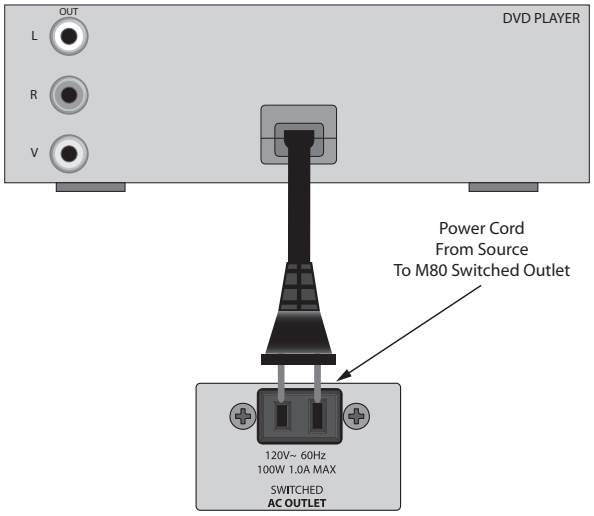


Diagram 24 *Switched Outlet Connections*

AC Power Cord

1. After all connections have been made and confirmed, connect the female IEC plug into the AC Input on the M80 Rear Panel and then plug the AC power cord into an unswitched 110V AC outlet. **Diagram 25**

2. The ON/Standby button will illuminate red around the ON/OFF button. The M80 is ready for action.

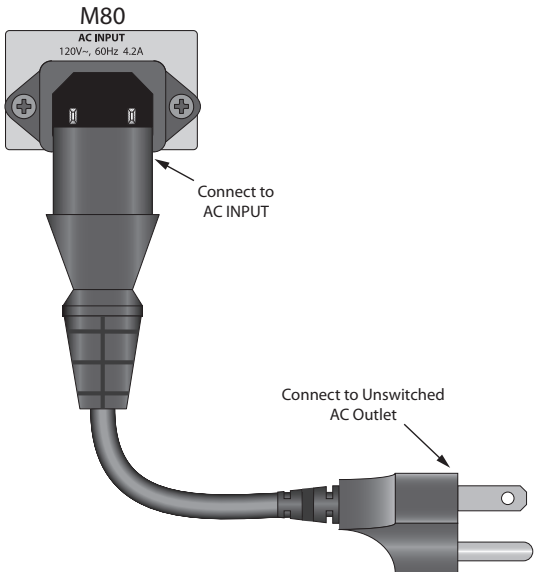


Diagram 25 *AC Power Cord Connections*

FRONT PANEL CONNECTIONS

Audio/Video 8 (Front Panel A/V Connections)

Connect a Video Game, MP3 Player, still or video camera, or other audio/video device that is not a regular system component to the Audio/Video Inputs on the M80 Front Panel as shown in **Diagram 26**. This eliminates having to pull the receiver out of its installed position to get to the rear panel connections.

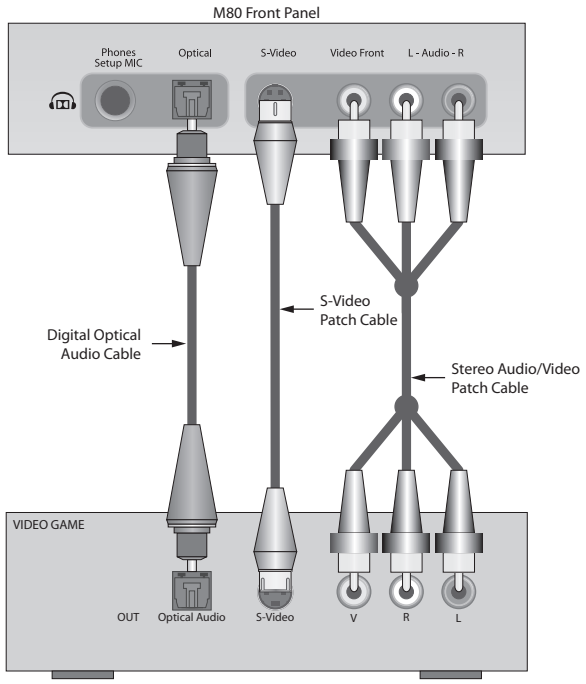


Diagram 26 *Front Panel A/V Connections*

These connections allow playback of the A/V Source connected to these inputs. The analog line level audio signals received at these inputs will be output at the Audio 1 OUT, Audio 5 OUT, Zone 2 OUT and Zone 2 PRE-OUT L & R analog line level audio jacks. The composite and S-Video signals will be output through the Composite and S-Video Monitor Outputs, the Component Monitor OUT, HDMI Monitor OUT as well as the Video 1 OUT and Zone 2 Composite and S-Video Jacks.

The analog line level audio and composite video connections match the Source Setup input default settings for this source, so no additional configuration is required with these connections. Be sure to select the appropriate inputs for digital optical audio or S-Video in the Source Setup.

1. Using a stereo A/V patch cable with gold ends, connect the L & R line level audio OUT on the source to the Front L & R Audio INs on the M80.

2. Connect the composite video OUT on the source to the Front Video IN on the M80.

3. Connect the S-Video OUT on the source to the Front S-Video IN on the M80 if available. (Option.) S-Video will provide improved picture quality over the composite video signal. Be sure to select the S-Video Input in Source Setup.

4. Connect the Digital Optical Audio OUT on the source to the Optical Front Audio IN on the M80 if available. (Option.) Digital optical audio will provide improved audio performance over the L & R analog line level signal and provide surround encoding for appropriately encoded content. Be sure to select the Optical Front Input in Source Setup.

   Note: Be sure to select the appropriate Front Panel audio/video inputs in the Source Setup. Any available rear panel inputs can also be used.

Diagram 27 *Headphones Connection*

Headphones Connection

Connect a pair of Headphones with a 1/4"' stereo phone plug into the Phones/Setup MIC jack on the M80 Front Panel as shown in **Diagram 27.** The Main Room speakers will shut off automatically while headphones are connected.

M80 SETUP

MAIN MENU

Important Note: The M80 must be connected to a Video Display for configuration of source connections, speaker calibration, video output resolution and other system settings using the On Screen Display (OSD) Setup Menu. This configuration must be done prior to operation of the M80.

The M80 features a powerful On Screen Display (OSD) Setup Menu. (**Diagram 28)** The OSD includes some functions that are typically controlled with front panel buttons and knobs on standard receivers. The use of the OSD allows precise adjustment of system settings, providing text and numeric display of volume and tone settings, audio mode settings and video output resolution for easy reference. The OSD is a user-friendly interface that allows configuration of the source connections, speaker configuration and multizone settings (if used) to optimize M80 performance. For convenience, if a source has both analog and digital connections to the M80, the preferred connection for specific content or application can be selected using the OSD, rather than having to fumble around in the equipment rack to disconnect and reconnect different wires.

Some OSD functions: Listening Modes, Tone Controls, and some Zone 2 settings are user preference settings. These settings can be made during normal use, after the M80 has been setup for source connections and system configuration. The user preference settings of the OSD are covered in the section: **Operating The M80**.

Note: All Zone 2 Remote functions, except mute/un-mute, are non-functional while the OSD is active in Menu Mode. Zone 2 Remote functions are normal while the OSD is active for Tuner (AM/FM/XM) and iPod metadata.

USING THE OSD

After confirming all connections as described in the previous sections, turn the M80, all Sources and the Video Display ON.

1. Press the Menu button on the M80 Front Panel or M80 Remote. The OSD default screen **(Diagram 28)** should appear on the Video Display. If the OSD does not appear, confirm that the Video Display input the M80 is connected to is selected. If there is still no OSD, confirm the connection between the M80 and the Video Display.

Note 1: New, out of the box, the OSD should appear on any Monitor OUT connection (composite, S or component video or HDMI).
Note 2: The OSD cannot be activated while the Tuner or iPod inputs are selected.
Note 3: If an HDMI Input has been selected as the Video Input for a given source, the OSD will not appear on a composite, S or component monitor. To view the OSD, switch to a source with an analog video input (composite, S, component) or an audio only source, then press Menu.
Note 4: If a 'Resolution to Display' setting is selected that is not compatible with the system connections and configurations, and there is no picture, please wait. The M80 will return to the previous setting after 30 seconds.

2. OSD navigation is done using the Cursor buttons on the M80 Front Panel or Remote. **(Diagram 28)** The ▲ ▼ buttons provide UP/DOWN movement, the ◀ ▶ buttons provide LEFT/RIGHT movement. The OK button will select certain settings. To exit the OSD press the Menu button again.
Note: Pressing the OK button on some settings, notably video resolution settings, may momentarily turn the M80 Video Monitor Output OFF. Monitor OUT and the OSD will restore when the resolution setting change has been made. If the selected change cannot be made, the M80 will restore to the previous setting within 30 seconds.

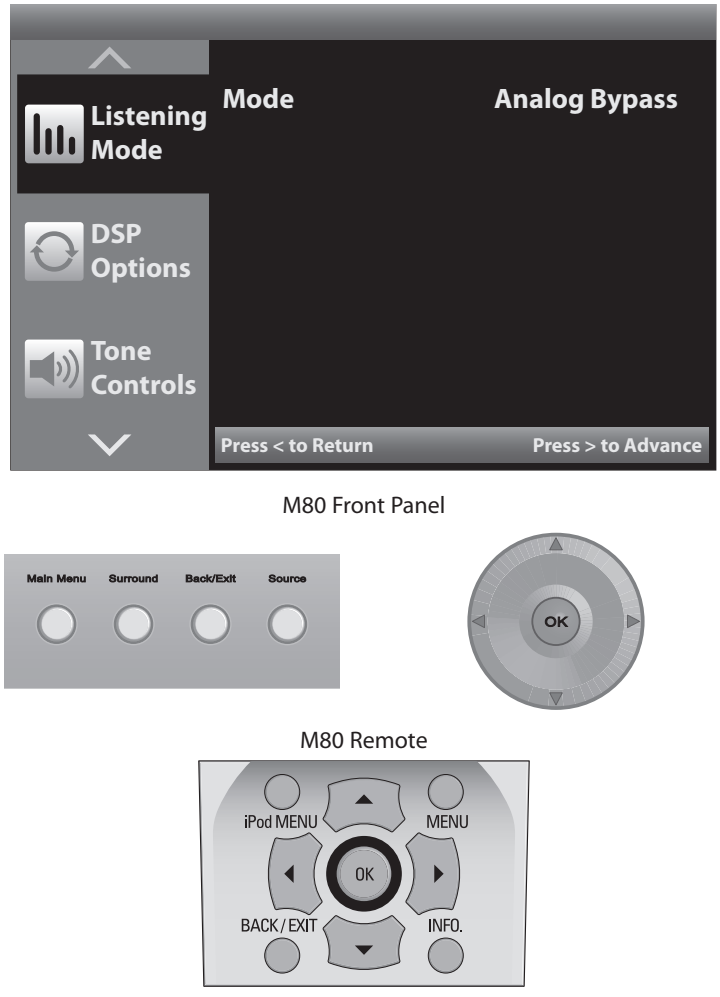


Diagram 28 *OSD Default Screen and Navigation Controls*

SETUP MENU

The Setup Menu is the section of the OSD where source connections, speaker and amplifier configuration, Listening Modes and video output resolution are set. The Setup Menu defaults are configured to accommodate the default connection instructions in the previous sections. If the default source connections were used, the M80 should play the connected sources in stereo with video output for A/V devices at this point to confirm connections and operation.

Even if using the default connections and Setup, there are still some settings that need to me made. Any sources that were connected using any of the 'Option' connections, must be configured for those connections and any other settings that may be affected by the Option connections. Speakers must be calibrated for 5.1 or 7.1 configuration, speaker type and placement. The amplifier needs to be configured for single room or multizone. (Multizone Setup is covered fully in the section: **Multizone Configuration**.)

Accessing the Setup Menu

1. With the OSD open, press the ▼ button on the M80 Front Panel or Remote to navigate to the Setup Menu Screen. **Diagram 29**

If any problems were encountered opening the OSD (no video on the Video Display) follow the instructions in section: Video Setup.

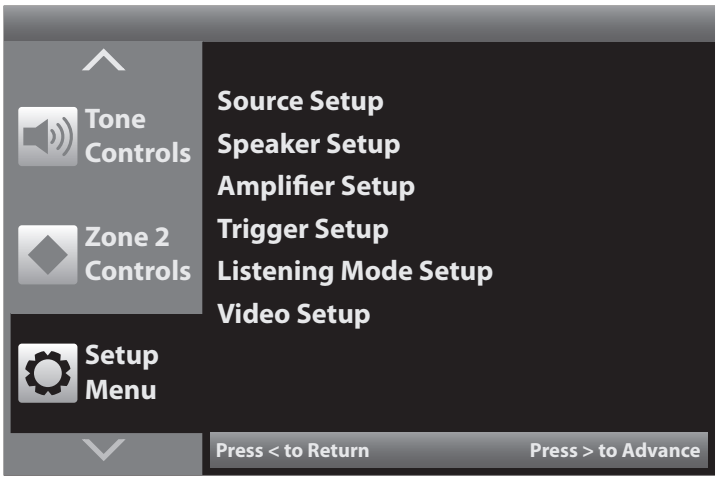


Diagram 29 *OSD Setup Menu*

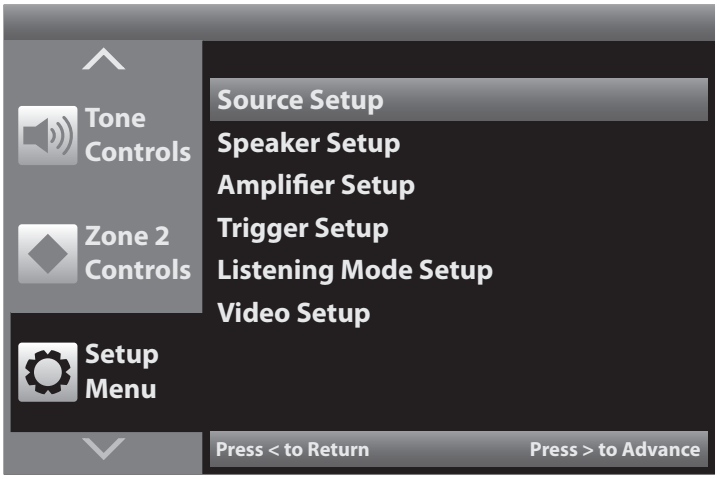


Diagram 30 *Setup Menu*

Source Setup

The Source Setup is where the input connections are configured, sources are named, and the 12 V Trigger Out is configured.

1. With the OSD open, and Setup Menu selected, press the ▶ button on the M80 Front Panel or Remote. Source Setup will highlight in the Setup List. **Diagram 30**

2. With Source Setup highlighted, press the ▶ button on the M80 Front Panel or Remote. The Source Setup Menu will appear. **Diagram 31**

3. In the Source Setup Menu, with Source Setup (Normal View) highlighted, press the ▶ button on the M80 Front Panel or Remote. The Source Setup will appear. **Diagram 32**

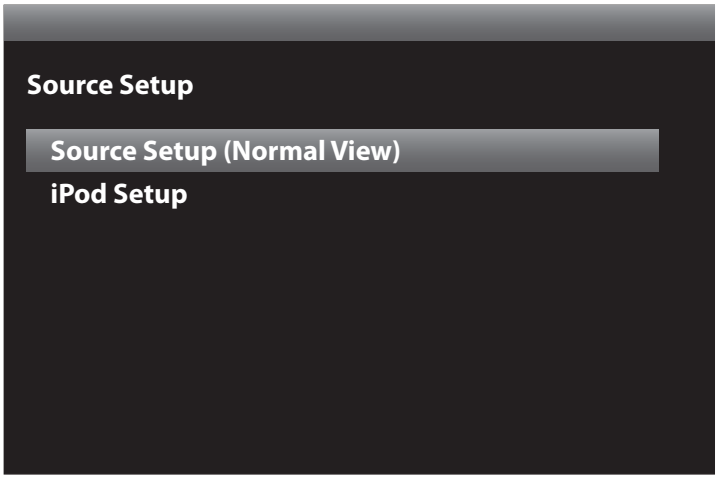


Diagram 31 *Source Setup Menu*

SOURCE SETUP

Source

1. In the Source Setup, with Source highlighted, press ▶. The Source Select Window will become active. **Diagram 33**

2. In the Source Select Window, press ▲ ▼ to select the source to be configured. (Source 1 will be used for example.)

3. With the source to be configured selected, press ◀ so the Source Select Window is no longer active as shown in **Diagram 32**.

Name

Each Source can be given a name up to eight characters in length. Available characters include upper and lower case alphabet, 0-9, a blank space and standard punctuation marks. **Diagram 34**

1. Press ▼ to move the highlight bar to the Name line.

2. Press ▶. The Source Name Window will become active. The cursor will move to the space for the first character.

3. Alternately press the ▲ ▼ and ◀ ▶ buttons to enter the characters for the source name. (Blu-ray used for example.) **Diagram 34**
   Note: The M80 will automatically 'center' the name in the Setup List when finished.

4. When finished, repeatedly press ◀ until the Source Name Window is no longer active. This will save the Source Name.

Analog Audio

This selection will assign the analog audio input on the M80 Rear Panel for the selected Source. (For example Audio 1 will be assigned to Source 1.) **Diagram 35**
Note: If the default connection configuration was used, no changes should be necessary, but confirming the configuration is recommended.

1. Press ▼ to move the highlight bar to the Analog Audio line.

2. Press ▶. The Analog Audio Window will become active.

3. Press ▲ ▼ to select the appropriate input. (Audio 1 used for example.)

4. Press OK to save. If 'Off' is selected, (no assigned analog audio input) the Gain line will turn OFF.

5. When finished, press ◀ so the Analog Audio Window is no longer active.

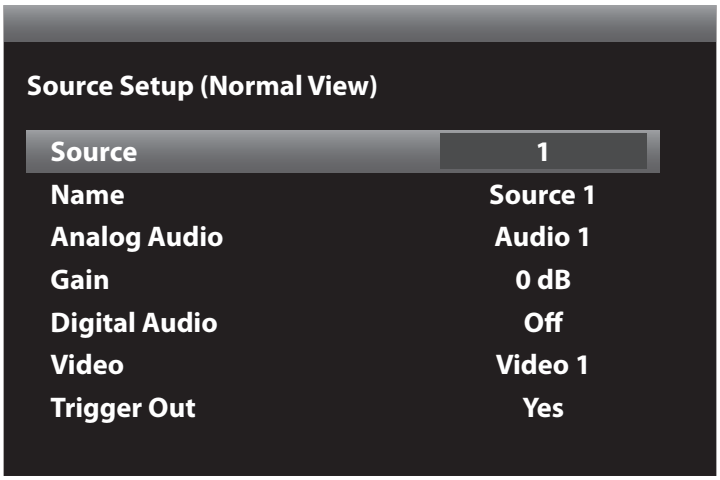


Diagram 32 *Source Setup*

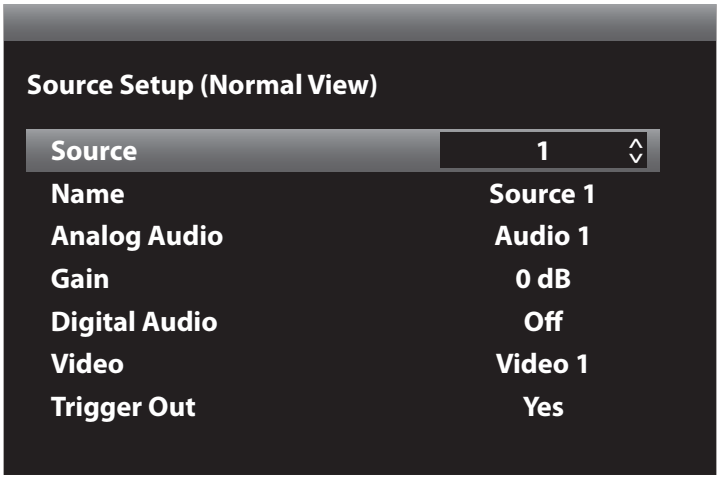


Diagram 33 *Source Select Window*

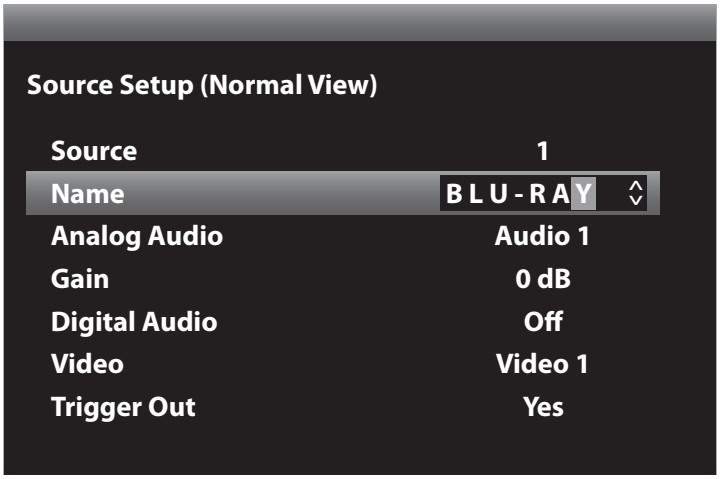


Diagram 34 *Naming a Source*

Gain

This setting will adjust the level of the selected analog audio input. This allows compensation for different output levels on different analog audio devices. **Diagram 36**
Range: +/- 12dB.
Note: The gain settings should be made AFTER all other settings for source, speaker and system configuration have been made.

1. Turn on and play all sources with analog audio connections to the M80. Use similar audio content on all sources so the adjustments will compensate for the actual output levels of the devices and not from comparing shred metal levels to chamber music. Cycle through the sources a couple times to get a feel for which ones are louder and softer when compared to the others.

2. Press ▼ to move the highlight bar to the Gain line. **Note:** The Gain line will turn off for any source with Analog Audio set to 'Off' (no analog audio input assigned).

3. Press ▶. The Gain Window will become active.

4. Press ▲ ▼ to select the appropriate level, if needed. (0dB used for example.)

5. When finished, press ◀ so the Gain Window is no longer active. This will save the analog audio Gain for the selected input.

6. Adjust the Gain for all sources with analog audio connections to the M80 by selecting each source on the Source line and repeating **Steps 2-5** for each source. **Note:** DO NOT select the different Analog Audio Inputs from within a selected source. Change Sources. Not changing sources may result in analog audio inputs being assigned to the wrong source!

Digital Audio

This selection will assign the digital audio input on the M80 for the selected Source. (For example HDMI 1 will be assigned to Source 1 for digital audio.) **Diagram 37**

1. Press ▼ to move the highlight bar to the Digital Audio line.

2. Press ▶. The Digital Audio Window will become active.

3. Press ▲ ▼ to select the appropriate input. (HDMI 1 used for example.)

4. Press OK to save.

5. When finished, press ◀ so the Digital Audio Window is no longer active.

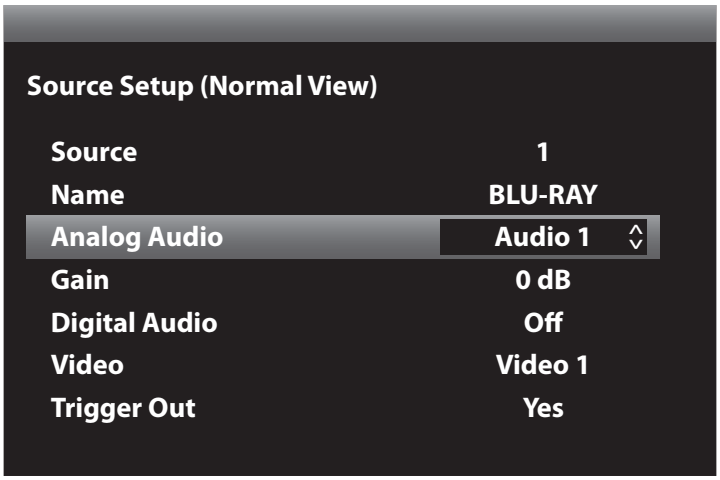


Diagram 35 *Analog Audio Input*

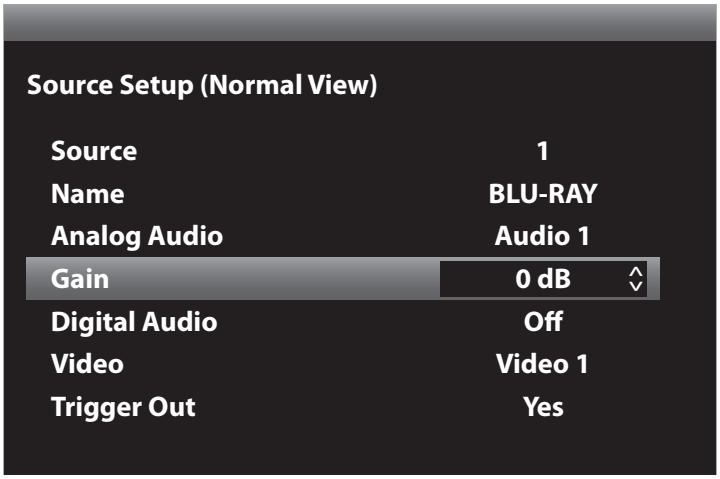


Diagram 36 *Analog Audio Input Gain*

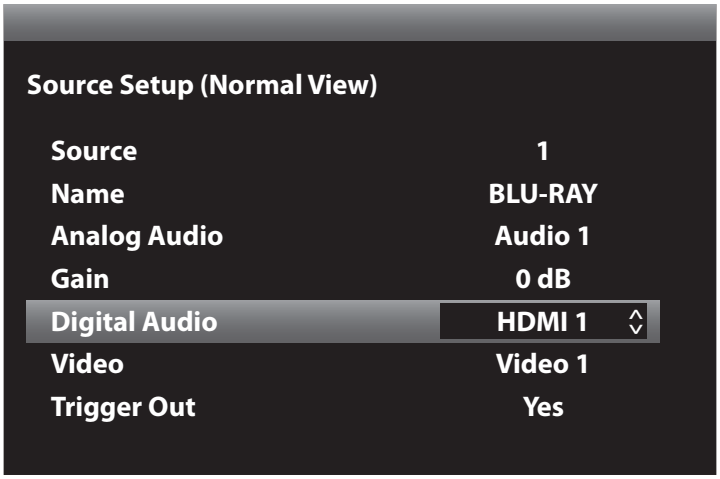


Diagram 37 *Digital Audio Input*

SOURCE SETUP

Video
This selection will assign the video input on the M80 for the selected Source. (For example HDMI 1 will be assigned to Source 1 for video.) **Diagram 38**

1. Press ▼ to move the highlight bar to the Video line.
2. Press ▶. The Video Window will become active.
3. Press ▲ ▼ to select the appropriate input. (HDMI 1 used for example.)
4. Press OK to save. The video output and OSD will turn off and then back on when making the change.
5. When finished, press ◀ so the Video Window is no longer active.

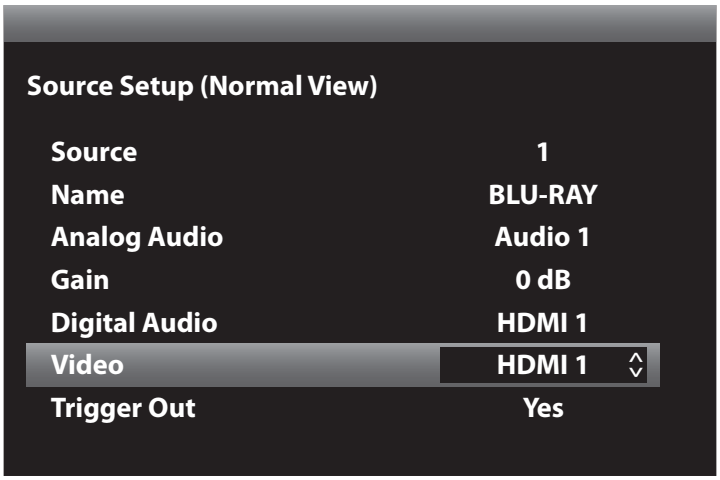


Diagram 38 *Video Input*

Trigger Out
With the Trigger Setup (in the Setup Menu) is set to Source Setup, this selection will set which source selections will activate the 12V Trigger Out. The Trigger Out can be used to activate an external amp, powered subwoofer, screen or lift in the Main Room when specific sources are selected. **Yes = ON; NONE = OFF Diagram 39**
Note 1: There is an additional setting in the Setup Menu under Trigger Setup that determines whether the Trigger Out is activated by M80 ON/OFF, Source Setup or Zone 2 ON/OFF. The settings in this section only determine which sources will activate the Trigger Out when Trigger Out is set to Source Setup.

1. Press ▼ to move the highlight bar to the Trigger Out line.
2. Press ▶. The Trigger Out Window will become active.
3. Press ▲ ▼ to select the appropriate setting.
4. When finished, press ◀ so the Trigger Out Window is no longer active and to save the setting.

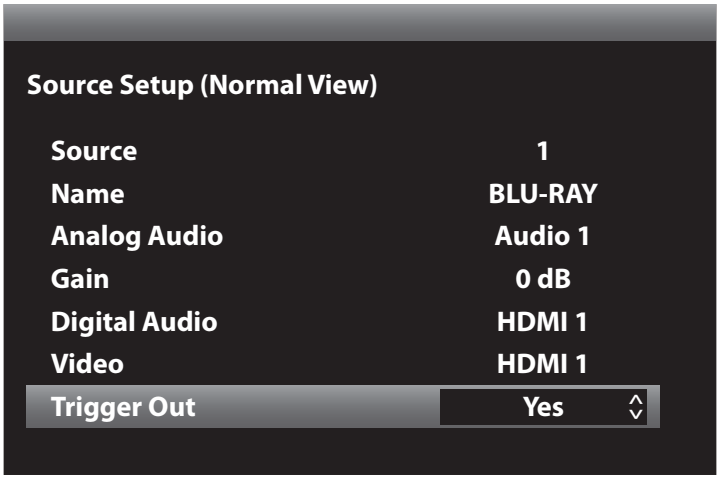


Diagram 39 *Trigger Out*

Finish Source Setup
Repeat all of the Steps in Source Setup for all connected sources. Make selections as appropriate. Reference the Source Connections Worksheets to confirm input settings.

Tuner (AM/FM/XM)
The internal M80 AM/FM Tuner or an external XM Ready Satellite Radio Tuner connected to the XM Port on the M80 Rear Panel do not require Source Setup other than Trigger Out. To change the Tuner Trigger Out setting, if not already open, select a source other than Tuner or iPod and press the Menu button on the M80 Front Panel or Remote. Navigate to the Source Setup, select Tuner as the source and follow the directions in **Trigger Out**, above. See sections: **Operating the Tuner/Presets** and **XM Tuner/Preset Programming** to program AM/FM/XM Tuner Presets.

Exit OSD
When finished, press the Menu button to exit the OSD.

iPod/iPod Dock

An iPod can be connected to the M80 using a Proficient Audio iPod Dock (option, available separately). The iPod Dock creates an interface between the M80 and iPod to allow iPod control from the M80 Front Panel or Remote. Typical iPod Menus and metadata will be displayed in the Front Panel Display and in an iPod OSD on the Main Room Video Display. iPod Menus are navigated as is typical for iPod control when using the iPod Click Wheel and Center button.

Note: The Rear Panel Audio 4 inputs and the MDP jack are dedicated to iPod configuration and specifically for use with the Proficient iPod Dock.

iPod Setup

The iPod Setup is where iPod Dock communication and Menu Timeout are configured for use with the Proficient iPod Dock. **Diagram 41**

1. With the OSD open to the Source Setup Menu and iPod Setup highlighted, **(Diagram 40)**, press ▶. The iPod Setup Screen will appear.

Auto Connect

Selecting Yes on this line will allow the M80 to automatically connect to and communicate with the iPod Dock when an iPod is docked and the M80 is ON. **Diagram 41**

1. Press ▶. The Auto Connect Window will become active.
2. Press ▲ ▼ to select Yes/No. (Yes used for example.)
3. When finished, press ◀ so the Auto Connect Window is no longer active. The setting will save automatically.

Menu Timeout

This setting will determine how long the iPod Menu will remain on-screen after navigating to the iPod Menu from the Now Playing Screen, while the iPod is in Play, before returning to the Now Playing Screen. **Diagram 42**

Range: 5-60 seconds in 5 second increments & OFF.

1. Press ▼ to move the highlight bar to the Menu Timeout line.
2. Press ▶. The Menu Timeout Window will become active.
3. Press ▲ ▼ to select duration. (10 s used for example.)
4. When finished, press ◀ so the Menu Timeout Window is no longer active. The setting will save automatically.
5. Press ◀ once to return to the Source Setup Menu. **Diagram 40**
6. Press ◀ again to return to the Setup Menu. **Diagram 30** Press ◀ twice or Menu to exit the OSD.

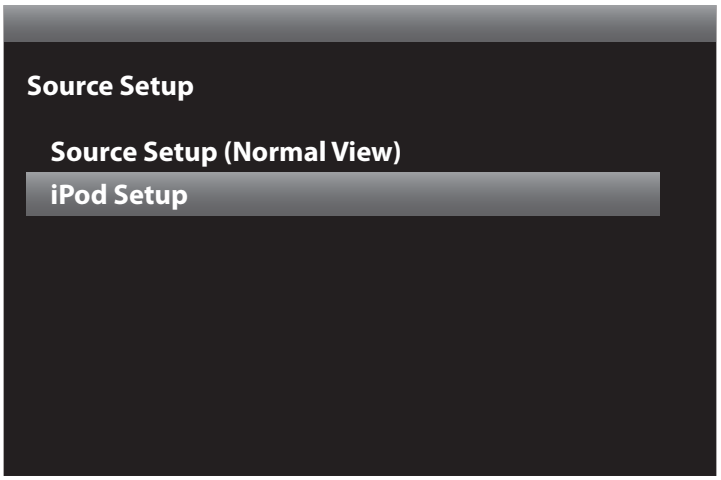


Diagram 40 *Source Setup Menu - iPod setup*

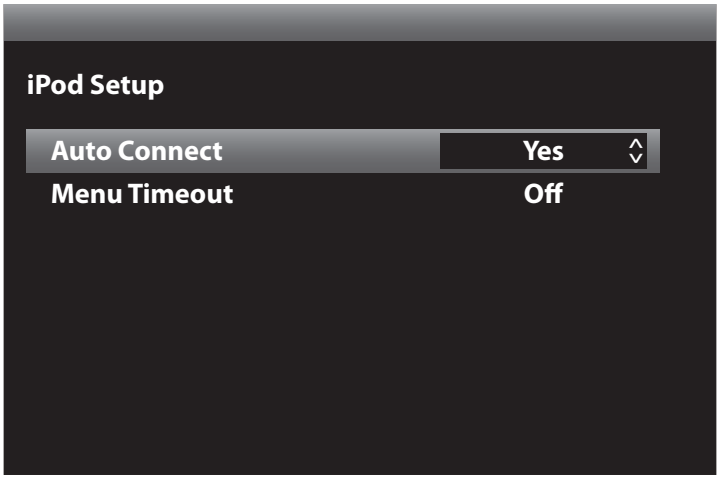


Diagram 41 *iPod Setup - Auto Connect*

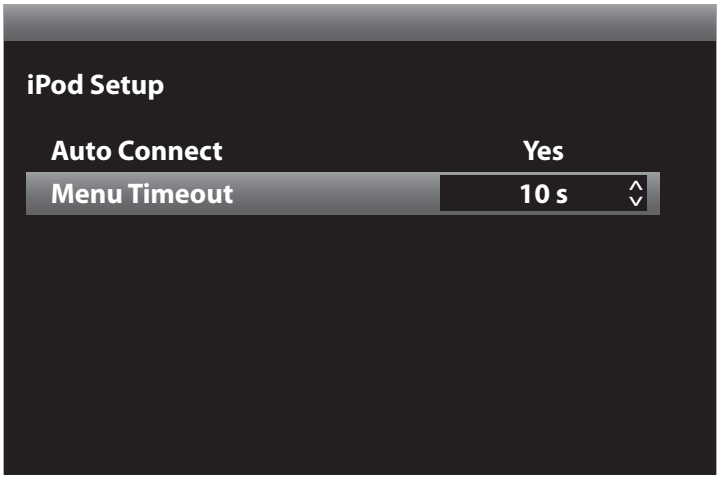


Diagram 42 *iPod Setup - Menu Timeout*

SPEAKER SETUP

Speaker Setup

Speaker Setup is where the M80 gets configured for a 5.1 or 7.1 speaker configuration. Speaker Levels, Distance (Delays) and EQ are set automatically using SmartEQ. Once set, the settings can be manually adjusted to user preference if desired.

These settings are critical to optimizing M80 performance. A very important part of M80 audio performance is tied to these settings. Proper reproduction of surround audio, whether from discrete multichannel encoding or synthesized from two-channel audio, requires seamless performance from all speakers in the system. Speaker placement, as described in the section on Installation is critical but that's only one part of the setup. Once in place it is critical that the sound from all speakers is set to arrive at the listeners ears, at the same time, at proper levels and without being affected by the shape of the room, objects in the room or the finish of the room, (hard surfaces vs soft surfaces).

SmartEQ tests the speaker setup and room conditions to create perfect balance for a natural sound environment.

Please review the sections in SmartEQ and Manual Speaker Setup for additional information on these critical settings.

Important Note: The M80 determines which Listening Modes are available for the selected source based upon the number of speakers (5.1 or 7.1 configuration), the input (analog or digital) and the content, (surround, multichannel or no encoding). The speaker configuration, (5.1 or 7.1) can be set automatically by running SmartEQ. A 7.1 configuration can be set manually by selecting a 'speaker size' for the Back Speakers in Speaker Configuration. A 5.1 configuration can be set manually by turning the Back Speakers 'OFF' in Speaker Configuration. M80 default speaker configuration is 7.1.

1. With the OSD open, and Setup Menu selected, press ▶ . Source Setup will highlight in the Setup List. Press ▼ to move the highlight bar to the Speaker Setup line. **Diagram 43**

2. Press ▶. The Speaker Setup Menu will appear. SmartEQ will be highlighted by default. **Diagram 44**

   SmartEQ (Automatic Speaker Setup)
   With the speakers connected and installed, SmartEQ will automatically calibrate the speaker configuration (large/small), levels, delays, EQ and sub crossover to affect perfect balance from all speakers to The Ideal Listening Zone as shown in **Diagrams 5 & 6**.

   SmartEQ is a highly refined, scientific process that will send a test tone to each speaker, and compare the response from each speaker to the original test tone as received from the included measurement microphone. The measurement microphone has been optimized for use with the M80, so the M80 knows what it should hear back

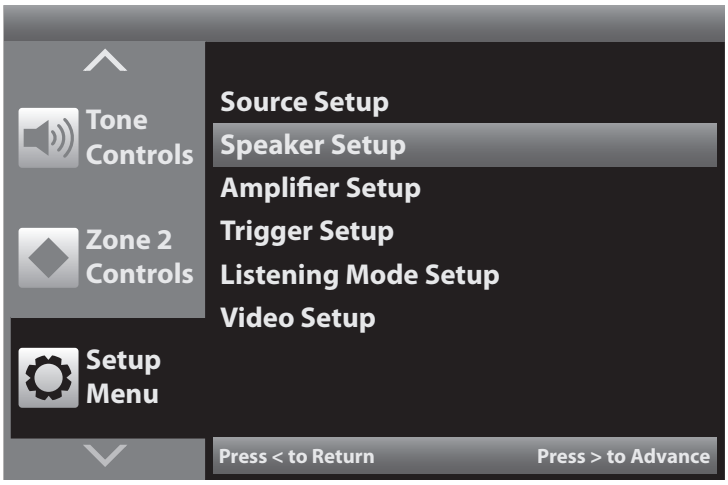


Diagram 43 *Setup Menu - Speaker Setup*

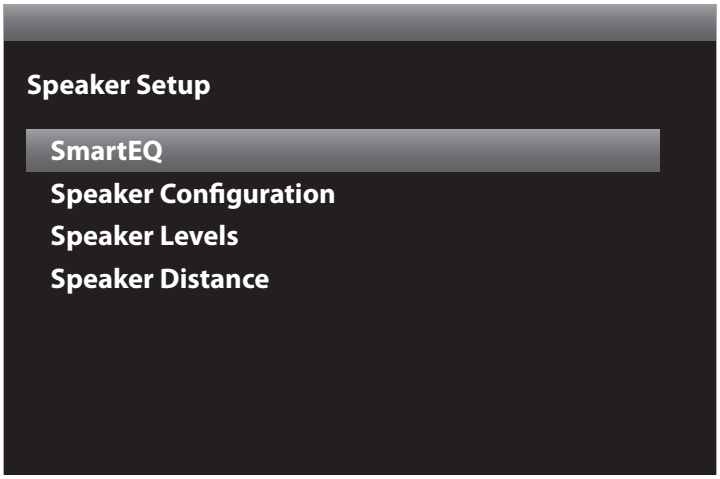


Diagram 44 *Speaker Setup Menu - SmartEQ*

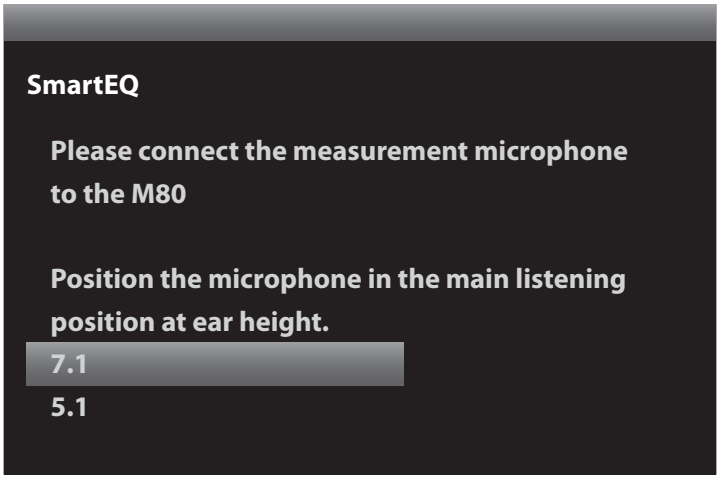


Diagram 45 *SmartEQ Configuration*

from a given speaker during the SmartEQ process. By sampling the frequency response, level and delay from each speaker, the M80 will be able to optimize each speaker's settings to compensate for speaker placement and room characteristics so surround audio content will be reproduced exactly as it was created in the studio and synthesized modes will be properly balanced.

Important Note: Before starting SmartEQ, eliminate as much ambient noise from the room as possible. Close windows and doors, turn off fans or any other devices in the room that are generating sound.

If staying in the room while Smart EQ is in progress, do not block 'line of sight' between any speaker and the measurement microphone and try not to move or make any noise.

Warning: The sound levels generated during SmartEQ can become uncomfortable to persons with sensitive hearing. Quietly leaving the room or use of some form of ear protection is recommended. Disconnected closed-air headphones can be used or earplugs can be purchased in better drug stores, musical instrument stores or building supply outlets where heavy tools are sold.

1. Press ▶. The SmartEQ Connect Microphone screen will appear. 7.1 speaker configuration will be highlighted by default. **Diagram 45**

2. Connect the measurement microphone as shown in **Diagram 46.** The speakers will be turned OFF until SmartEQ starts. For a single user, position the microphone in the Ideal Listening Zone as shown in **Diagrams 5 & 6**. If there will be more than one listener, position the microphone in a position centered to where the users would typically be seated, or for a large room, position the microphone in the center of the room. Position the microphone to typical seated ear level. (Turning the M80 box on end and placing it in the user's seated position makes a convenient mic stand.)

3. In the SmartEQ Connect Microphone screen, **Diagram 45**, position the highlight bar over 7.1 or 5.1 as appropriate for the speaker system being calibrated. Press ▶.
   Note: SmartEQ will not initiate for a 7.1 configuration if Amplifier Back Amp is set to Zone 2. See section: **Amplifier Setup** for additional information.

4. If the Test Error screen appears, **Diagram 47**, connect the microphone or if connected, disconnect and then re-connect the mic to assure that it is properly seated in the jack. Press ◀ to return to the Speaker Setup Menu, **Diagram 44** and repeat **Step 3**.

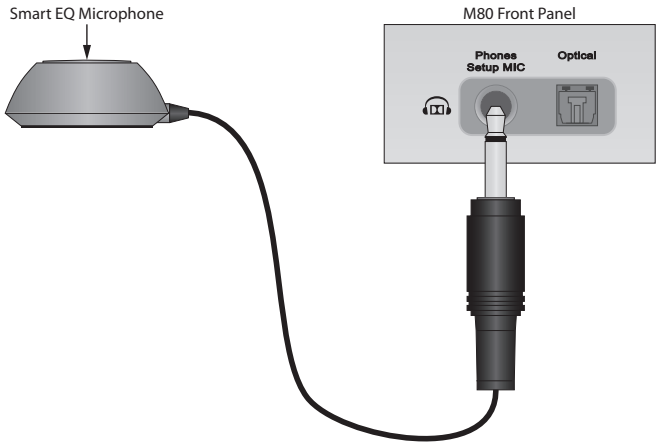


Diagram 46 *SmartEQ Microphone Connection*

Diagram 47 *SmartEQ Test Error Message*

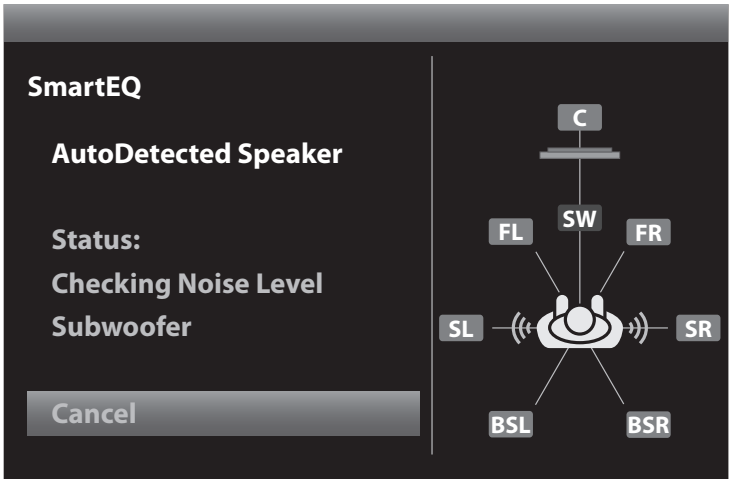


Diagram 48 *SmartEQ Configuration*

5. The Auto Detected Speaker screen will appear on the video display. The M80 Front Panel Display will read: ROOM/EQ SPKR:LFE BASE SPKR LEV. During SmartEQ, the M80 will alternately send test tones to the connected speakers. The Auto Detect screen will show which speaker is being tested by highlighting the appropriate speaker icon in blue and indicating which speaker is being tested on the Status line. The Front Panel Display will indicate which speaker is being tested as SPKR:LFE or SPKR: FL, etc. As the different tests are executed, the SmartEQ screen and Front Panel Display will change to indicate which test is being performed on which speaker.

Diagram 49 *SmartEQ Speaker Not Found*

Checking Noise Level
Starting with the Subwoofer, the M80 will alternately generate test tones to the sub and Front left speaker. This test allows the M80 to analyze the ambient room noise and set an appropriate test level.

Checking Number of Speakers
Starting with the Front left speaker, SmartEQ will send a test tone out of each speaker terminal. This will confirm to the M80 the speaker configuration and that the speakers are properly connected. Observe the test position on-screen in case of a connection problem. If no tone is generated from a particular speaker, after testing all other speakers SmartEQ will try the 'missing' speaker(s) again. If no tone is picked up by the microphone the Speaker not found screen will appear. **Diagram 49**. Confirm the speaker's connections, press ◀ to return to the Speaker Setup Menu, **Diagram 44** and repeat **Step 3**.

Checking Speakers Distance
Starting with the Front left speaker, SmartEQ will send a series of test tones to each speaker. The M80 will analyze the delay from when each tone is generated to when the output from each speaker is received by the measurement microphone. SmartEQ will automatically adjust the output delay to each speaker until all speakers have the same response time. This will compensate for less than ideal speaker placement if all speakers are not equal distance from the Ideal Listening Zone. This will assure sound from all speakers is heard at the same time for focus, creating a natural sounding audio environment.

Checking Speakers Level and Size
Starting with the Front left speaker, SmartEQ will send a series of test tones to each speaker. The M80 will analyze the output level from each speaker as received by the measurement microphone. SmartEQ will automatically adjust the output level to each speaker until all speakers have the same volume. This will assure proper balance of voice, music sound track and ambient sound to reproduce surround and multichannel effects as created in the studio and proper balance of synthesized surround effects.

During the Speakers Level and Size tests, Smart EQ will also analyze the frequency response from each speaker to determine its size. Size in this case does not refer to the physical size of the speaker itself but to the ability to produce low frequencies. A 'Large' speaker would be considered a speaker capable of reproducing frequencies below 150Hz. A 'Small' speaker would typically be a satellite type speaker or small (physically) bookshelf speaker that has limited or no low frequency output. (Check speaker specifications for clarification.) SmartEQ will send test tones to the Subwoofer and to each of the front, surround and back speakers and set appropriate crossover points for the sub relative to the rest of the system and then each speaker based upon the sub crossover point and that speaker's low frequency response. This will assure seamless transition from lower midrange information to bass information. A properly tuned low frequency crossover point and sending low bass frequencies to a powered sub also creates a cleaner and more efficient system with the front, surround and back speakers being less likely to 'bottom out' trying to produce bass frequencies at the lower end of their range at high levels.

Adjust EQ
The final adjustment for SmartEQ is the EQ (equalization). In this test, starting with the Front left speaker, SmartEQ will send a series of test tones out to each speaker. The M80 will analyze the frequency response from each speaker as received by the measurement microphone. SmartEQ will automatically adjust the EQ to each speaker until all speakers outputs matches the original generated tone. This will compensate for variations in room shape, such as an alcove which can trap sound or soft surfaces of upholstered chairs that can dull high frequencies.

SmartEQ Procedure Completed
When Smart EQ has finished, the Procedure Complete screen will appear. **Diagram 50**

1. Press ◀ once to return to the Speaker Setup Menu. **Diagram 44**

2. Press ◀ again to return to the Setup Menu. **Diagram 43**

To Exit the OSD

1. Press the Menu button on the M80 Front Panel or Remote. The OSD will close and the M80 will return to normal use mode.

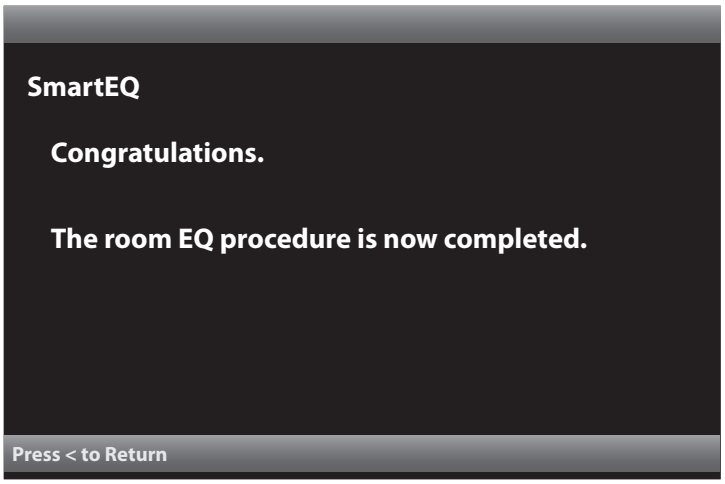


Diagram 50 *SmartEQ Procedure Complete*

SPEAKER SETUP

Manual Speaker Setup

The M80 Speaker Settings can be configured manually. Even though SmartEQ is recommended and will set all speaker settings to their optimal values, there may be occasions when some manual tweaking of the settings may be desirable to accommodate personal preference.

Important Note: The default, out of the box speaker configuration of the M80 is 7.1. If configuring the M80 for a 5.1 setup, in the Speaker Configuration screen, set the Back Speaker 'size' to 'OFF'. Availability of audio modes (Listening Modes) is determined, in part, by the speaker configuration. Appropriate Listening Modes will not be available for the given configuration if this setting is not correct.

1. With the OSD open, and Setup Menu selected, press ▶. Source Setup will highlight in the Setup List. Press ▼ to move the highlight bar to the Speaker Setup line. **Diagram 43**

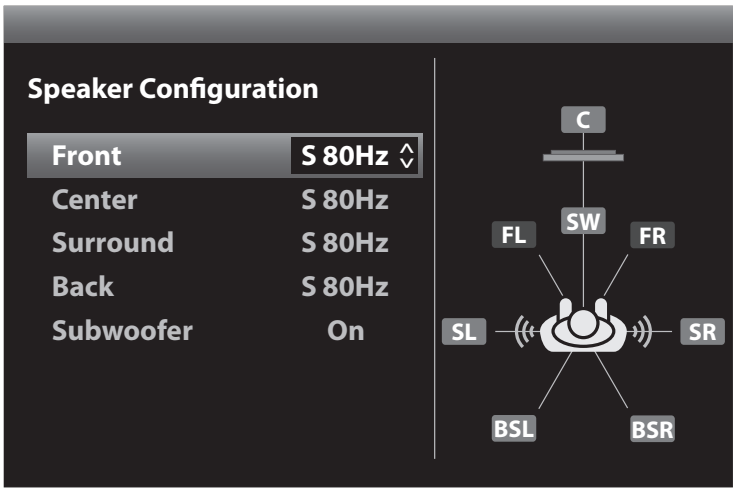


Diagram 51 *Speaker Configuration (Crossover)*

2. Press ▶. The Speaker Setup Menu will appear. Smart EQ will be highlighted by default. **Diagram 44**

3. Press ▼ to move the highlight bar to the Speaker Configuration line. Press ▶. The Speaker Configuration screen will appear. Front will be highlighted by default. **Diagram 51**

Speaker Configuration

These settings determine the speaker configuration (7.1 vs 5.1) and tell the M80 where to set the crossover points for bass information to the Front, Center, Surround and Back speakers and the Subwoofer. These settings are determined by the number of speakers used and the design of the Front, Center, Surround and Back speakers.

Selecting 'Large' is appropriate when full range speakers with good bass extension are used for Front, Center, Surround or Back or if a Subwoofer is not going to be used. Selecting Large will send all bass information for that group (Front, Center, Surround, Back) to those speakers and no bass information for that group to the PRE-OUT SW (subwoofer) jack.

Selection of the crossover point (60, 80, 100, 120, 150Hz) can be determined by referencing the bass response specifications and crossover points of the Front, Center, Surround and Back speakers and the Subwoofer. Start by setting a point somewhere in between the low end of the speakers' range and the upper end of the Subwoofer's range. This will create a seamless transition from lower midrange information to bass information. Some experimentation can be done to find a particular setting that is most satisfying to the user or that compensates for the acoustics of a particular room.

1. Press ▶. The Front Speaker Window will become active.

2. Press ▲ ▼ to select the crossover point. (S 80 used for example; S = Small.)

3. When finished, press ◀ so the Front Speaker Window is no longer active and to save the setting.

4. Press ▼ to move the highlight bar to the Center line.

5. Repeat **Steps 1-4** for the Surround, Back and Subwoofer settings. If configuring a 5.1 setup, set the Back Speakers to 'OFF'.

6. When all speakers have been configured, press ◀ to return to the Speaker Setup Menu.

7. If continuing in Speaker Setup, press ▼ to move the highlight bar to Speaker Levels and proceed to the next section.

8. To return to the Setup Menu press ◀ again.

9. To exit the OSD press Menu.

Speaker Levels
These settings determine the output level of the individual speakers. (This is similar to 'balance' in a two-channel system.) These settings assure that the audio output from all speakers arrives at the same level in the Ideal Listening Zone. The level setting can help compensate for less than ideal speaker placement if it is not possible to position all speakers at equal distances from the Ideal Listening Zone as shown in **Diagrams 5 & 6**.

Adjust the output level to each speaker until all speakers have the same volume. This will assure proper balance of voice, music sound track and ambient sound to reproduce surround and multichannel effects as created in the studio and proper balance of synthesized surround effects.

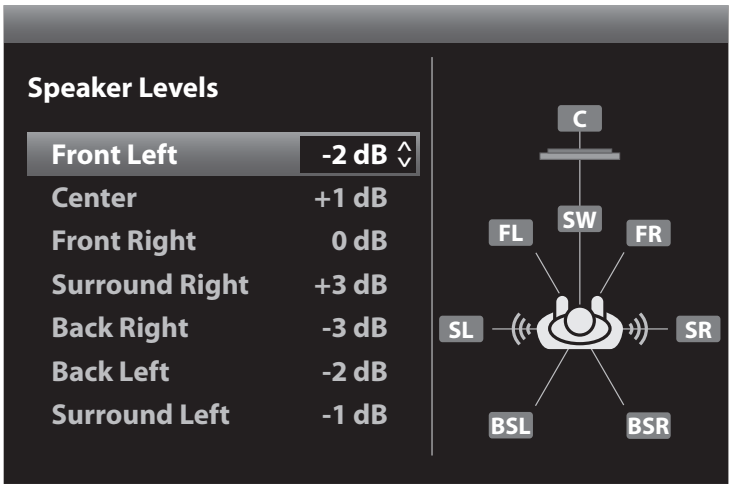


Diagram 52 *Speaker Levels (Balance)*

Note: The Surround and Back speakers in 5.1 and 7.1 systems do not always play. They typically provide environmental sounds and music tracks for movies and TV program that are appropriately encoded for surround sound. Only adjust the Surround and Back speaker levels if they are unusually loud or soft when playing relative to the Front and Center speakers.
Range: +/- 12dB.

The values shown in **Diagram 52** are for example only.

1. With the Speaker Setup Menu open, **Diagram 44**, press ▼ to move the highlight bar to the Speaker Levels line. Press ▶. The Speaker Levels screen will appear. Front left will be highlighted by default. **Diagram 52**
2. Speaker Level should be adjusted as referenced to the Test Tone generated by the M80. To activate the Test Tone, press Test Tone on the M80 Remote.
3. Press ▶. The Front Left Window will become active.
4. Press ▲ ▼ to select speaker level.
5. When finished, press ◀ so the Front Left Window is no longer active and to save the setting.
6. Press ▼ to move the highlight bar to the Center line.
7. Repeat **Steps 3-5** for all speakers. (Adjust Subwoofer level using the level control on the sub.)
8. When all speaker levels have been set, press ◀ to return to the Speaker Setup Menu.
9. If continuing in Speaker Setup, press ▼ to move the highlight bar to Speaker Distance and proceed to the next section.
10. To return to the OSD press ◀ again.
11. To exit the OSD press Menu.

SPEAKER SETUP

Speaker Distance
These settings determine the length of delay, if any, that gets put on the output of each speaker, including the sub-woofer. This delay is used to assure that the audio output from each speaker arrives at the same time in the Ideal Listening Zone as shown in **Diagrams 5 & 6**. The Speaker Distance setting can help compensate for less than ideal speaker placement if it is not possible to position all speakers at equal distances from the Ideal Listening Zone. **Range:** 0-30 feet (0-9 meters).

The values shown in **Diagram 53** are for example only.

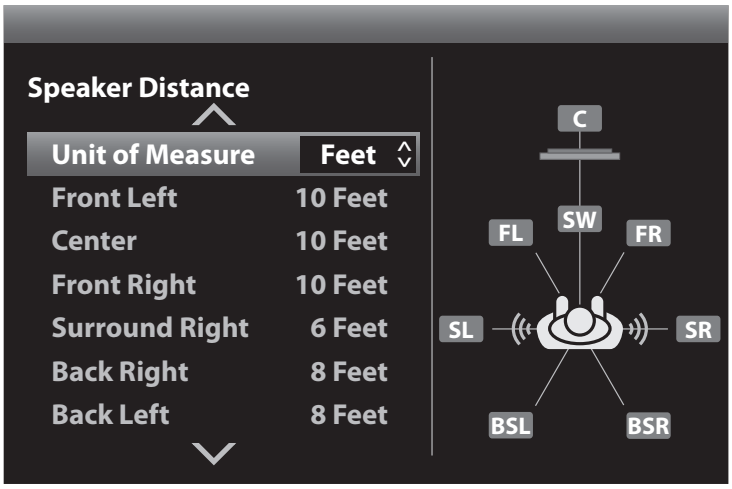


Diagram 53 *Speaker Distance (Delay)*

1. With the Speaker Setup Menu Open, **Diagram 44**, press ▼ to move the highlight bar to the Speaker Distance line. Press ▶. The Speaker Distance screen will appear. Unit of Measure will be highlighted by default. **Diagram 53**

2. Press ▶. The Unit of Measure Window will become active.

3. Press ▲ ▼ to select feet or meters. Once values are entered, the M80 will automatically convert feet to meters and meters to feet if the setting is changed.

4. When finished, press ◀ so the Unit of Measure Window is no longer active and to save the setting.

5. Press ▼ to move the highlight bar to the Front Left line. Using a tape measure, measure the distance from the Front left speaker to the Ideal Listening Zone.

6. Press ▲ ▼ to select the measured distance. For distances that are not exact in feet and are under six inches, (eg: 6 feet, 4 inches) round down to 6 feet. For distances that are not exact in feet and are over six inches, (eg: 6 feet, 8 inches) round up to 7 feet.

7. Repeat **Steps 2-6** for all connected speakers including the Subwoofer.

8. When all speakers have been configured, press ◀ to return to the Speaker Setup Menu.

9. If continuing in Setup Menu, press ◀ to return to the Setup Menu and proceed to the next section.

10. To exit the OSD press Menu.

Amplifier Setup
This setting configures the M80 Surround Back Left and Right Speaker Terminals for use as the Surround Back speakers in a 7.1 surround configuration or as stereo speakers for use in Zone 2 in a multizone configuration. (See **Multizone Configuration** for additional information if setting up a two zone system.)

1. With the OSD open, and Setup Menu selected, press ▶. Source Setup will highlight in the Setup List.
2. Press ▼ twice so Amplifier Setup is highlighted in the Setup List. **Diagram 54**
3. Press ▶ . The Amplifier Setup screen will appear. Back Amp will be highlighted.
4. Press ▶ . The Back Amp window will become active. **Diagram 55**
5. Press ▲ ▼ to set Main Back or Zone 2.
6. When finished, press ◀ so the Back Amp Window is no longer active and to save the setting.
7. If continuing in Setup Menu, press ◀ to return to the Setup Menu and proceed to the next section.
8. To exit the OSD press Menu.

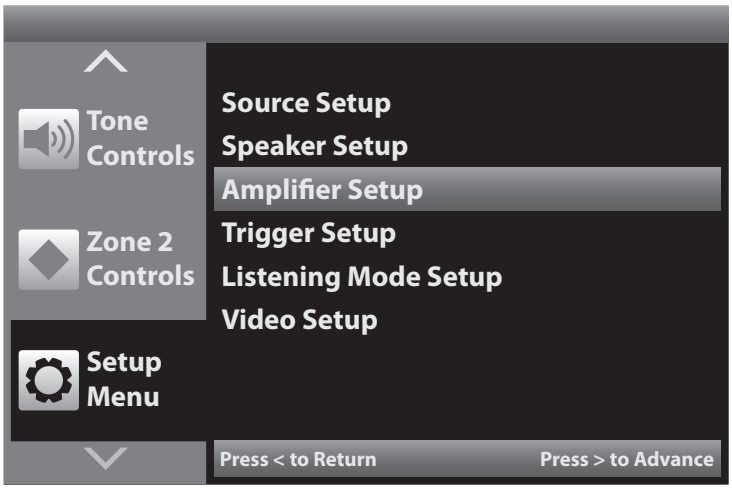


Diagram 54 *Setup Menu - Amplifier Setup*

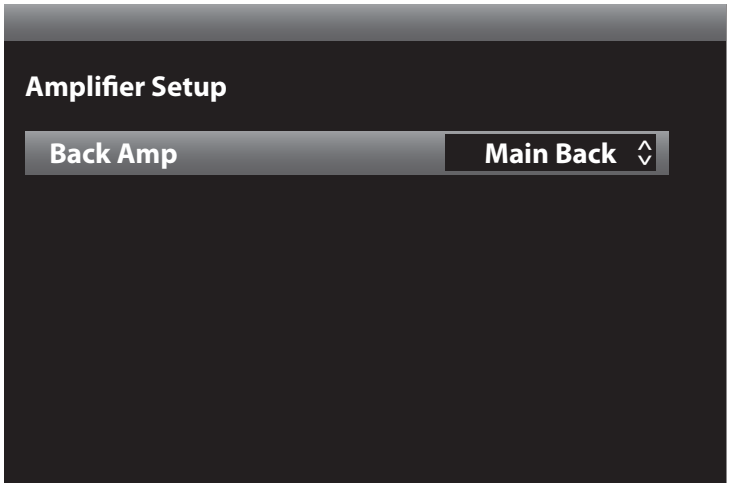


Diagram 55 *Amplifier Setup*

Trigger Setup
These settings determine when the 12V Trigger Out on the M80 Rear Panel is activated and deactivated. The Trigger Out can be used to turn external devices ON/OFF. External devices can include a powered subwoofer, external amplifier or other device that can be turned ON/OFF with 12VDC. When the Trigger Out is ON it will output 12VDC; when the Trigger Out is OFF it will output 0VDC.

Trigger Out
The Trigger Out can be set to turn ON/OFF with M80 ON/OFF Status (Main); by source selection (Source Setup) or Zone 2 ON/OFF Status (Zone 2).
Main - Trigger Out turns ON/OFF when the M80 Main Room turns ON/OFF regardless of any other condition. Good for use with a powered subwoofer or other device that will be used with all sources.

Source Setup - Trigger Out Turns ON/OFF by source as configured on the Trigger Out line for each source in Source Setup. Good for use with a powered subwoofer or other device that will be used with specific sources.

Zone 2 - Trigger Out turns ON/OFF when Zone 2 is turned ON/OFF regardless of any other condition. Good for use with an external amplifier for Zone 2.

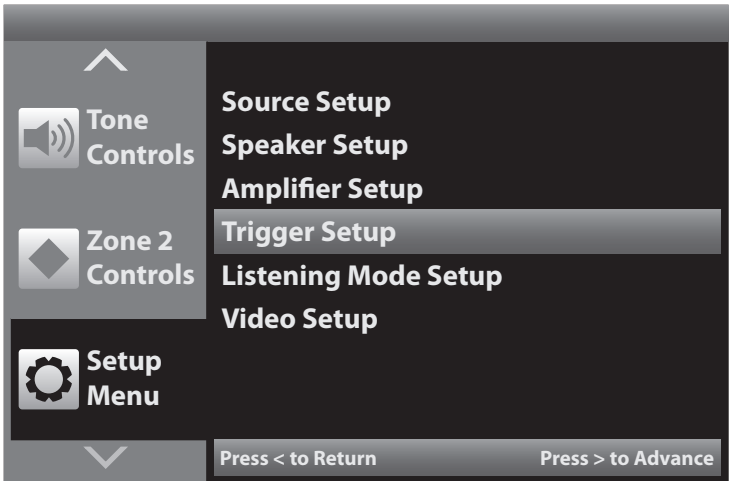


Diagram 56 *Setup Menu - Trigger Setup*

TRIGGER SETUP

1. With the OSD open, and Setup Menu selected, press ▶. Source Setup will highlight in the Setup List.

2. Press ▼ three times so Trigger Setup is highlighted in the Setup List. **Diagram 56**

3. Press ▶ . The Trigger Setup screen will appear. Trigger Out will be highlighted.

4. Press ▶ . The Trigger Out window will become active. **Diagram 57**

5. Press ▲ ▼ to set Main, Source Setup or Zone 2.

6. When finished, press ◀ so the Trigger Out Window is no longer active and to save the setting.

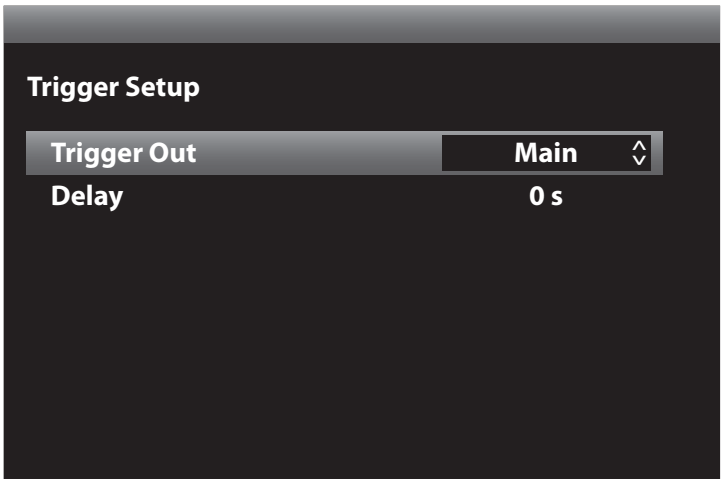


Diagram 57 *Trigger Setup*

Delay
This setting will have the Trigger Out turn ON 0-15 seconds after the mode selected on the Trigger Out line is turned ON. The Trigger Out will turn OFF instantly when the selected mode (Main/Source/Zone 2) is turned OFF.
Range: 0-15 seconds

1. From the Trigger Out line, press ▼ so the Delay line is highlighted. **Diagram 58**

2. Press ▶ . The Delay window will become active.

5. Press ▲ ▼ to set the duration of the Delay.

6. When finished, press ◀ so the Delay Window is no longer active and to save the setting.

7. If continuing in Setup Menu, press ◀ to return to the Setup Menu and proceed to the next section.

8. To exit the OSD press Menu.

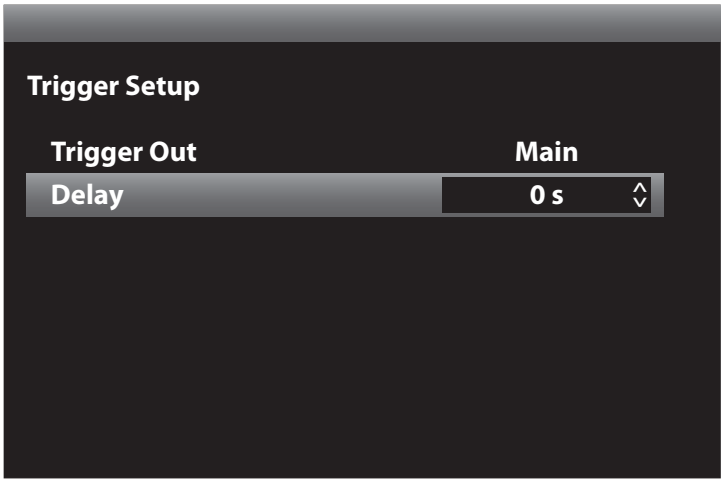


Diagram 58 *Trigger Out Delay*

Listening Mode Setup

The M80 is set at the factory to automatically detect and process encoded and un-encoded audio content. The M80 can process numerous Dolby and DTS encoded Listening Modes as well as synthesize surround modes from un-encoded 2-channel (stereo) content.

The Listening Mode Setup allows assigning Listening Mode preferences to specific audio content, by source, based upon speaker configuration, (5.1 vs 7.1) original content (encoded vs un-encoded) and playback device connection, (analog vs digital).

Encoded audio content (Dolby, DTS) contains 'flags' that tell the M80 which Listening Mode mode to use. Un-encoded analog audio and digital audio such as standard CD's on a digital connection, do not contain flags and do not trigger Listening Modes. Typically, setting preferences in Listening Mode Setup should be reserved for use with un-encoded analog or digital stereo audio content. Setting preferences utilizing the Dolby and DTS Listening Modes that synthesize surround audio from un-encoded content, expands the sound potential for legacy sources such as VCRs and Tape Decks as well as CD Players, the M80's internal Tuner an XM Tuner, iPod, or any stereo audio source. VHS tapes with Dolby Stereo or Dolby Surround encoding will not trigger Listening Modes automatically, but some Dolby (PLII/IIx Movie/Music) and DTS (NEO:6 Cinema/Music) modes can be applied manually or set as preferences to enhance the encoded soundtrack.

The Listening Mode Setup default preferences are set to None. This allows the M80 to automatically select the proper Listening Mode based upon the audio input signal. Un-encoded digital audio will typically play in stereo. Un-encoded stereo analog audio will play in a stereo mode indicated as Analog Bypass. There are some additional performance settings that can be changed to accommodate user preferences. For additional information on the Listening Mode Setup and setting preferences, see section: **Operating the M80/Listening Modes**. To confirm the factory settings for automatic Listening Mode selection:

1. With the OSD open, and Setup Menu selected, press ▶. Source Setup will highlight in the Setup List.
2. Press ▼ four times so Listening Mode Setup is highlighted in the Setup List. **Diagram 59**
3. Press ▶ . The Listening Mode Setup Menu will appear. Listening Mode will be highlighted. **Diagram 60**
4. Press ▶ . The Listening Mode screen window will appear. 2 Channel will be highlighted.
5. Press ▶ . The 2 Channel window will become active. **Diagram 61**

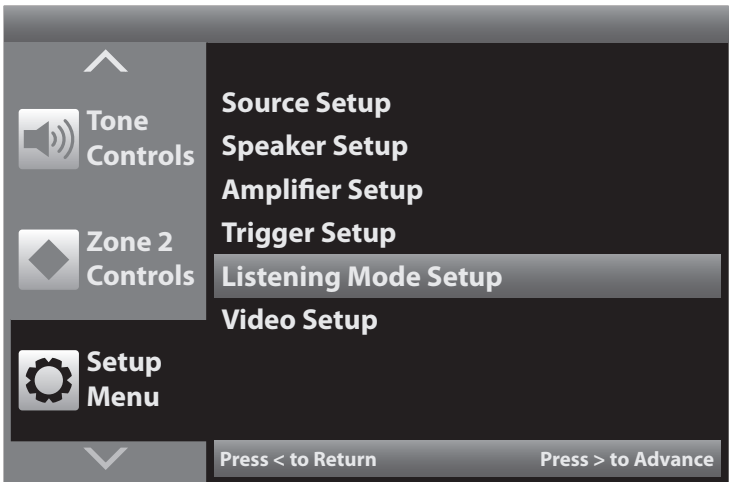


Diagram 59 *Setup Menu - Listening Mode Setup*

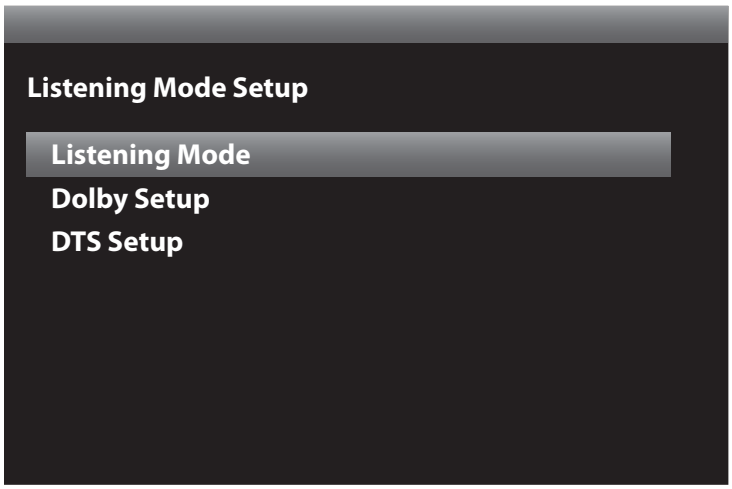


Diagram 60 *Listening Mode Setup*

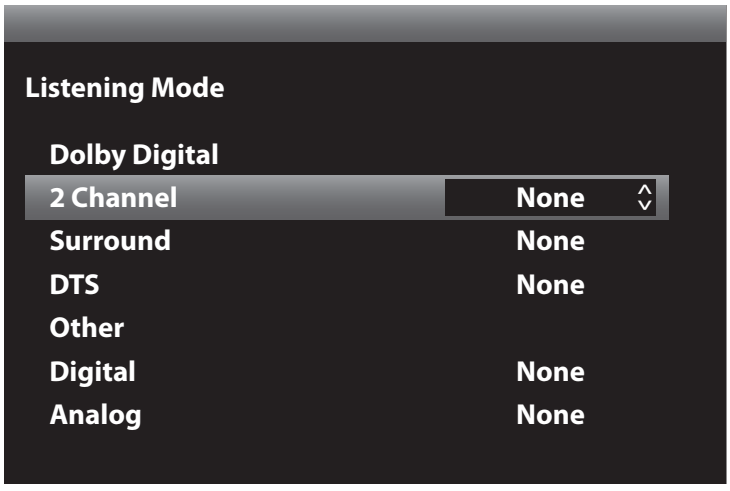


Diagram 61 *Listening Mode Selection*

6. If not selected, press ▲ ▼ to select None.

7. When finished, press ◀ so the 2 Channel Window is no longer active and to save the setting.

8. Press ▼ so the Surround line is highlighted.

9. Repeat **Steps 5-8** as needed until all options are set to None.

10. To confirm that all Listening Modes for all sources are set to None, press Menu to exit the OSD. Change sources with the OSD OFF and then repeat **Steps 1-10**. The settings in the Listening Mode screen will indicate the settings for the last source selected with the OSD OFF. The Tuner and iPod Listening Modes can only be selected or changed when the Tuner or iPod is the current source by pressing the Surround button.
Note: If a Listening Mode is selected using the Surround button on the M80 Front Panel or Remote while a source is selected, that mode will become the preference for that type of audio signal, for that source, and will appear on the line indicating the type of audio input signal being processed, for that source. The selection will remain in affect for any other like audio signal, for that source, until changed manually in the OSD or by pressing the Surround button. See: **Operating the M80/Listening Modes/Setting Listening Mode Preferences**.

10. If continuing in Setup Menu, press ◀ to return to the Setup Menu and proceed to the next section.

11. To exit the OSD press Menu.

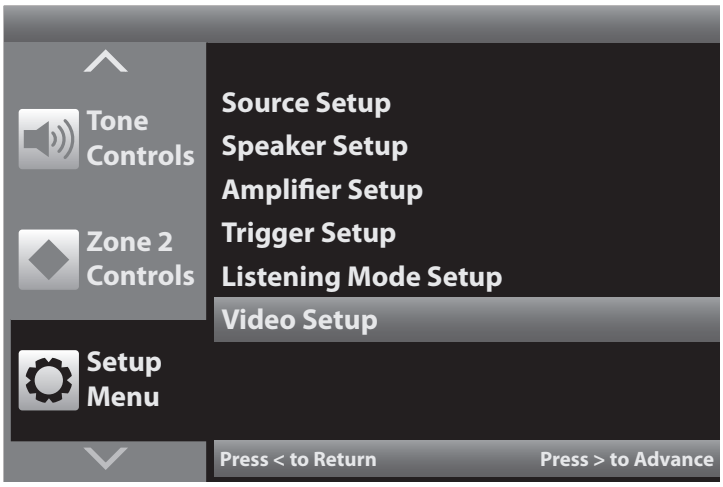


Diagram 62 *Setup Menu - Video Setup*

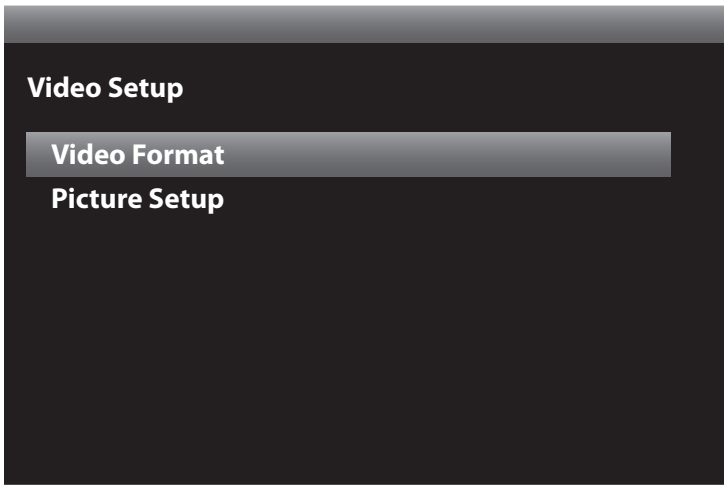


Diagram 63 *Video Setup Menu*

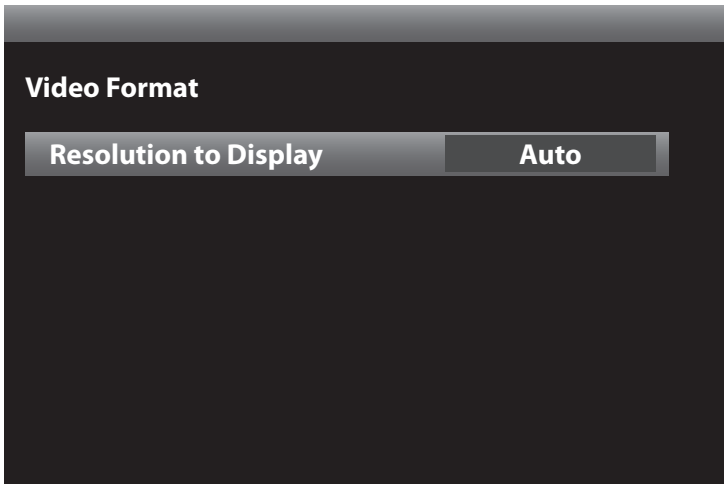


Diagram 64 *Resolution to Display*

Video Setup

These settings will configure the Monitor Outputs from the M80 to the Main Room Video Display. Video Format sets the M80 Resolution to Display and Picture Setup sets the brightness, contrast, color and filters.

Video Format

The Resolution to Display factory default is set to Auto. If using an HDMI connection from the M80 to the Video Display, the M80 should automatically establish a connection to the Video Display at the highest HDMI resolution possible for the display. If using component, S or composite video, (no HDMI) the M80 will establish a 480i connection to the Video Display. This will allow use of the OSD to manually set the appropriate Resolution to Display based upon the connection to (component, S, composite) and capability of (1080i, 720p, 480p, 480i) the Video Display.

All analog video input signals (component, S, composite) can be up-converted or down-converted to any compatible resolution (1080p, 1080i, 720p, 480p, 480i) for a spe

cific connection (HDMI, component, S, composite) other than HDMI @ 480i. (HDMI does not output 480i.)
Any HDMI signal can be up-converted or down-converted to any resolution (1080p, 1080i, 720p, 480p) as an HDMI signal other than HDMI @ 480i. (HDMI does not output 480i.) HDMI signals are not down-converted to analog signals (component, S, composite).

To change the Resolution to Display setting:
Note: If the OSD does not appear on the Video Display, try other Video Display inputs with connections to M80 Monitor OUTs (component, S, composite) until the OSD appears. Add a component, S or composite video connection, if necessary, to access the OSD for setup.

1. With the OSD open, and Setup Menu selected, press ▶. Source Setup will highlight in the Setup List.

2. Press ▼ five times so Video Setup is highlighted in the Setup List. **Diagram 62**

3. Press ▶ . The Video Setup Menu will appear. Video Format will be highlighted. **Diagram 63**

4. Press ▶ . The Video Format screen will appear. Resolution to Display will be highlighted. **Diagram 64**

5. Press ▶ . The Resolution to Display window will become active.

6. Press ▲ ▼ to select the desired resolution. **Diagram 65**

7. Press OK to select the setting. The OSD and video output will turn OFF when selecting a new resolution. Allow up to 30 seconds for the M80 to try to set the selected resolution. There is some serious number crunching going on. The M80 needs to reconfigure its output and then sync with the video display, (and audio processing). This can take between 10 and 30 seconds depending upon the resolution selected and the display. (Sometimes switching sources with different input resolutions will take a few seconds to sync.)

8. If compatible with the video display, the picture will resume at the new resolution with the Video Format Screen open. **Diagram 66** Press **>** to Save the setting. Press **<** to return to the previous setting if the setting is undesirable.

9. If the M80 was not able to set the selected resolution, the video signal will be re-established at the previous Resolution to Display setting. Try another resolution until a compatible/desirable setting is selected.

10. To confirm resolution, press the Info button on the M80 Remote. The Info Screen will appear. **Diagram 67**

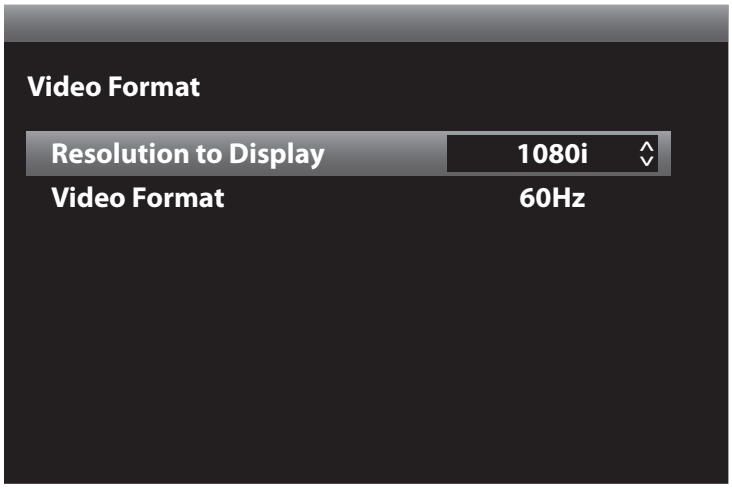


Diagram 65 *Setup Menu - Video Setup*

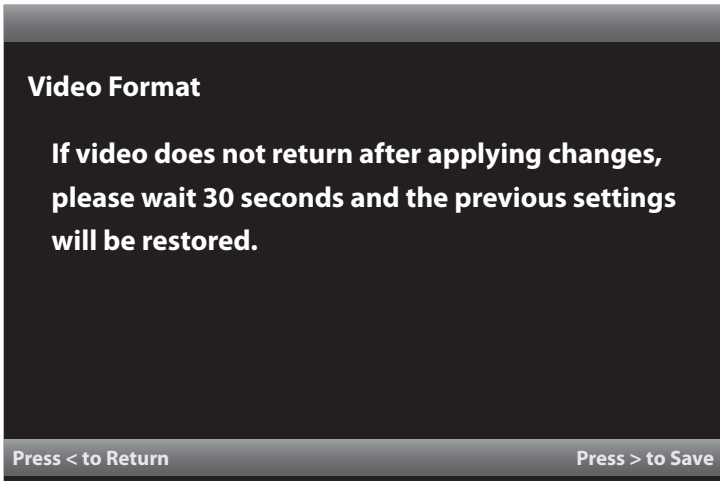


Diagram 66 *Video Format Screen*

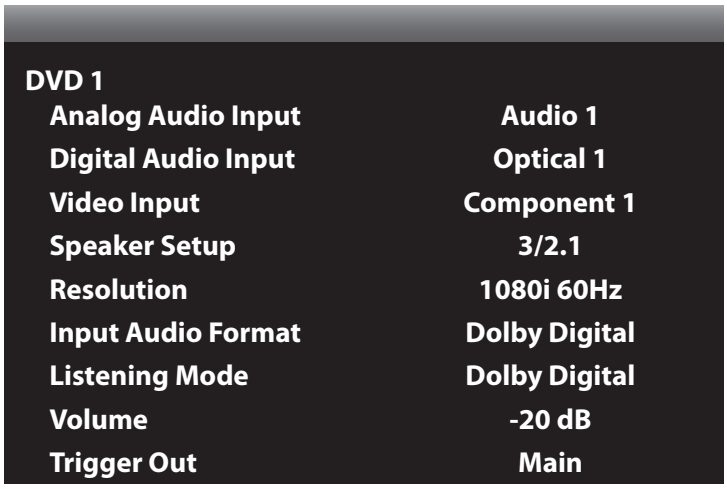


Diagram 67 *Info Screen*

Check the Resolution line. The new resolution should be indicated. If not, the requested resolution was not compatible between the M80 and the Video Display. Confirm connections and compatibility of the connections for the desired resolution. (See **Video Up/Down Conversion Chart** in the **Appendix** for additional information.) Also confirm resolution capability of the Video Display.
Note: If a specific resolution has been set, it will be displayed on the Resolution line. If Resolution to Display has been set to Auto, the actual output resolution will be indicated.

11. If connection changes have been made between the M80 and Video Display, repeat **Steps 1-10** if necessary to reset the Resolution to Display setting.

12. If continuing in Setup Menu, press ◀ to return to the Setup Menu and proceed to the next section.

11. To exit the OSD press Menu.

Picture Setup
These settings determine how the video signal will appear on the Video Display. The Brightness, Contrast and Color settings are similar to the controls found on a TV or Video Display. MPEG Noise reduction, Cross Color Suppressor and Film Mode Detect are special filters that enhance picture quality in specific applications.

The Picture Quality factory default is set to Normal. In most cases, the settings for Brightness, Contrast and Color should not be changed and desired adjustments to the video signal appearance should be made using the adjustments on the Video Display. These settings can be changed if changing the settings produces a better result than making the adjustments on the Video Display.

1. With the OSD open, and Setup Menu selected, press ▶. Source Setup will highlight in the Setup List.

2. Press ▼ five times so Video Setup is highlighted in the Setup List. **Diagram 62**

3. Press ▶ . The Video Setup Menu will appear. Video Format will be highlighted. **Diagram 63**

4. Press ▼ so Picture Setup is highlighted. **Diagram 68**

5. Press ▶ twice. The Video Modes window will become active. **Diagram 69**

6. Press ▲ ▼ to select Custom. The Video Modes list for Custom settings will appear. **Diagram 70**

7. Press ◀ so the Video Modes Window is no longer active.

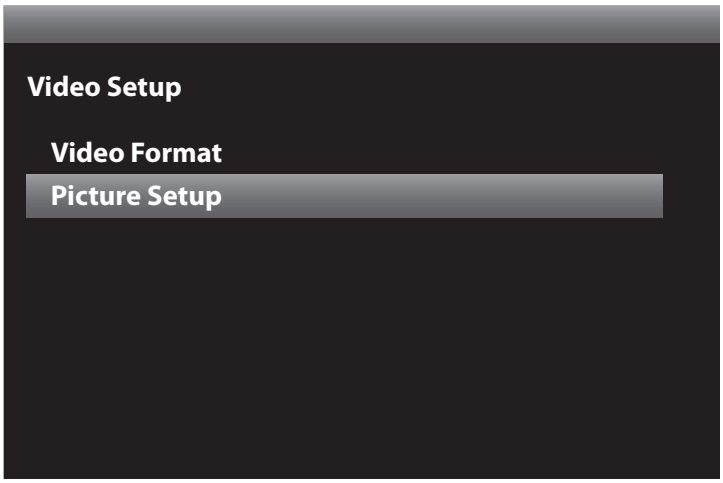


Diagram 68 *Video Setup Menu - Picture Setup*

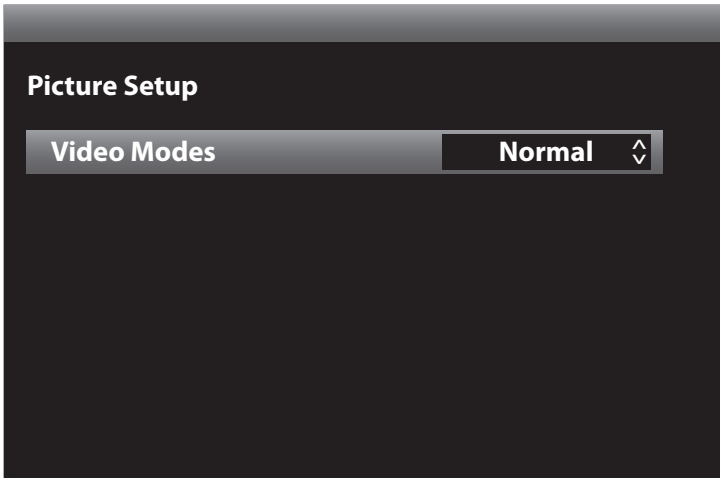


Diagram 69 *Video Modes*

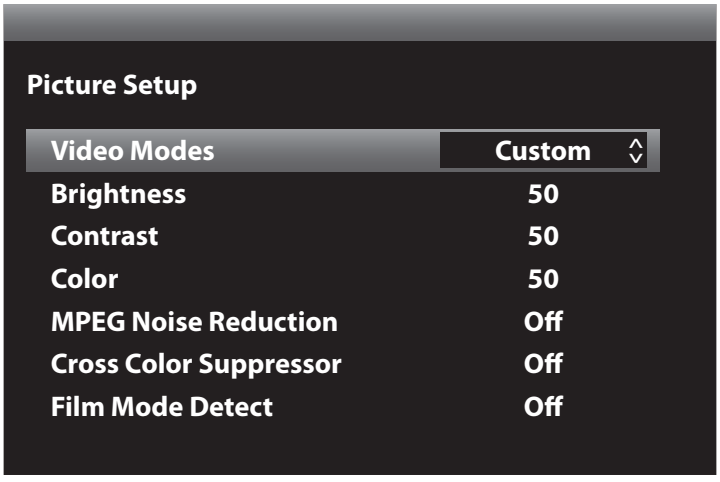


Diagram 70 *Video Modes Settings*

Brightness
This setting will determine the black level in the picture. The black level will affect the detail in the picture. Things such as facial features and details on other objects can be enhanced with the black level setting. Too little black will remove detail and the picture will appear washed out. Too much black will darken the picture to a point where no detail is distinguishable.

1. Press ▼ so Brightness is highlighted in the Picture Setup List.

2. Press ▶ . The Brightness Window will become active. **Diagram 71**

3. Press ▲ ▼ to set desired level.
   Note: Lower settings will increase black level, higher settings will reduce black level. Set so pure black objects are black, not gray. It can sometimes be helpful to turn the color all the way off when making this adjustment.

4. To continue in Video Modes, press ◀ so the Brightness Window is no longer active and to save the setting.

5. Continue to Contrast or press Menu to exit the OSD.

Contrast
This setting will determine the white level in the picture. The white level will affect the difference between the brightest and darkest areas in the picture. Look for natural shading (not color) in objects, such as shadow and light or 'burn' spots from too much white.

1. Press ▼ so Contrast is highlighted in the Picture Setup List.

2. Press ▶ . The Contrast Window will become active. **Diagram 72**

3. Press ▲ ▼ to set desired level.
   Note: Lower settings will reduce white level, higher settings will increase white level. Set so flesh tones and hair color appear natural. If the picture becomes grainy, reduce Contrast. It can sometimes be helpful to turn the color all the way off when making this adjustment.

4. To continue in Video Modes, press ◀ so the Contrast Window is no longer active and to save the setting.

5. Continue to Color or press Menu to exit the OSD.

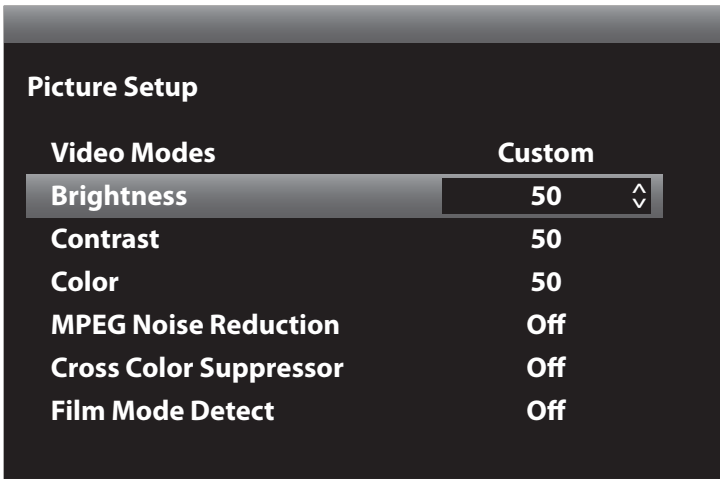


Diagram 71 *Video Modes - Brightness*

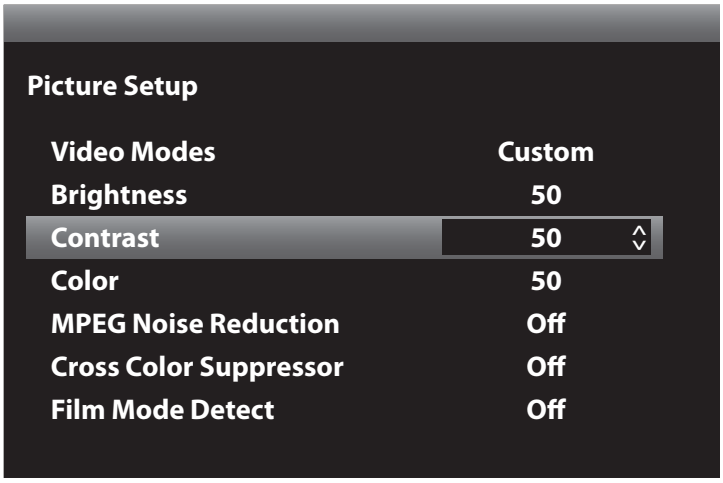


Diagram 72 *Video Modes - Contrast*

Color

This setting will determine the red, green and blue color level in the picture. The color level should be natural so flesh tones look natural, grass is green, sky is blue, etc. Too little color will make the picture look dull, like TV shows from the '70's. Too much color will make objects look like they are 'glowing'.

1. Press ▼ so Color is highlighted in the Picture Setup List.
2. Press ▶ . The Color Window will become active. **Diagram 73**
3. Press ▲ ▼ to set desired level.
   Note: Lower settings will reduce color level, higher settings will increase color level. Set so picture appears naturally colored. It can sometimes be helpful to turn the color all the way off and then bring it up until objects in the picture appear naturally colored.
4. To continue in Video Modes, press ◀ so the Color Window is no longer active and to save the setting.
5. Continue to MPEG or press Menu to exit the OSD.

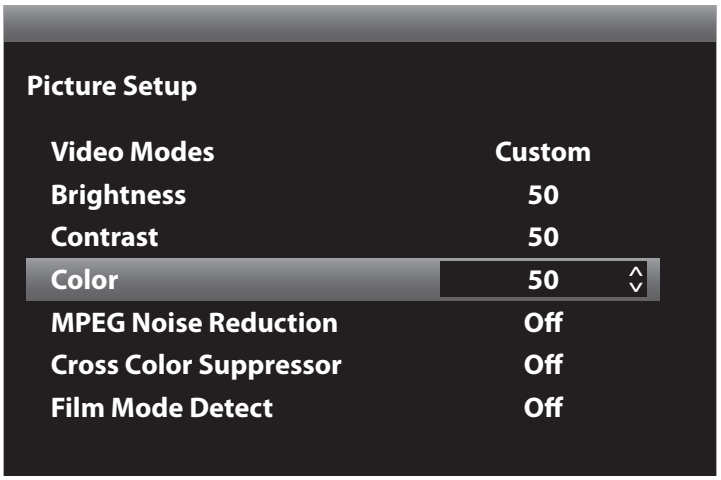


Diagram 73 *Video Modes - Color*

MPEG Noise Reduction

This setting will determine the level of MPEG Noise Reduction (MNR). MNR is used to reduce blocking artifacts and mosquito noise that result from MPEG compression on TV signals. This type of picture degradation is most noticeable around titles with a contrasted background and will appear as blotches.

Options: Low, Medium, High

1. Press ▼ so MPEG Noise Reduction is highlighted in the Picture Setup List.
2. Press ▶ . The MPEG Noise Reduction window will become active. **Diagram 74**
3. Press ▲ ▼ to set desired level.
   Note: As the amount of MNR is increased, the sharpness of the overall picture may be reduced.
4. To continue in Video Modes, press ◀ so the MPEG Noise Reduction Window is no longer active and to save the setting.
5. Continue to Cross Color or press Menu to exit the OSD.

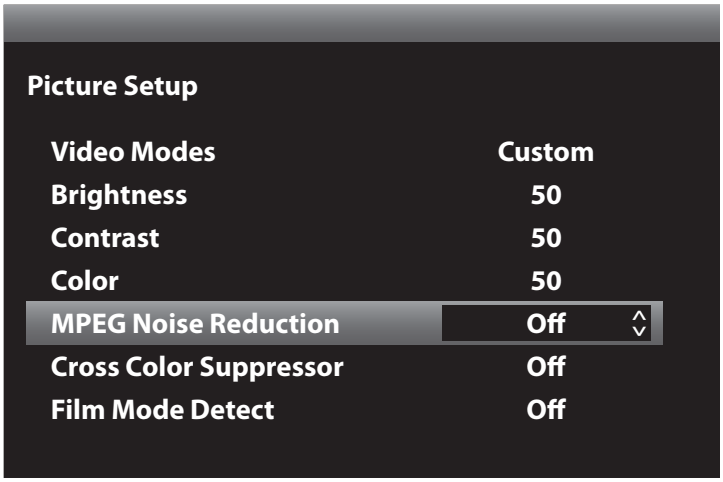


Diagram 74 *Video Modes - MPEG Noise Reduction*

Cross Color Suppressor

This setting will turn the Cross Color Suppressor ON/OFF. This process will eliminate rainbow affects in fine detail produced by imperfect decoding of composite video. This affect can be seen in patterned objects such as fences, clothing, rooftops, etc. **Options:** ON, OFF

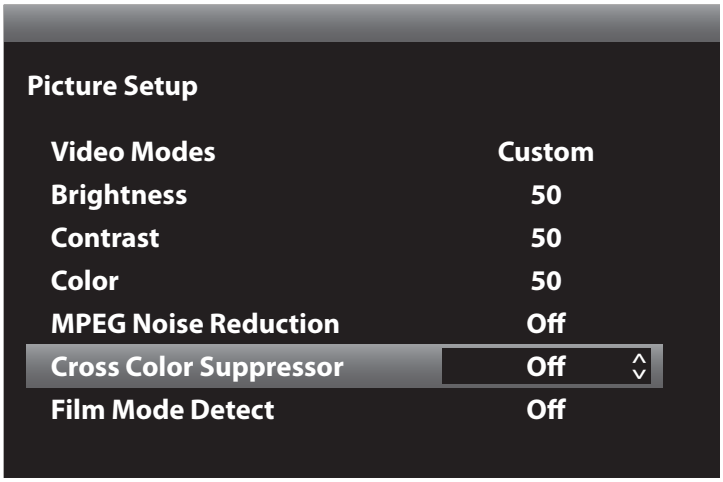


Diagram 75 *Video Modes - Cross Color Suppressor*

1. Press ▼ so Cross Color Suppressor is highlighted in the Picture Setup List.

2. Press ▶ . The Cross Color Suppressor Window will become active. **Diagram 75**

3. Press ▲ ▼ to set ON/OFF.

4. To continue in Video Modes, press ◀ so the Cross Color Suppressor Window is no longer active and to save the setting.

5. Continue to Film Mode or press Menu to exit the OSD.

Film Mode Detect
This setting will turn the Film Mode Detect ON/OFF. Film Mode Detection, also known as 3:2 Pulldown Detect, removes motion artifacts from 24 frame per second film content that has been converted to 30 frame per second video.
Options: ON, OFF

1. Press ▼ so Film Mode Detect is highlighted in the Picture Setup List.

2. Press ▶ . The Film Mode Detect Window will become active. **Diagram 76**

3. Press ▲ ▼ to set ON/OFF.

4. To continue in Video Modes, press ◀ so the Cross Film Mode Detect Window is no longer active and to save the setting.

5. To return to the Setup Menu, press ◀ two times.

6. To exit the OSD press Menu.

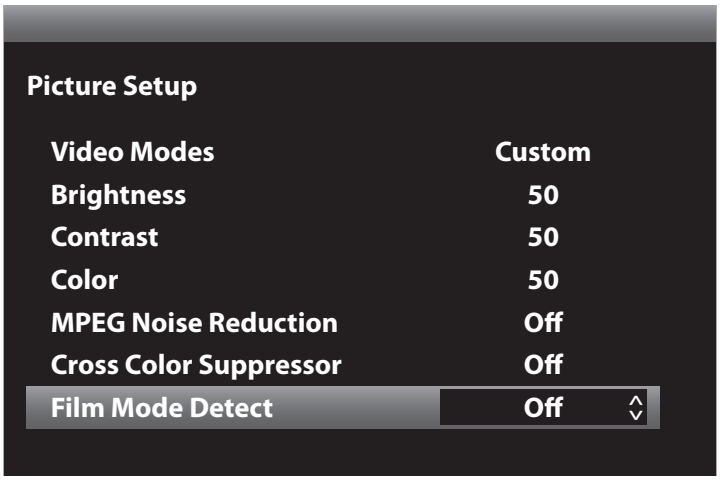


Diagram 76 *Video Modes - Film Mode Detect*

OPERATING THE M80

OPERATING THE M80

Before operating the M80, be sure all instructions from the previous sections have been followed regarding installation and connections.

Install M80 Remote Batteries

The M80 Remote Control comes with two AAA batteries. Install them into the Battery Compartment as show in **Diagram 77.**

1. Remove the Battery Compartment Cover.
2. Batteries are most easily installed by first inserting the negative end (-) onto the spring terminals and the pressing the positive end (+) down into the Battery Compartment.
3. Replace the Battery Compartment Cover.

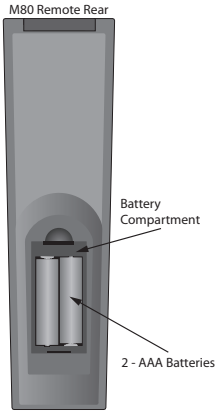


Diagram 77 *Installing M80 Remote Control Batteries*

Turning ON the M80

With the M80 properly installed and connected, and with the Main Power Cord plugged in to an unswitched 110V AC Outlet, the ON/Standby button Backlight will illuminate red to indicate Standby.

ON

Press the ON/Standby button on the M80 Front Panel as shown in **Diagram 78**. The M80 will turn ON to the last source selected. Using the M80 Remote, press one of the Source 1-8, Tuner or iPod buttons as shown in **Diagram 78** for the desired source. The M80 will turn ON to that source.

The ON/Standby Backlight will turn blue and the Front Panel Display will turn ON. The M80 will go through a start-up sequence of 5 seconds. The M80 will not respond to commands during the start-up. After an audible click, the M80 is ready for operation.

OFF

Press the ON/Standby button on the M80 Front Panel or Power button on the M80 Remote as shown in **Diagram 78**. The ON/Standby Backlight will turn red and the Front Panel Display will turn OFF.

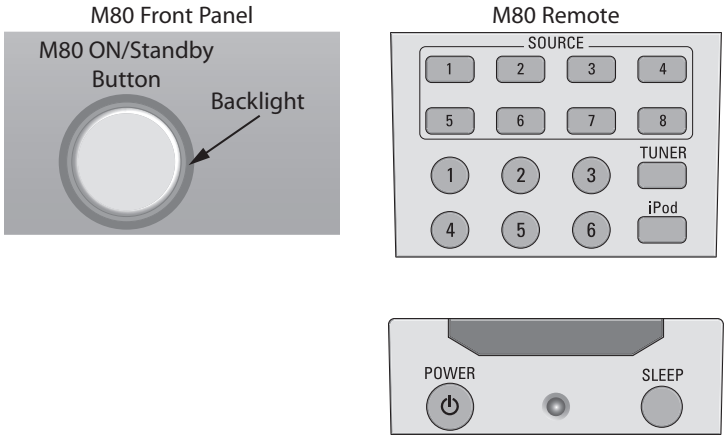


Diagram 78 *M80 ON/Standby*

Selecting a Source

With the M80 power ON, repeatedly press the Source button on the M80 Front Panel to scroll through the sources or, press one of the Source 1-8, Tuner or iPod buttons on the M80 Remote to select that source. The selected source and current Listening Mode will appear in the Front Panel Display as shown in **Diagram 79.**

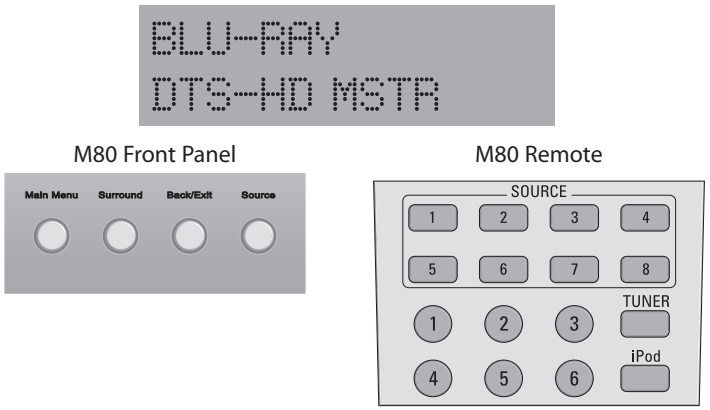


Diagram 79 *Selecting a Source*

Volume
With the M80 power ON turn the Volume Knob on the M80 Front Panel or press the Volume ▲ ▼ buttons on the M80 Remote to adjust the speaker level audio output. Turn clockwise (right) to turn volume up; turn counterclockwise (left) to turn the volume down. The audio output level in dB (decibels) will be displayed on the Front Panel Display while the knob is being turned and for three seconds after a volume adjustment has been made. **Diagram 80**

Mute
With the M80 power ON and with any source selected, press the Mute button on the M80 Remote to cut the amplifier output to the selected speakers. MUTE will slowly flash on the Front Panel Display and Video Display, if on. Press the Mute button again to un-mute the speakers. **Diagram 80**

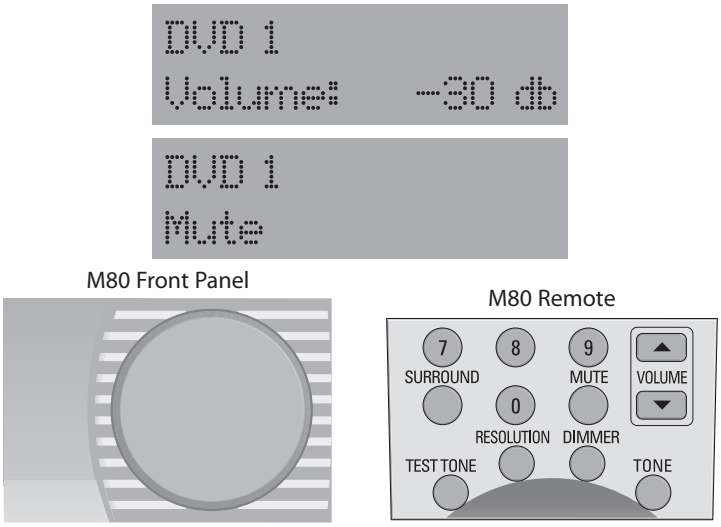


Diagram 80 *Volume/Mute*

Tone Controls - M80 Remote
The Tone Controls can be changed from the M80 Remote without using the OSD. This option is useful if the M80 is being used in an audio only mode and the Video Display is turned off or if activating the OSD will interfere with the Video being played. Tone Control changes from the remote will be displayed on the Front Panel Display as shown in **Diagram 81.**

1. Press the Tone button on the M80 Remote. The Tone Active message will appear on the Front Panel Display.
2. Press the Tone button again. The Treble setting message will appear on the Front Panel Display.
3. Press Volume ▲ ▼ to adjust Treble.
4. Repeat **Steps 2-3** for the Bass setting.
5. The Front Panel message will turn off 5 seconds after the last tone adjustment is made and return to normal mode, typically indicating the Listening Mode.
6. To turn Tone Controls OFF, press the Tone button until the Tone Defeat message appears on the Front Panel Display.

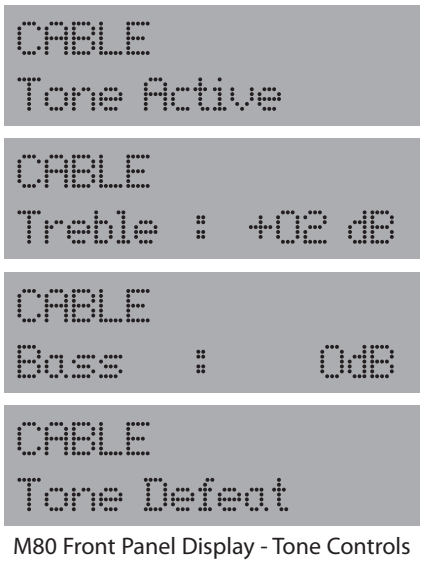


Diagram 81 *M80 Remote Tone Controls*

Tone Controls
The M80 Tone Controls can be adjusted two ways. One is by using the OSD the other is by using the Tone button on the M80 Remote.

The Tone Controls have two modes. Tone Defeat OFF has the audio signals (analog or digital) pass through the Tone Controls. Tone Defeat ON has audio signals (analog or digital) bypass the Tone Controls.
Treble Range: +/-10dB
Bass Range: +/- 10dB

Tone Controls - OSD
The OSD provides intuitive tone controls with the added benefit of the On-Screen Display providing visual confirmation of Tone settings when the M80 is hidden in a cabinet or closet and the Front Panel Display is not directly visible.

1. Press the Main Menu Button on the M80 Front Panel or Menu button on the M80 Remote. The OSD will appear on the Video Display.
2. Press ▼ two times so Tone Controls is highlighted in the OSD Menu. **Diagram 82**
3. Press ▶ . The Tone Defeat line be highlighted.
4. If Tone Defeat is ON, press ▶ . The Tone Defeat window become active.
5. Press ▲ ▼ to set Tone Defeat to OFF.
6. Press ◀ then ▼ the Treble line will be highlighted. **Diagram 83**
7. Press ▶ . The Treble window become active.
8. Press ▲ ▼ to adjust Treble. The setting will be saved as it is made.
9. Repeat **Steps 6-8** to adjust Bass. **Diagram 84**
10. Press ◀ twice to return to the OSD Menu.
11. Press ◀ or Menu to exit the OSD.

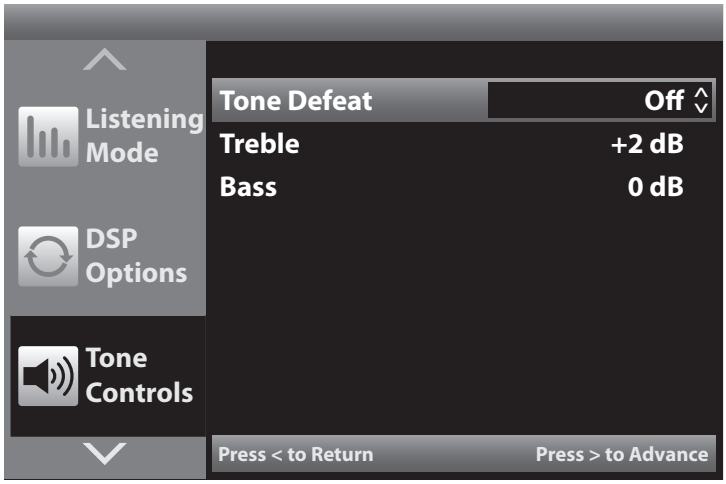


Diagram 82 *OSD Tone Controls*

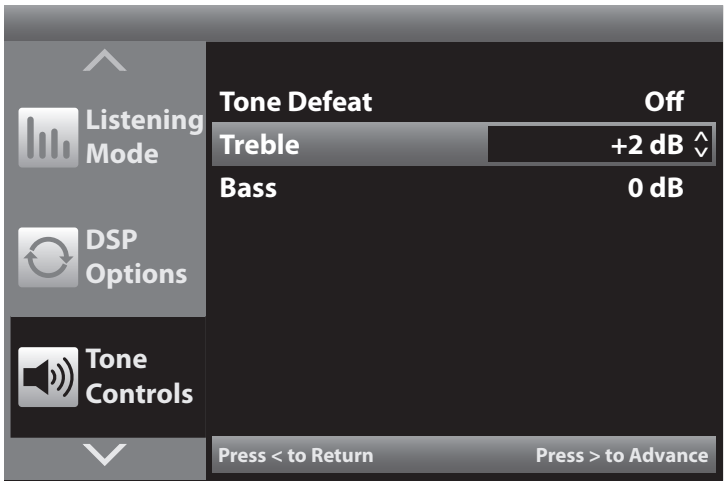


Diagram 83 *OSD Tone Controls - Treble*

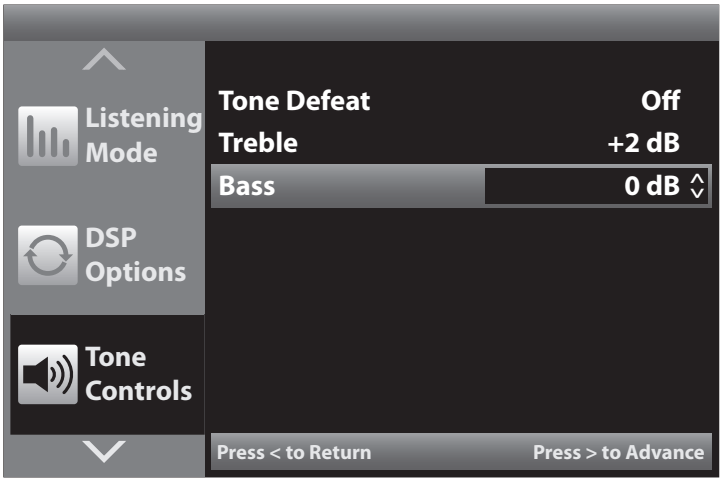


Diagram 84 *OSD Tone Controls - Bass*

Operating the Tuner

The M80 features a built-in AM/FM Tuner that allows 30 Preset Channels to be stored for each band. The Tuner can be controlled for manual tuning or Preset selection from the M80 Front Panel or M80 Remote. The M80 Remote also allows direct numeric tuning of channels and Presets.

For information on operating a connected, external XM Ready Tuner, see section: **XM Tuner**, immediately following.

M80 Front Panel Display - Direct Numeric Tuning

M80 Front Panel Display - Tuned FM Channel

Selecting the Tuner

1. With the M80 power ON, repeatedly press the Source button on the Front Panel until Tuner is selected or press the Tuner button on the M80 Remote.
   - **a)** The band, frequency, ST/MN (stereo/mono) and Preset Number (if applicable) of the last tuned channel will appear in the Front Panel Display as shown in **Diagram 85**. (The lower line of the Front Panel Display indicates the Listening Mode to the speakers, not the signal mode of the Tuner.)
   - **b)** If the Video Display is ON the Tuner OSD will appear on screen as shown in **Diagram 85**.
   - **c)** If the channel is FM Stereo, FM STEREO will display in the lower left corner. If the channel is FM Mono or the FM Mode button has been pressed FM MONO will be displayed.
   - **d)** If the channel is a Preset, the Preset Number will be displayed.

M80 Tuner OSD - Tuned FM Channel

Band

1. Repeatedly press the Tuner or Band button on the M80 Remote to select AM, FM or XM.

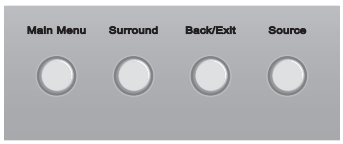
Tuning (Manual)

1. With AM or FM selected, press the Cursor ◀ ▶ buttons on the M80 Front Panel or M80 Remote or the TUNE ▼ ▲ buttons on the M80 Remote to decrease or increase the tuner frequency by one increment. If the tuned frequency is also a Preset, the Preset Number is indicated on the Front Panel Display to the right of ST/MN and in the OSD.

Tuning (Direct Numeric)

1. With the AM or FM Tuner selected, press the OK button on the M80 Front Panel or M80 Remote so TUNE appears on the M80 Front Panel Display. Press the numeric buttons to enter the channel frequency, i.e. 9-5-5 (95.5), 1-0-5-1 (105.1), 1-0-6-7 (106.7), etc. The channel frequency will appear to the right of TUNE. After three seconds, the tuned frequency will display in the upper line of the display and the current Listening Mode will re-appear on the lower line. If the tuned frequency is also a Preset, the Preset Number will be indicated on the Front Panel Display to the right of ST/MN and in the OSD. **Diagram 85**

M80 Front Panel



M80 Remote

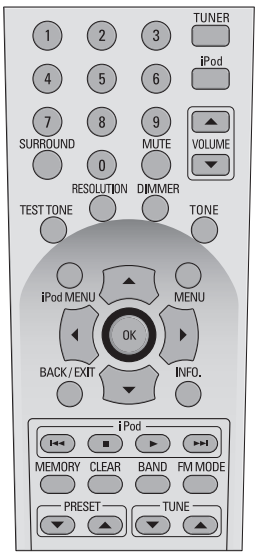


Diagram 85 *Tuner Controls*

FM Mode

1. Press this button on the M80 Remote to switch the FM Tuner between stereo and mono modes. Typically, FM Mode should be left in the stereo mode. The mono setting can be useful for cleaning up background noise when tuned to weak stereo channels.

a) When FM Stereo is selected, ST will appear on the upper line of the Front Panel Display between the tuned frequency and Preset Number. The FM STEREO icon will display in the OSD. **Diagram 85**

b) When FM Mono is selected, MN will appear on the upper line of the Front Panel Display between the tuned frequency and Preset Number. The FM MONO icon will display in the OSD. **Diagram 85**

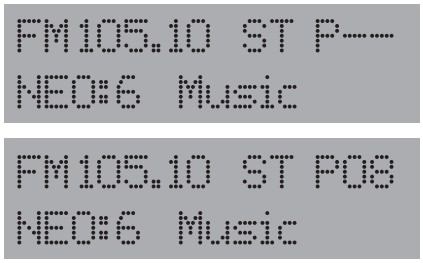


Diagram 86 *M80 Front Panel - Programming Presets*

Diagram 87 *M80 Front Panel - Deleting a Preset*

Presets

The M80 can store up to 30 each AM and FM Preset Channels. Presets are stored manually by individually tuning channels and then saving them as Presets.

Preset Programming

1. Select the appropriate band and tune an AM or FM Channel to be stored as a Preset.

2. Press the Memory button on the M80 Remote. If there are still unused Presets for a given band, P- - with the next higher Preset location will begin to flash slowly on the Front Panel Display. **Diagram 86**

3. Press the Memory button again the tuned channel will be stored as a Preset.

4. If all Presets for a given band have been used, press the OK button on the M80 Remote so PRESET appears in the Front Panel Display.

5. Quickly press the Memory button. P- - and P01 will alternately flash on the Front Panel Display.

6. Quickly enter the Preset number (1-30) to be replaced. The previously stored channel will be deleted and the currently tuned channel will be stored.

Delete a Preset

1. Select the Preset to be deleted.

2. Press the Clear button on the M80 Remote. 'Preset Cleared' will scroll across the Front Panel Display from right to left. The selected Preset will be deleted. **Diagram 87**

Preset Tuning (Manual)

1. With the AM or FM Tuner selected, press the PRESET ▼ ▲ buttons on the M80 Remote to select the previous/next programmed Tuner Preset. The selected Preset Number is indicated on the Front Panel Display to the right of ST/MN. With Tuner selected, the M80 Front Panel and Remote Cursor ▼ ▲ buttons can also be used for this function.

Preset Tuning (Direct Numeric)

1. With the AM or FM Tuner selected, press the OK button on the M80 Remote so PRESET appears on the Front Panel Display.

2. Press the Numeric buttons to select Preset Channels. To select Preset 1, simply press 1. To select Preset 30, press 3-0. If there is no Preset programmed to the selected number, the M80 will return to the last tuned channel.

XM Tuner

The M80 features a Rear Panel XM Port for connection of an external XM Ready Satellite Radio Tuner. Once connected and subscription service has been established, the XM Tuner can be controlled from the M80 Front Panel or M80 Remote. XM Tuner metadata will be displayed on the M80 Front Panel Display and XM Tuner OSD.

Note 1: XM Tuner metadata is not displayed in Zone 2.

Note 2: The XM Ready connection requires an external XM Satellite Radio Tuner that must be purchased separately. XM Satellite Radio requires subscription service from XM Satellite Radio to be able to receive program. To activate an XM Satellite Radio Subscription, call 1.800.XM RADIO (1.800.967.2346) or visit www.xmradio.com and have the Radio ID ready. Please refer to the instructions provided with the XM Satellite Radio Tuner for additional information.

Selecting the XM Tuner

1. With the M80 power ON, repeatedly press the Source button on the Front Panel until Tuner is selected or press the Tuner button on the M80 Remote.

2. Repeatedly press the Tuner or Band button on the M80 Remote to select XM.

   When XM is selected, the last tuned XM Channel and Channel Name will appear in the M80 Front Panel Display. If the Video Display is ON, the XM OSD will appear automatically. The XM Category (Neighborhood), Channel Name, Channel Number, Artist and Song Title and will be displayed in the OSD. **Diagram 88**

   If there is a problem with the antenna, CHECK ANTENNA will appear in the Front Panel Display and OSD as shown in **Diagram 89**. If the XM Ready Tuner is not connected to the XM Port on the M80 Rear Panel, CHECK XM TUNER will appear in the Front Panel Display and OSD. The OSD metadata from the XM Tuner may freeze until the problem is corrected.

XM Search Modes

The M80 provides three Search Modes for tuning XM Channels: All Channel Search, Category Search and Preset Search. To select an XM Search Mode:

1. With the XM Tuner selected, repeatedly press the Menu button on the M80 Front Panel or Remote until the desired mode appears in the Front Panel Display. Search Mode selection is not shown on the XM OSD.

M80 Front Panel Display - Tuned XM Channel

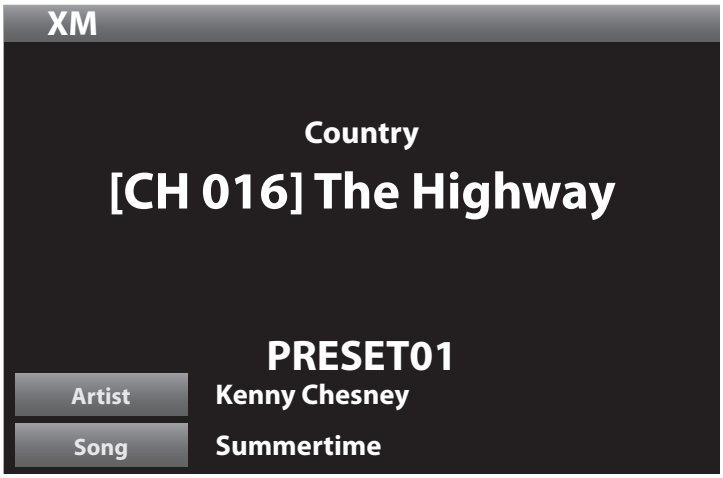


Diagram 88 *OSD - Tuned XM Channel*

M80 Front Panel Display - Check XM Tuner

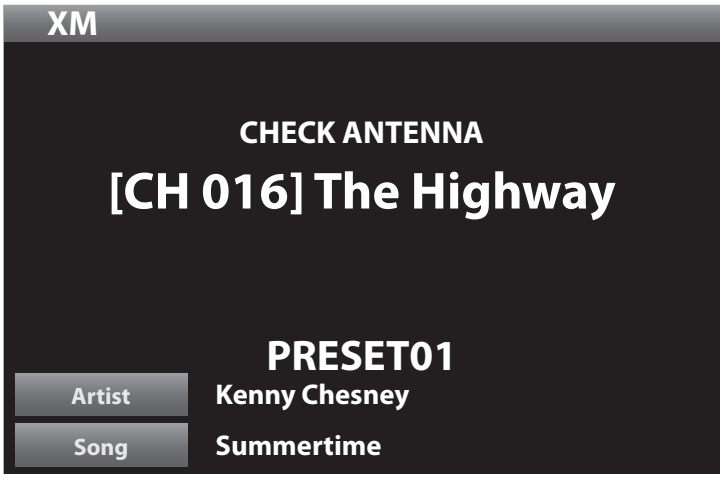


Diagram 89 *OSD - Check XM Antenna*

All Channel Search

All Channel Search allows tuning XM Channels by using the Cursor buttons on the Front Panel or Remote and the Tune, Preset and Numeric buttons on the Remote. In All Channel Search, the Numeric buttons can directly tune any XM Channel.

Diagram 90 *M80 Front Panel Display - All Channel Search*

1. With the XM Tuner selected, repeatedly press the Menu button on the M80 Front Panel or Remote until ALL CH SEARCH appears in the Front Panel Display. The currently selected XM Channel will be indicated on the lower line of the display. **Diagram 90**

Tuning XM Channels (Manual)

1. With the XM Tuner set to All Channel Search, press the Cursor ◀ ▶ buttons on the M80 Front Panel or M80 Remote or the TUNE ▼ ▲ buttons on the M80 Remote to scroll up/down XM Channels. Press and hold the Cursor ◀ ▶ buttons on the M80 Front Panel or M80 Remote for fast scroll.

Tuning XM Channels (Direct Numeric)

1. With the XM Tuner set to All Channel Search, press the Numeric buttons to enter the Channel Number, i.e. 0-0-6, (ch 6), 0-1-6, (ch 16), 1-5-1, (ch 151), etc. In the Front Panel Display, the Channel Number will appear to the right of XM. If the Channel is also a Preset, the Preset Number will appear to the right of the Channel Number. The tuned Channel Name will display on the lower line. The XM OSD will display normal XM metadata after the channel has been selected. **Diagram 88**

Tuning XM Preset Channels (Manual)

1. With the XM Tuner set to All Channel Search, press the Cursor ▼ ▲ buttons on the M80 Front Panel or M80 Remote or the PRESET ▼ ▲ buttons on the M80 Remote to scroll up/down XM Preset Channels.

Category Search (Search by Neighborhood)

XM Channels are identified as Categories, (aka: Neighborhood) to indicate the type of music or program played on that channel. Categories include: Rock, Country, Talk/News, Sports, Comedy and many more. Category Search allows tuning XM Channels within a particular Category by using the Cursor buttons on the Front Panel or Remote and the Tune buttons on the Remote. In Category Search, the Numeric buttons will directly tune all XM Channels regardless of Category.

Diagram 91 *M80 Front Panel Display - Category Search*

1. With the XM Tuner selected, repeatedly press the Menu button on the M80 Front Panel or Remote until CAT SEARCH appears in the Front Panel Display. The currently selected Category will be indicated on the lower line of the Front Panel Display **(Diagram 91)** and on the top line of the XM OSD.

Selecting a Category

1. With the XM Tuner set to Category Search, press the Cursor ▼ ▲ buttons on the M80 Front Panel or M80 Remote to scroll up/down XM Categories.

Tuning Channels by Category

1. With a Category selected, press the Cursor ◀ ▶ buttons on the M80 Front Panel or M80 Remote or the TUNE ▼ ▲ buttons on the M80 Remote to scroll up/down the Channels within the selected Category.

Tuning (Direct Numeric)

With Category Search selected, the Numeric buttons allow direct numeric tuning of any XM Channel regardless of Category.

1. With the XM Tuner set to Category Search, press the Numeric buttons to enter the Channel Number, i.e. 0-0-6, (ch 6), 0-1-6, (ch 16), 1-5-1, (ch 151), etc. In the Front Panel Display, the Channel Number will appear to the right of XM. If the Channel is also a Preset, the Preset Number will appear to the right of the Channel Number. The tuned Channel Name will display on the lower line. The XM OSD will display normal XM metadata after the channel has been selected. **Diagram 88**

Tuning XM Preset Channels (Manual)

1. With the XM Tuner set to Category Search, press the Cursor ▼ ▲ buttons on the M80 Front Panel or M80 Remote or the PRESET ▼ ▲ buttons on the M80 Remote to scroll up/down XM Preset Channels.

Preset Search

The M80 can be programmed to store up to 40 XM Preset Channels. Preset Search allows tuning XM Preset Channels by using the Cursor buttons on the Front Panel or Remote and the Tune, Preset and Numeric buttons on the Remote. In Preset Search, the Numeric buttons will directly tune stored XM Preset Channels.

Note: Preset Search mode must be selected in order to store and select XM Presets.

1. With the XM Tuner selected, repeatedly press the Menu button on the M80 Front Panel or Remote until PRESET SEARCH appears in the Front Panel Display. **Diagram 92**

Diagram 92 *M80 Front Panel Display - Preset Search*

Diagram 93 *M80 Front Panel Display - XM Preset Saved*

Diagram 94 *M80 Front Panel Display - XM Preset Deleted*

Preset Programming

1. Select the XM Channel to be stored as a Preset.

2. Press the Memory button on the M80 Remote. If there are still unused Presets, the next higher Preset location will appear in the upper right corner of the Front Panel Display.

3. Press the Memory button again. The tuned channel will be stored as a Preset. 'Preset "X" Saved' will appear on the Front Panel Display. **Diagram 93** (X = the Preset Number.)

4. If all XM Presets have been used, select the XM Channel to be stored as a Preset then press the Memory button. Quickly press the PRESET ▼ ▲ buttons to scroll to the XM Preset to be replaced. The currently selected Preset Number will slowly flash on the Front Panel Display. Press the Memory button when the desired Preset location is selected. The previously stored channel will be deleted and the currently tuned channel will be stored. 'Preset "X" Saved' will appear on the Front Panel Display. Or:

5. If all XM Presets have been used, select the XM Channel to be stored as a Preset then press the Memory button. Quickly enter the Preset Number (1-40) to be replaced. The previously stored channel will be deleted and the currently tuned channel will be stored. 'Preset "X" Saved' will appear on the Front Panel Display.

Delete a Preset

1. Select the Preset to be deleted.

2. Press the Clear button on the M80 Remote. 'X Deleted' will appear on the Front Panel Display. The selected Preset will be deleted. **Diagram 94**

Tuning XM Channels (Manual)

1. With the XM Tuner set to Preset Search, press the Cursor ◄ ► buttons on the M80 Front Panel or M80 Remote or the TUNE ▼ ▲ buttons on the M80 Remote to scroll up/down XM Channels. Press and hold the Cursor ◄ ► buttons on the M80 Front Panel or M80 Remote for fast scroll.

Tuning XM Preset Channels (Manual)

1. With the XM Tuner set to Preset Search, press the Cursor ▼ ▲ buttons on the M80 Front Panel or M80 Remote or the PRESET ▼ ▲ buttons on the M80 Remote to scroll up/down XM Preset Channels.

Tuning XM Preset Channels (Direct Numeric)

1. With the XM Tuner set to Preset Search, press the Numeric buttons to enter the M80 Preset Number, i.e. 5, 15, 35, etc followed by the OK button to select the desired XM Preset Channel. In the Front Panel Display, the XM Channel Number will appear in the upper left corner. The Preset Number will appear in the upper right corner. The tuned Channel Name will display on the lower line. The XM OSD will display normal XM metadata after the channel has been selected. **Diagram 88**

iPod

With an iPod connected to the M80 via a Proficient Audio iPod Dock (option, available separately), the iPod can be controlled from and played through the M80. Typical iPod Menus and metadata will be displayed in the Front Panel Display and in an iPod OSD on the Main Room Video Display. iPod Menus are navigated as is typical for iPod by using the M80 Front Panel and Remote Cursor and OK buttons instead of the iPod Click Wheel and Center button. Play, Pause and Track are controlled with the iPod transport buttons on the M80 Remote.

Note 1: See section: **Source Setup/iPod/iPod Dock** for additional information.

Note 2: iPod metadata is not displayed in Zone 2.

Select iPod

1. Press the Source 4 or iPod button on the M80 Remote or repeatedly press the Source button on the M80 Front Panel. The M80 iPod Main Menu (Playlists) will appear in the OSD. Now Playing will be highlighted by default and will appear in the Front Panel Display. **Diagram 95**
   Note: If there is a connection problem with the iPod/iPod Dock or if there is no iPod in the iPod Dock when iPod is selected, the 'iPod Disconnected' message will appear in the Front Panel Display and 'iPod NOT DOCKED' will appear in the OSD as shown in **Diagram 96**.

iPod Menu Navigation

1. With the Main Room Video Display ON and if not already on-screen, press the iPod Menu button on the M80 Remote to activate the iPod OSD Menu.
   Note: iPod Menu and metadata are not displayed on the Zone 2 Video Display.

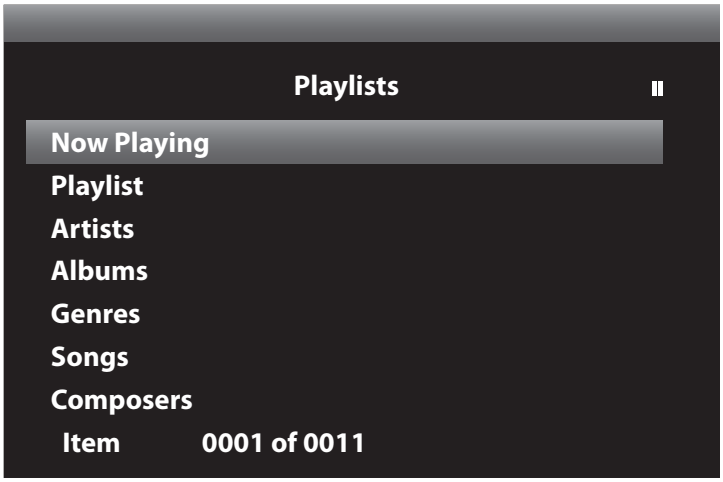
2. Press ▼ ▲ buttons to highlight a menu item. Repeatedly press the ▼ ▲ buttons to scroll to items not currently displayed on-screen.

3. Press ▶ to select the item. The selected item will advance to the next menu level as is typical for iPod navigation.

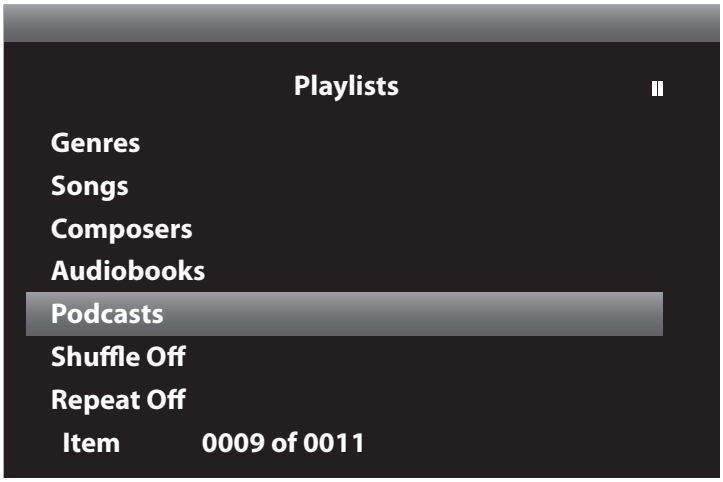
4. Continue to alternately press the ▼ ▲ and ◀ ▶ buttons to navigate the menus to select music, Audiobooks, Podcasts, etc.

5. Press ▶ to play a selected Song, Album, Audiobook or Podcast. The Now Playing screen will appear. **Diagram 97**
   Note: An iPod Menu Timeout can be set in Source Setup/iPod Setup that will determine how long the iPod Menu will remain on-screen after navigating to the iPod Menu from the Now Playing Screen, while the iPod is in Play, before returning to the Now Playing Screen.

M80 Front Panel Display - iPod Menu Item

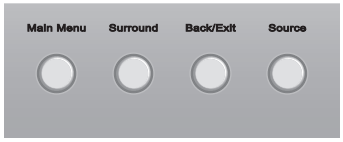


OSD - iPod Main Menu - Page 1



OSD - iPod Main Menu - Page 2

M80 Front Panel



M80 Remote

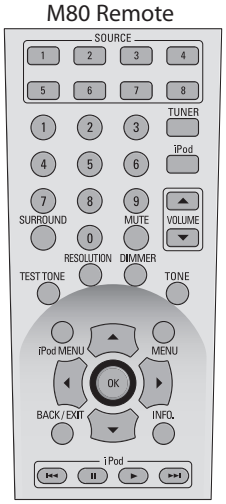


Diagram 95 *iPod Controls*

iPod Control

1. Press the iPod Previous Track, Pause, Play and Next Track buttons on the M80 Remote to play, stop and skip tracks.

Shuffle

The Shuffle function will randomly play individual songs or entire albums from the Songs and Albums Playlists.

1. To shuffle songs, with Shuffle Off highlighted in the Main Menu, press ▶. The Main Menu item will change to 'Shuffle Songs' and the iPod will randomly play songs from the Songs Playlist.

2. To shuffle albums, with Shuffle Off highlighted in the Main Menu, press ▶ twice. The Main Menu item will change to 'Shuffle Albums' and the iPod will randomly play entire albums from the Albums Playlist.

3. To turn Shuffle off, with 'Shuffle Albums' highlighted in the Main Menu, press ▶. The Main Menu item will change to 'Shuffle Off'. Navigate the iPod OSD to make another selection.

Repeat

The Repeat function will play a selected song or playlist continually until stopped or another selection is made.

1. To repeat a song, select a song from a playlist. With Repeat Off highlighted in the Main Menu, press ▶. The Main Menu item will change to 'Repeat One' and the iPod will continually play the selected song.

2. To repeat a all songs in a playlist, select a playlist. With Repeat Off highlighted in the Main Menu, press ▶ twice. The Main Menu item will change to 'Repeat All' and the iPod will continually play the selected playlist.

3. To turn Repeat Off, with 'Repeat All' highlighted in the Main Menu, press ▶. The Main Menu item will change to 'Repeat Off'. Navigate the iPod OSD to make another selection.

Now Playing

When a song or playlist has been selected, the track number and elapsed time will appear in the Front Panel Display and Title, Artist, Album and a Time Line will be displayed in the iPod OSD Now Playing Screen. **Diagram 97**. An icon for the transport function, (play, stop, pause) will displayed in the lower left corner of the Front Panel Display next to the track number and in the upper right corner of the OSD.
Note: The Now Playing Screen will only display the first 16 characters for Title, Artist and Album.

M80 Front Panel Display - iPod Not Docked

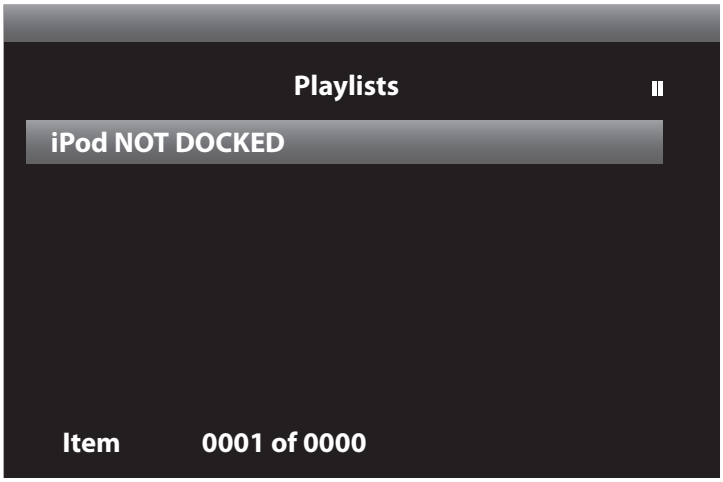


Diagram 96 *iPod OSD - iPod Not Docked*

M80 Front Panel Display - iPod Now Playing

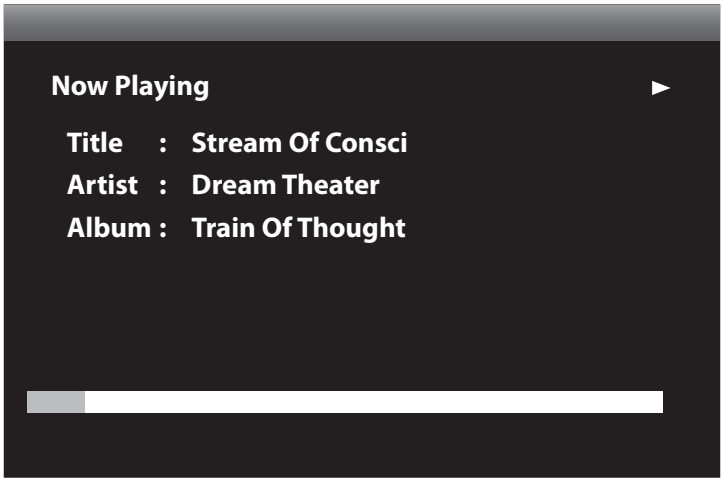


Diagram 97 *iPod OSD - iPod Now Playing*

Sleep Timer
With the M80 ON and with any source selected, press the Sleep button on the M80 Remote to turn the M80 Sleep Timer ON. Sleep Timer durations from 15-90 minutes in 15 minute increments can be set.

1. Press the Sleep button. 'Sleep Off' will appear in the lower line of the Front Panel Display. Repeatedly press the Sleep button until the desired sleep timeout is set. When set, the Front Panel Display will dim to half brightness and display full brightness for two seconds as Sleep Timer duration is reduced by minute. **Diagram 98**

2. To cancel Sleep Timer, repeatedly press the Sleep button until 'Sleep Off' appears in the lower line of the Front Panel Display.

Diagram 98 *Sleep Timer*

Dimmer
Press the Dimmer button on the M80 Remote to control the brightness of the Front Panel Display. When the M80 is turned ON, the Front Panel Display will illuminate to full brightness. One press will dim the display to about half brightness, a second press will restore full brightness to the display. **Diagram 99**

Dimming the Front Panel Display may be desirable when watching movies or other video content in a darkened room, to reduce glare from the screen or if the fully illuminated display is distracting.

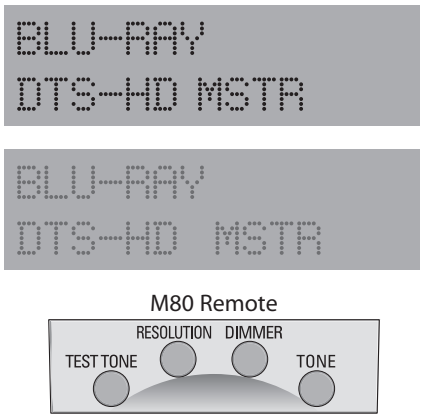


Diagram 99 *Front Panel Dimmer*

Recording
With Audio/Video 1 IN/OUT connected to an audio/video record/playback device or Audio 5 IN/OUT connected to an audio record/playback device as described in sections: **Connections/Audio/Video 1 IN/OUT** or **Connections/Audio 5 IN/OUT**:

1. Select the Source to be recorded by selecting the Source from the M80 Front Panel or Remote. The Source to be recorded will be displayed in the Front Panel Display.

2. With the source to be recorded connected with the default connections, (analog line level audio and composite video) and with the appropriate Analog Audio and Composite Video Inputs selected in Source Setup, press record on the record/playback device. It will record the analog audio and composite video from the selected source. S-Video will be recorded if the source has S-Video input connections and S-Video is selected as the Video Input in Source Setup for the selected source.
   Note: Analog audio input is not converted to digital audio output.

3. With the source to be recorded connected with either a digital coaxial or optical audio input and with the appropriate coaxial or optical connection selected as the Digital Audio Input in Source Setup, press record on the record/playback device. It will record the digital audio from the selected source, unless copy protected. If the content is copy protected, switch to the Analog Audio Input. Composite or S-Video will record as selected in Source Setup, by source. A Coaxial IN can output to either the Coaxial or Optical OUT and an Optical IN can output to either the Optical or Coaxial OUT.
   Note: Digital audio input is not converted to analog audio output.

4. To play the recorded content, after recording is finished, select Source 1 or Source 5, as appropriate, from the M80 Front Panel or Remote, and then play the recorded content from the recorder. Be sure the appropriate Analog/Digital Audio and Composite/S-Video Inputs are selected in Source Setup for Source 1 or Source 5, as appropriate, for playback.

LISTENING MODES

The M80 can decode and process over a dozen different Listening Modes. Listening Modes are processes for decoding multichannel and surround audio from digital sources, simulating surround effects in stereo speaker configurations, 'synthesizing' surround sound for legacy two-channel audio sources (digital and analog stereo sources) and oh yes, it can play good old fashioned stereo. The M80 also provides a discrete 7.1 channel Multi-Input for a device with a discrete multichannel analog output.

Availability of Listening Modes is determined by a number of factors including: original content (encoded vs un-encoded), playback device connection, (analog vs digital) and speaker configuration, (5.1 vs 7.1). Not all modes are available for all sources and content. The M80 can be configured to automatically detect encoded content and automatically select the 'native' process, some modes can be set as preferences, by source, for certain types of content or connections, and all available modes for a given configuration can be selected manually.

Listening Modes are selected by pressing the Surround buttons on the M80 Front Panel or Remote or by using the OSD Listening Mode Menu. The currently selected Listening Mode will be indicated on the lower line of the Front Panel Display and in the OSD Listening Mode Menu. Listening Mode Setup is located in the OSD Setup Menu under Listening Mode Setup.

Listening Modes from DVD Menus

Listening Mode availability can be affected by the menu settings on Blu-ray and DVD-Video Players. Some discs feature multiple audio mode options and selection of these options will affect what Listening Modes are available to the M80. For example, if a DVD-Video Disc with Dolby Stereo, Dolby Surround and DTS encoding is loaded to a DVD player, the player may default to Dolby Stereo. If so, and the M80 Listening Mode defaults are set to Automatic Selection, the M80 will select Dolby Stereo as the Listening Mode. (If a preference has been set for Dolby Digital 2 Channel, it will be selected as the Listening Mode.) In order to take advantage of the Dolby Digital 5.1 Surround encoding, it will be necessary to open the DVD Disc Menu and manually select the surround mode. (See DVD Player Manual for additional information.)

The same is true for a disc with Dolby and DTS encoding. If the DTS encoding is preferred, depending on the disc, the player and how the M80 Listening Mode Setup is configured, it may be necessary to open the DVD Disc Menu and manually select the DTS Surround encoding.

Blu-ray Player Setup

Many Blu-ray Players have on-board decoding capability for Dolby or DTS encoded audio content. If so, the player may decode the audio content and output it as a PCM bitstream. When this occurs, the M80 Front Panel Display will indicate: Multi-ch PCM. This indicates that the Blu-ray Player has decoded the audio content before outputting it to the M80 over the HDMI connection. The Blu-ray Player Setup can be changed to output the encoded Dolby or DTS audio content to the M80, allowing the M80 to decode the audio content. (The Blu-ray Player may have two or three options for decoding digital audio output. There will be no difference in sound quality when the decoding is done by the Blu-ray Player or by the M80. However, depending on the player and the decoding process selected, some elements of the audio content may be affected by or absent from the decoded PCM stream coming from the Blu-ray Player. Please refer to the Blu-ray Player manual for additional information.) When the M80 is decoding the audio content, the M80 Front Panel Display will indicate: DTS-HD MSTR, DTS, Dolby TrueHD , Dolby Digital +, etc.

If a Blu-ray Disc or DVD-Video Disc indicates it has a specific type of audio encoding, the M80 Listening Mode settings are configured for automatic selection and the Front Panel Display does not indicate the appropriate mode, or if the stated encoding mode is not available to manual Listening Mode selection, check the Blu-ray or DVD Player Setup Menu, the Disc Setup Menu and M80 Source Setup until the appropriate settings and connections are selected to allow processing of the 'native' audio encoding.

There are no absolutes for Listening Mode settings and not everything has to be played in a surround mode. Setting the M80 for automatic selection and letting everything play in its natural format is recommended. The best selection is what sounds good to the listener...and sometimes that might even be good old stereo! The M80 cannot be damaged by selecting Listening Modes, so feel free to change settings to get familiar the different modes and decide which ones are right for the content being played.

Important Warning

Listening to multichannel audio is very different from standard two-channel (stereo) audio. With the dynamic range of multichannel digital audio played through six (5.1 configuration) or eight (7.1 configuration) speakers, it is easy to achieve high SPL's (Sound Pressure Levels) in a given environment. Long term exposure to high SPLs can cause hearing loss. The purity of digital audio when reproduced by high quality amplification, such as the M80, and played through quality, dynamic loudspeakers, will not sound distorted. That clarity can be misleading. Be careful to not drive this dynamic, multi-speaker system to unnecessary levels.

OPERATING THE M80

Manual Listening Mode Selection

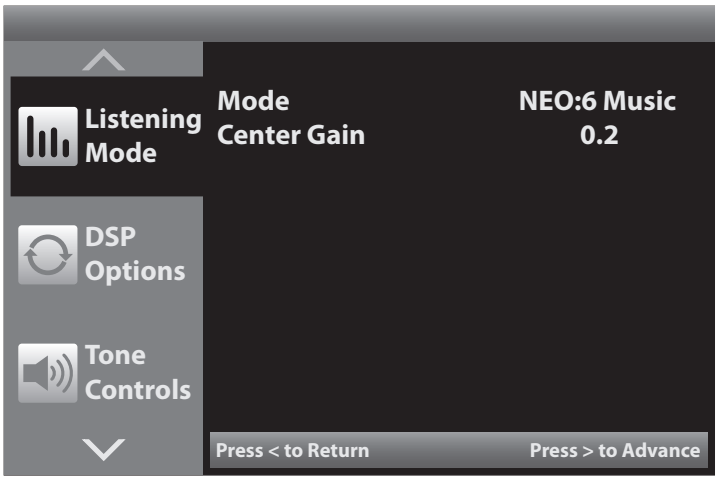
Listening Modes can be manually selected from the M80 Front Panel or Remote Control. All modes are not available for all sources and content. To manually select the available Listening Modes for a selected source:

Remote/Front Panel

1. Repeatedly press the Surround button on the M80 Front Panel or Remote to scroll through the available Listening Modes for the selected source. The selected mode will appear in the Front Panel Display. **Diagram 100**

OSD

1. Press the Menu button on the M80 Front Panel or Remote. The OSD will open on the Video Display. Listening Mode will be selected in the OSD Menu.



M80 OSD - Listening Mode Screen

2. Press ▶. The Mode line will be highlighted.

3. Press ▶ . The Mode Window become active.

M80 Front Panel Display - Listening Mode

4. Press ▲ ▼ to select the desired mode. The selected mode will be displayed in the OSD and Front Panel Display.

5. Press ◀ so the Mode Window is no longer active. The Listening Mode will save automatically.

Dolby Digital Dynamic Range Control

6. With Dolby Stereo, Dolby Digital or Dolby Digital EX selected in **Step 5** above, press ▼. The Dynamic Range Control line will be highlighted.

7. Press ▲ ▼ to select the desired setting. See section: **Listening Modes/Dolby Setup** for additional information.

Dolby Pro Logic II/IIx Music Center Width, Dimension, Panorama

8. With Dolby Pro Logic II/IIx Music selected in **Step 5** above, press ▼. The Center Width line will be highlighted.

9. Press ▲ ▼ to select the desired setting. See section: **Listening Modes/Dolby Setup** for additional information.

10. Press ◀ so the Mode Window is no longer active. The mode will save automatically.

11. Repeat **Steps 8-10** for Dimension and Panorama.

DTS NEO:6 Music

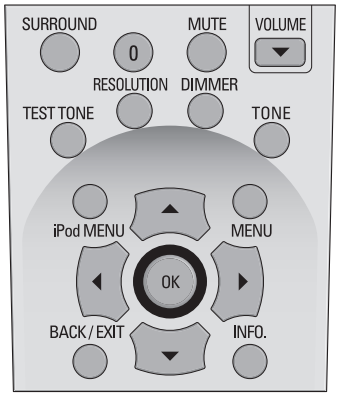
12. With NEO:6 Music selected in **Step 5** above, press ▼. The Center Gain line will be highlighted.

13. Press ▲ ▼ to select the desired setting. See section: **Listening Modes/DTS Setup** for additional information.

Exit Listening Mode

14. Press ◀ to return to the OSD Menu. Press ◀ again or Menu to exit the OSD.

M80 Remote



M80 Front Panel

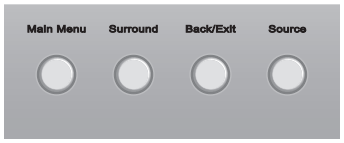


Diagram 100 *Listening Mode Controls*

Automatic Listening Mode Selection

The M80 is setup at the factory to automatically analyze the incoming audio signal and apply the appropriate process (Listening Mode) to encoded content. The selected mode will be indicated on the Front Panel Display. Non-encoded content will play as input when the M80 is set for automatic mode selection. A CD Player, with a coaxial or optical connection, will typically default to Stereo; analog sources will typically default to Analog Bypass. It may be desirable to set preferences or manually select a Listening Mode when this occurs. See sections: **Manually Selecting Listening Modes** and **Setting Listening Mode Preferences** for additional information.

1. With the OSD OFF **s**elect a source other than Tuner or iPod. Listening Modes are configured by source except Tuner and iPod, which have manual selection only.
   Note: The Listening Mode screen will show the settings for the last source selected with the OSD OFF.

2. Open the OSD and with Setup Menu selected, press ▶. Source Setup will highlight in the Setup List.

3. Press ▼ four times so Listening Mode Setup is highlighted in the Setup List. **Diagram 101**

4. Press ▶ . The Listening Mode Setup Menu will appear. Listening Mode will be highlighted. **Diagram 102**

5. Press ▶ . The Listening Mode Screen will appear. 2 Channel will be highlighted. **Diagram 103**

6. If all modes are set to None press Menu to exit the OSD.
   Note: 'None' indicates that no preferences or manual Listening Mode selections have been made.

7. To makes changes, press ▶ . The 2 Channel Window will become active. **Diagram 104**

8. If not selected, press ▲ ▼ to select None.

9. When finished, press ◀ so the 2 Channel Window is no longer active.

10. Press ▼ so the Surround line is highlighted.

11. Repeat **Steps 1-10** for all sources until all modes for all sources are set to None. Press Menu to exit the OSD when finished.
    Note: If a Listening Mode is selected using the Surround button on the M80 Front Panel or Remote while a source is selected, that mode will become the preference for that type of audio signal, for that source, and will appear on the line indicating the type of audio input signal being processed, for that source. The selection will remain in affect for any other like audio signal, for that source, until changed. To retain automatic mode selection, do not change Listening Modes using the Surround buttons.

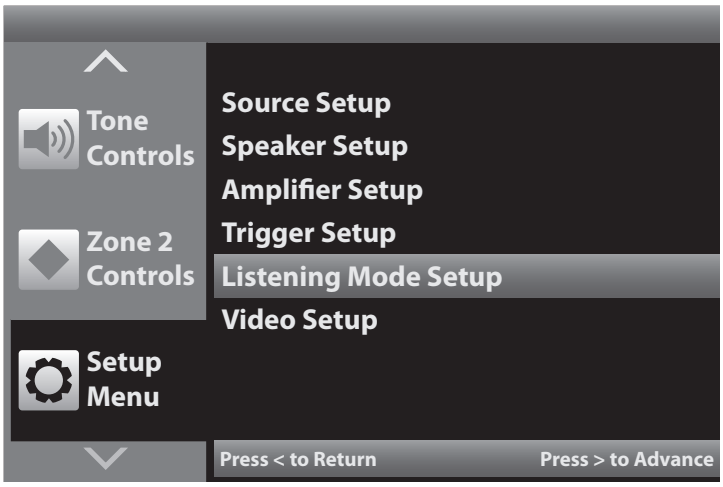


Diagram 101 *Setup Menu - Listening Mode Setup*

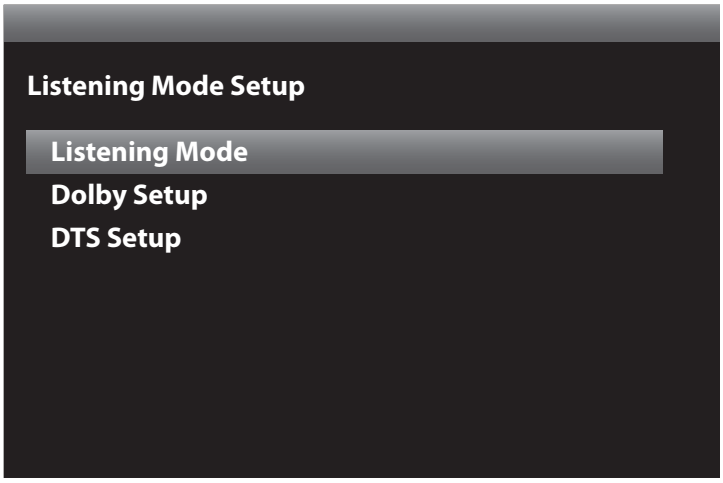


Diagram 102 *Listening Mode Setup*

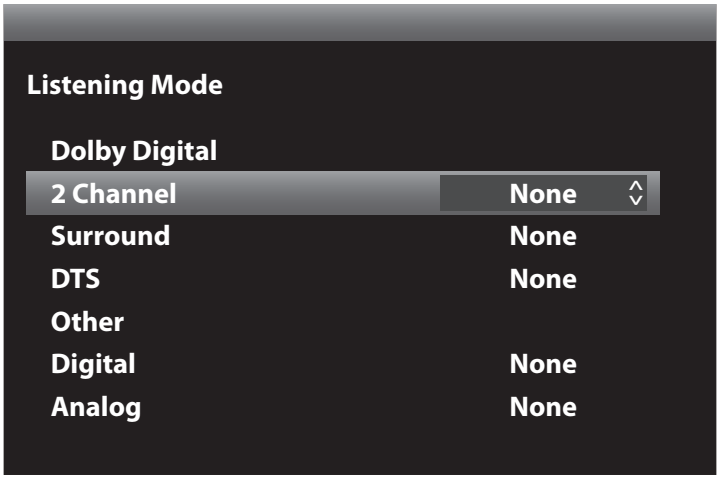


Diagram 103 *Listening Mode Selection*

Setting Listening Mode Preferences

Audio content with specific surround encoding, ie Blu-ray Discs, DVD-Video Discs, digital cable and satellite programming, are typically best experienced by listening to the audio using the Listening Mode it was produced with (See previous section: **Automatic Listening Mode Selection**). Other types of audio content such as stereo digital audio from CD, or stereo analog content from standard cable, a Tape Deck or the M80 Tuner have multiple Listening Mode options. These options can be set to user preference.

The Listening Mode Setup screen, **Diagram 103,** allows different Listening Modes to be set as preferences to be used when specific types of audio signals are detected. With all options set to None, (no preference), the M80 will detect the type of audio encoding for the incoming signal and automatically apply the appropriate Listening Mode. When a preference has been set for a type of input (analog/digital) or process (Dolby/DTS) the M80 will switch to that Listening Mode whenever a like input (analog/digital) is selected or encoding (Dolby/DTS) is detected for that source.

Note: Not all modes are available for all sources and content. Some modes are only available in the auto-select mode (None). Some modes are 5.1/7.1 configuration dependent.

Dolby Digital

These settings provide options/preferences for Dolby encoded stereo and surround audio input signals. Available modes will vary.

2-Channel - This setting will have any Dolby Stereo encoded content output in the selected mode. Typical 5.1 configuration modes: DVS Reference, DVS Wide, Dolby PLII Movie, Dolby PLII Music. Typical 7.1 configuration modes: Stereo Downmix, DVS Reference, DVS Wide, Dolby PLIIx Movie, Dolby PLIIx Music, Dolby Digital EX. **Diagram 104**

Surround - This setting will have any Dolby Digital surround encoded content output in the selected mode. Typical 5.1 configuration modes: DVS Reference, DVS Wide, Dolby PLII Movie, Dolby PLII Music. Typical 7.1 configuration modes: Stereo Downmix, DVS Reference, DVS Wide, Dolby PLIIx Movie, Dolby PLIIx Music, Dolby Digital EX. **Diagram 105**

DTS

This setting provides a preference for DTS encoded audio input signals. Available modes will vary. Typical 5.1 configuration modes: NEO:6 Cinema, NEO:6 Music. Typical 7.1 configuration modes: Stereo Downmix, NEO:6 Cinema, NEO:6 Music, DTS+NEO:6 Music. **Diagram 106**

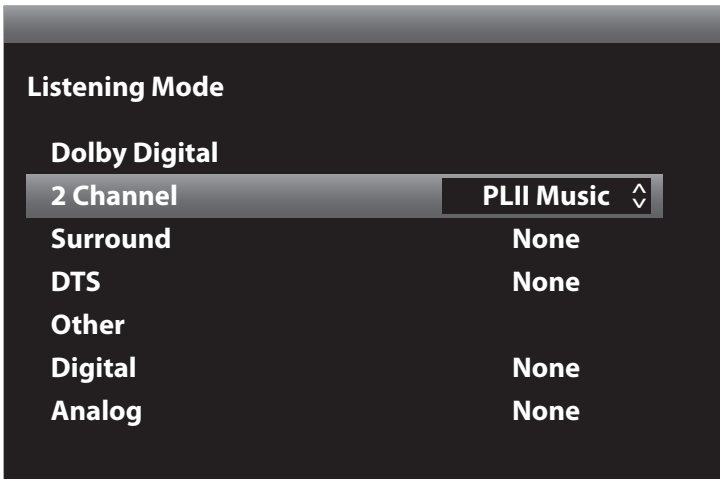


Diagram 104 *Listening Mode - Dolby Digital 2 Channel*

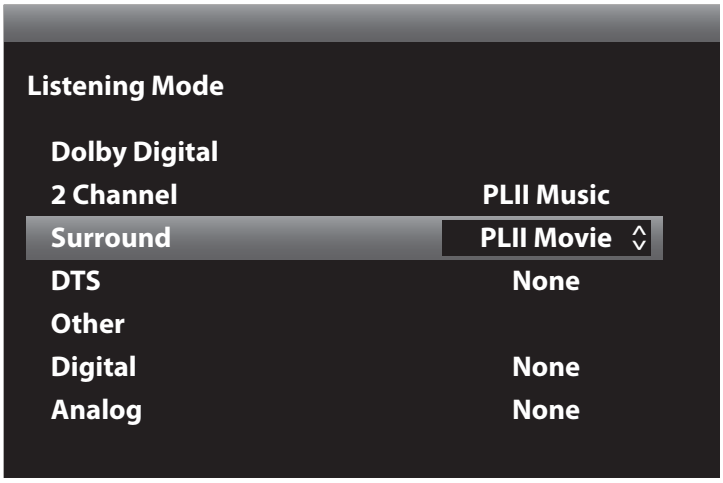


Diagram 105 *Listening Mode - Dolby Digital Surround*

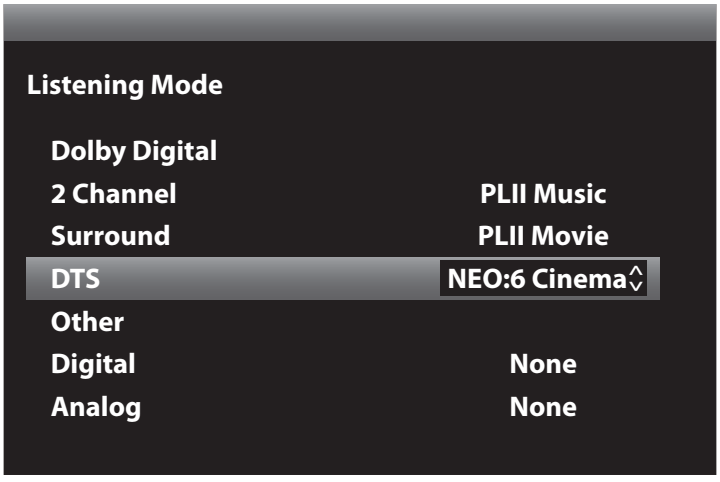


Diagram 106 *Listening Mode - DTS*

Other

These settings will apply preferences to un-encoded audio content from sources such as CD, Tuner, Tape Deck, iPod, stereo TV audio, etc.

Digital - This setting will have any un-encoded digital audio signal, input on the Coaxial or Optical Digital Inputs, output in the selected mode. This is excellent for enhancing digital stereo music sources and old TV shows if connected on a digital input. Typical 5.1 modes: DVS Reference, DVS Wide, Dolby PLII Movie, Dolby PLII Music, NEO:6 Music, NEO:6 Cinema, 5 Channel Stereo. Typical 7.1 modes: DVS Reference, DVS Wide, Dolby PLIIx Movie, Dolby PLIIx Music, NEO:6 Music, NEO:6 Cinema, 7 Channel Stereo. **Diagram 107**

Analog - This setting will have any un-encoded analog audio signal, input on the line level analog audio inputs, output in the selected mode. This is excellent for enhancing stereo music sources such as the internal Tuner, Tape Deck, and old TV shows if input on an analog input from cable or satellite. Typical 5.1 modes: Stereo, DVS Reference, DVS Wide, Dolby PLII Movie, Dolby PLII Music, NEO:6 Music, NEO:6 Cinema, 5 Channel Stereo. Typical 7.1 modes: Stereo, DVS Reference, DVS Wide, Dolby PLIIx Movie, Dolby PLIIx Music, NEO:6 Music, NEO:6 Cinema, 7 Channel Stereo. **Diagram 108**

To set Preferences:

1. With the OSD OFF **s**elect a source other than Tuner or iPod. Listening Modes are configured by source except Tuner and iPod, which have manual selection only. **Note: The Listening Mode screen will show the settings for the last source selected with the OSD OFF.**
2. Open the OSD and with Setup Menu selected, press ▶. Source Setup will highlight in the Setup List.
3. Press ▼ four times so Listening Mode Setup is highlighted in the Setup List. **Diagram 101**
4. Press ▶ . The Listening Mode Setup Menu will appear. Listening Mode will be highlighted. **Diagram 102**
5. Press ▶ . The Listening Mode screen will appear. 2 Channel will be highlighted. **Diagram 103**
6. To set a Preference, press ▶ . The 2 Channel window will become active. **Diagram 104**
7. Press ▲ ▼ to select a Dolby 2 Channel Mode Preference.
8. When finished, press ◀ so the 2 Channel Window is no longer active. The setting will save automatically.

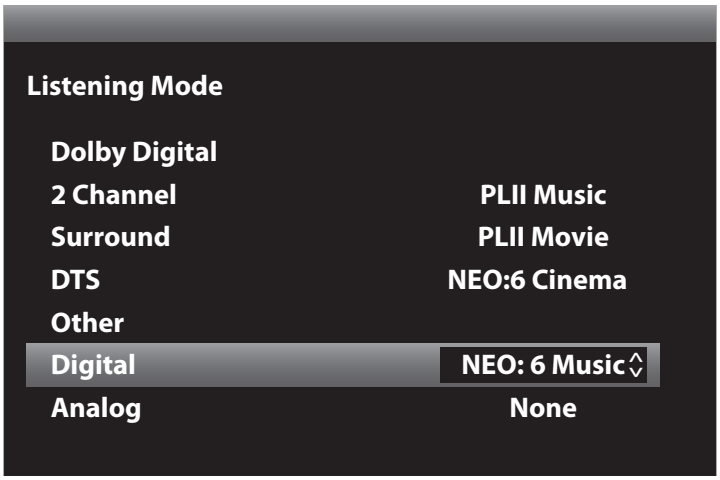


Diagram 107 *Listening Mode - Un-encoded Digital*

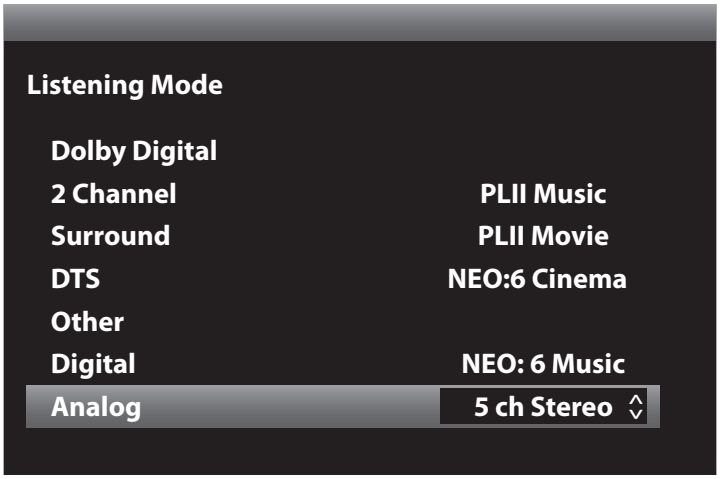


Diagram 108 *Listening Mode - Un-encoded Analog*

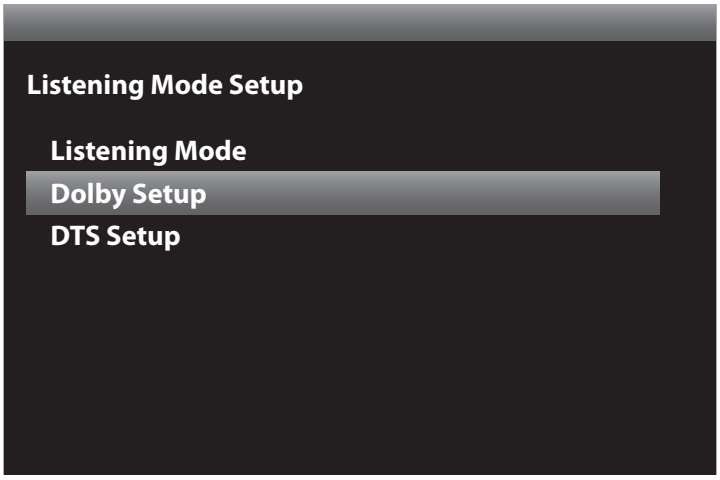


Diagram 109 *Listening Mode - Dolby Setup*

9. Press ▼ so the Surround line is highlighted. **Diagram 105**

10. Repeat **Steps 1-9** for all sources until all modes for all sources are set to the preferred Listening Modes. Press Menu to exit the OSD when finished.
Note: If a Listening Mode is selected using the Surround button on the M80 Front Panel or Remote while a source is selected, that mode will become the preference for that type of audio signal, for that source, and will appear on the line indicating the type of audio input signal being processed, for that source. The selection will remain in affect for any other like input (digital or analog) and encoding (Dolby/DTS), for that source, until changed. To retain preference selections, do not change Listening Modes using the Surround buttons. Tuner and iPod Listening Modes can only be selected by pressing the Surround button while the Tuner or iPod is the selected source.

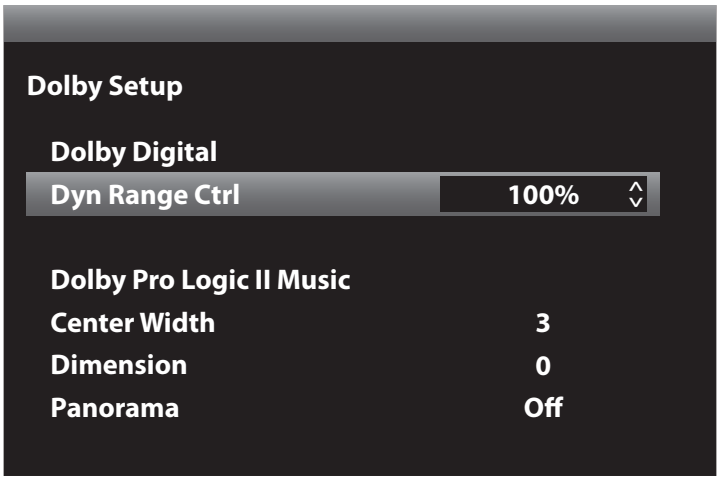


Diagram 110 *Dolby Digital Dynamic Range Control*

Dolby Setup
These settings allow fine tuning of Dolby Digital Dynamic Range and the Dolby Pro Logic II/IIx surround mix. They are set to Dolby reference at the factory and typically do not need to be adjusted, but can be changed to user preference or listening conditions.

Dolby Digital
Dynamic Range Control - This setting will constrain the overall dynamic range (the difference between the loudest and quietest levels in an audio mix) for Dolby Digital (all versions) and Dolby Stereo. There are a lot of variables in a surround audio mix. Sometimes lowering the volume, (late night listening), will cause some of the subtle nuances of the surround mix to drop to levels that adversely affect the surround effect. Adjusting the dynamic range helps maintain the relation of these variables and preserves the integrity of the surround mix - even at lower volume. Adjusting dynamic range can also be helpful for protecting speakers from particularly high transient levels from content with explosive or other loud sound effects. **Diagram 110**

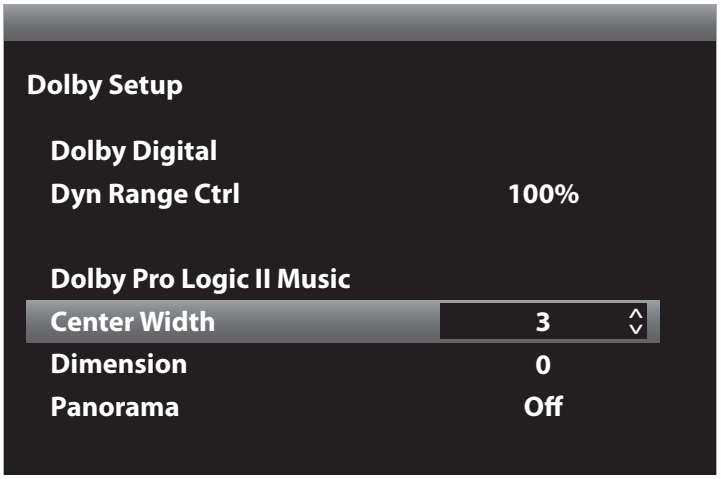


Diagram 111 *Dolby PLII Center Width*

Dolby Pro Logic II/IIx Music
These settings provide adjustment of three key elements in the Pro Logic Music Mode.

Center Width - This setting adjusts the balance of the main vocals in the Center and Front speakers. The Dolby default is 3. Setting a higher number will spread the vocals to the Front left/right speakers. Setting a lower number will 'focus' the vocals to a narrow pan in the center. **Diagram 111**

Dimension - This setting adjusts the front to rear balance of the surround effect. The Dolby default is 0. Setting a higher number will move the balance toward the front speakers. Setting a lower number will move the balance toward the rear. **Diagram 112**

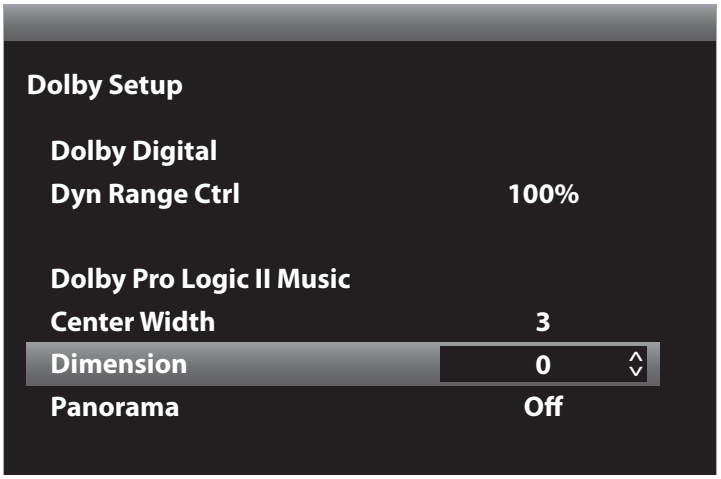


Diagram 112 *Dolby PLII Dimension*

Panorama - This setting creates a deeper or shallower surround soundfield. The Dolby default is Off. Setting Panorama to On, creates a more open, ambient mix, while the Off setting is a more dry mix. **Diagram 113**

DTS Setup

This setting allows adjustment of the Center Gain level in DTS NEO:6 Music mode.

DTS NEO:6 Music Center Gain - This setting will adjust the presence of vocals in a NEO:6 Music mix. NEO:6 Music is often applied to un-encoded content so there is no encoded reference to center and surround channel levels. Different two channel (stereo) mixes will create varying results when processed with NEO:6 Music. The DTS default is 0.2. Setting a higher number will increase the center channel level and typically bring vocals up in the mix. As a result, the surround mix will appear to move toward the front and sound a little more dry. Setting a lower number will decrease the center channel level and typically reduce the 'focus' of the vocals. As a result, the surround mix will appear to move toward the rear and sound more open and ambient. **Diagram 115**

To adjust Dolby and DTS Setups:

1. With the OSD open, and Setup Menu selected, press ▶. Source Setup will highlight in the Setup List.
2. Press ▼ four times so Listening Mode Setup is highlighted in the Setup List. **Diagram 101**
3. Press ▶ . The Listening Mode Setup Menu will appear. Listening Mode will be highlighted. **Diagram 102**
4. Press ▼ . Dolby Setup will be highlighted. **Diagram 109**
5. Press ▶ . The Dolby Setup Menu will appear. Dynamic Range Control will be highlighted.

Dolby Digital Dynamic Range

6. Press ▶ . The Dynamic Range Control Window will become active. **Diagram 110**
7. Press ▲ ▼ to select a Dynamic Range setting in 25% compression increments.
8. When finished, press ◀ so the Dynamic Range Control Window is no longer active.

Dolby Pro Logic II/IIx Music

9. Press ▼ so the Center Width line is highlighted. **Diagram 111** Repeat **Steps 6-8** above for Center Width, Dimension and Panorama. Press Menu to exit the OSD when finished.

DTS NEO:6 Music

10. Follow **Steps 4-8** above selecting DTS Setup in **Step 4 (Diagram 114)**, and adjusting Center Gain in **Steps 5-8 (Diagram 115)**. Press Menu to exit the OSD when finished.

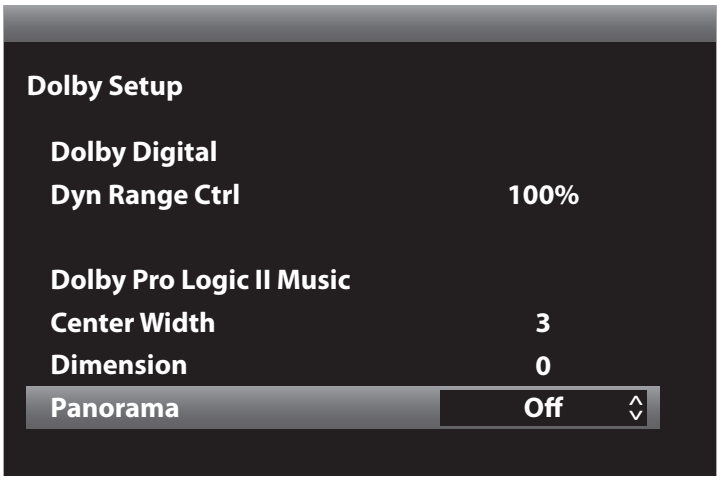


Diagram 113 *Dolby PLII Panorama*

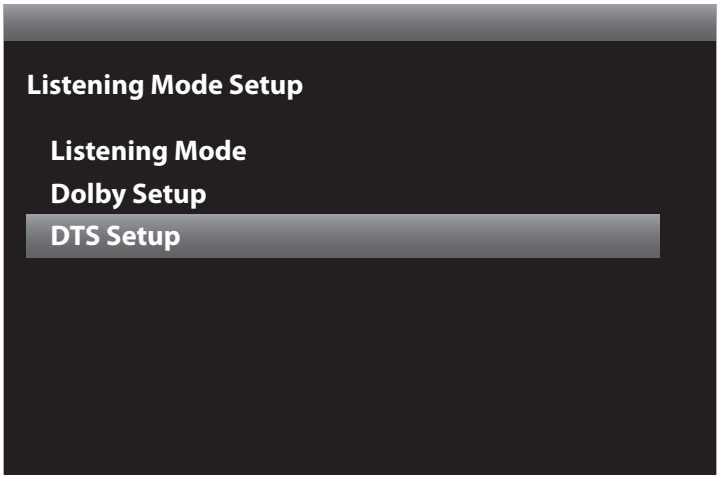


Diagram 114 *Listening Mode - DTS Setup*

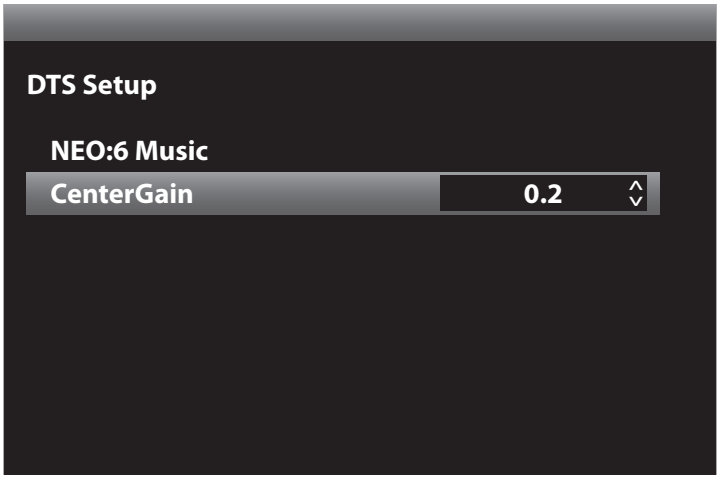


Diagram 115 *DTS NEO:6 Music Center Gain*

LISTENING MODE DESCRIPTIONS

LISTENING MODE	DESCRIPTION
DOLBY	
Dolby TrueHD	Dolby TrueHD is a lossless compression technology, developed for high-definiton disc media. The sound is bit-for-bit identical to what was captured during the recording and mastering process. Available on Blu-ray Disc connected via HDMI v1.3. Provides 'Producer Mix' in any channel configuration from 2.0 to 7.1. Displayed as: Dolby TrueHD.
Dolby Digital Plus	Dolby Digital Plus coding efficiency allows mixing secondary audio tracks such as Director's Commentary with the multichannel main soundtrack or including multiple language track options with better than DVD-quality surround sound within the storage capacity of Blu-ray Discs. Supports up to 7.1 channels on Blu-ray Disc. There is no loss of information when a 7.1 mix is played back in a 5.1 configuration. Also used in BD-Live, BonusView playback, IPTV, streamed and downloaded media. Displayed as: Dolby Digital +.
Dolby Digital EX	Dolby Digital EX provides an additional surround channel (mono) that is played through the rear speakers in a 7.1 speaker configuration on DVD titles that were originally produced as films with Dolby Digital Surround EX. There is no loss of information when played back in a 5.1 configuration. Available on Blu-ray Disc, DVD-Video Disc, Digital Satellite, Cable and TV broadcast. Displayed as: Dolby Digital EX
Dolby Digital	Dolby Digital is the multichannel audio standard for DVD-Video, North American HDTV and digital cable broadcast and DBS systems. Provides up to 5.1 channels of surround audio. Displayed as: Dolby Digital
Dolby Pro Logic IIx Movie Music Game	Dolby Pro Logic IIx can expand any stereo or 5.1 audio source into a 7.1 channel playback. The three listening modes: Movie, Music and Game allow the audio to be tailored for the differences of the content. Game mode will send special effects signals to the surround channels for a more full and dramatic impact. Music mode provides three additional user controls, Center Width, Panorama and Dimension for customizing the surround mix. Available in 7.1 configuration for any stereo or 5.1 audio source. Displayed as: PLIIx Movie/Music/Game
Dolby Pro Logic II Movie Music	Dolby Pro Logic II can covert any quality stereo audio source into a full-range 5 channel presentation. (The M80 will create a subwoofer channel based upon the speaker crossover settings but is not a '.1' LFE channel.) Pro Logic II is also compatible with older video tapes that were encoded in four channel Dolby Surround. The two listening modes: Movie and Music allow the audio to be tailored for the differences of the content. Music mode provides three additional user controls, Center Width, Panorama and Dimension for customizing the surround mix. Available in 5.1 configuration for any stereo audio source. Displayed as: PLII Movie/Music
Dolby Virtual Speaker Reference Wide	Dolby Virtual Speaker simulates a 5.1 speaker surround sound listening environment from two speakers. Reference mode creates a 'virtual' five speaker surround sound from two speakers with the apparent width defined by the distance of the two speakers. Wide mode creates a more spacious front image when the speakers are close together. Dolby Virtual Speaker enhances the playback of any program material from 5.1 encoded content to stereo audio sources such as CDs and MP3 files. Displayed as: DVS Reference/Wide
Dolby Headphone	Dolby Headphone simulates 5.1 channel surround effects in any set of stereo headphones. Displayed as: Dolby H/P
Stereo Downmix	Stereo Downmix is a 2 channel output of Dolby Digital multichannel encoded content. This allows some Dolby multichannel content to be played trough two speakers in a 'Producer Mix' without loosing any of the voice, soundtrack or ambient sound characteristics when the M80 is setup in a 7.1 configuration. Displayed as: Dolby Stereo.

LISTENING MODE	DESCRIPTION
DTS	
DTS HD Master Audio	DTS HD Master Audio is a lossless variable bit rate audio encoding technology that matches bit-to-bit the original studio master soundtrack. Available on Blu-ray Disc connected via HDMI v1.3. Provides 'Producer Mix' in any channel configuration from 2.0 to 7.1. Displayed as: DTS-HD MSTR
DTS HD High Resolution Audio	DTS-HD High Resolution Audio compression technology allows high definition audio encoding/decoding on Blu-ray Discs when there is insufficient disc space for DTS-HD Master Audio. DTS-HD High Resolution Audio can provide up to 7.1 channels of better-than-DVD quality multichannel audio.
DTS ES Discrete 6.1 Matrix 6.1	DTS ES (Extended Surround) can decode content encoded as DTS 6.1 Discrete, DTS 6.1 Matrix and DTS 5.1. In a 7.1 configuration, DTS 6.1 Discrete provides a discrete rear surround channel creating a more realistic front to back and side to side sound environment from DTS 6.1 Discrete encoded content. In a 7.1 configuration DTS 6.1 Matrix synthesizes a rear surround channel from DTS 5.1 surround encoded content. In a 5.1 configuration the DTS 6.1 Discrete channel will be matrixed to the 5.1 surround speakers. Typically available on DVD formats. Displayed as: DTS ES
DTS NEO:6 Cinema Music DTS +NEO:6 Music	DTS NEO:6 synthesizes 2-channel (stereo) audio into six full bandwidth matrix channels in a 7.1 configuration, and five full bandwidth matrix channels in a 5.1 configuration. DTS NEO:6 will create a center rear channel from 5.1 encoded content that is played through the rear speakers in a 7.1 configuration. (The M80 will create a subwoofer channel based upon the speaker crossover settings but is not a '.1' LFE channel.) Cinema mode is optimized for movie soundtrack and Music is optimized for music playback. Displayed as: NEO:6 Cinema/Music In a 7.1 configuration, DTS+NEO:6 Music converts DTS 5.1 encoded content into a 7.1 presentation utilizing the NEO:6 Music optimization. Displayed as: DTS+NEO:6 Music
Stereo Downmix	Stereo Downmix is a 2 channel output of DTS multichannel encoded content. This allows some DTS multichannel content to be played trough two speakers in a 'Producer Mix' without loosing any of the voice, soundtrack or ambient sound characteristics when the M80 is setup in a 7.1 configuration. Displayed as: DTS Stereo.
OTHER MODES	
Multi-Channel PCM	Multi-Channel PCM is uncompressed, decoded multi-channel digital audio. Many Blu-ray, DVD-Video and other digital media players have on-board audio decoding capability with two or three selectable digital audio output modes. When the decoded audio soundtrack is decoded by the player, and the decoded audio is selected as the output, (PCM) the player will output the decoded multi-channel audio as a PCM bitstream. Since the audio is already decoded, the 'native' Dolby and DTS Listening Modes will not be selectable on the M80, but some Listening Mode options will be available. Displayed as: Multi-ch PCM
7 Channel Stereo	7 Channel Stereo places a stereo audio signal left channel in the front, surround and rear left speakers and places the right channel in the front, surround and rear right speakers. The center channel is fed a summed mono mix of the in-phase content from the right and left channels. Available for un-encoded stereo audio content. Displayed as: 7ch Stereo
5 Channel Stereo	5 Channel Stereo places a stereo audio signal left channel in the front and surround left speakers and places the right channel in the front and surround right speakers. The center channel is fed a summed mono mix of the in-phase content from the right and left channels. Available for un-encoded stereo audio content. Displayed as: 5ch stereo
Stereo	Stereo is two channel audio played through the front left and right speakers. Available for any un-encoded analog or digital stereo audio signal. Displayed as: Stereo
Analog Bypass	Analog Bypass passes line level analog audio signals directly to the volume control and amplifier, bypassing Listening Mode processing. Available for any analog line level audio from the Audio Inputs, the internal Tuner and the 7.1 channel analog Multi-Input. Displayed as: Analog Bypass

DSP Options

When audio and video signals are input to the M80 they each get processed in different sections of the M80 by different processors. The amount of time it takes to process the audio and video signals isn't always the same. Additionally, the video signal typically goes through some additional processing at the Video Display. This can cause the audio and video to be out of sync.

Lip Sync Delay

The Lip Sync setting compensates for the difference between the time the video image is displayed and the audio outputs from the speakers. Since the video typically trails the audio, Lip Sync allows up to a 120ms (0.12 seconds) delay on the audio output to the speakers. Lip Sync delays all speakers an equal amount so the delay (distance) settings configured in SmartEQ are not changed.

1. Press the Menu Button on the M80 Front Panel or M80 Remote. The OSD will appear on the Video Display.
2. Press ▼ so DSP Options is highlighted in the OSD Menu. **Diagram 116**
3. Press ▶ . The Lip Sync Delay line will be highlighted. **Diagram 117**
4. Press ▶ . The Lip Sync Delay Window become active. **Diagram 118**
5. Press ▲ ▼ to set Delay. (Adjust until the audio and video on the video display are in sync. Voice (audio) and lip movement (video) are good indicators.
6. Press ◀ so the Lip Sync Delay Window is no longer active. The setting will save automatically.

10. Press ◀ to return to the OSD Menu.
11. Press ◀ or Menu to exit the OSD.

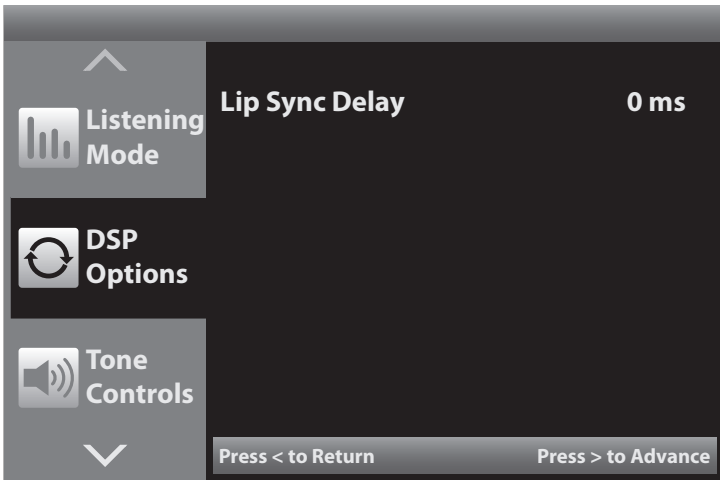


Diagram 116 *OSD DSP Options - Lip Sync*

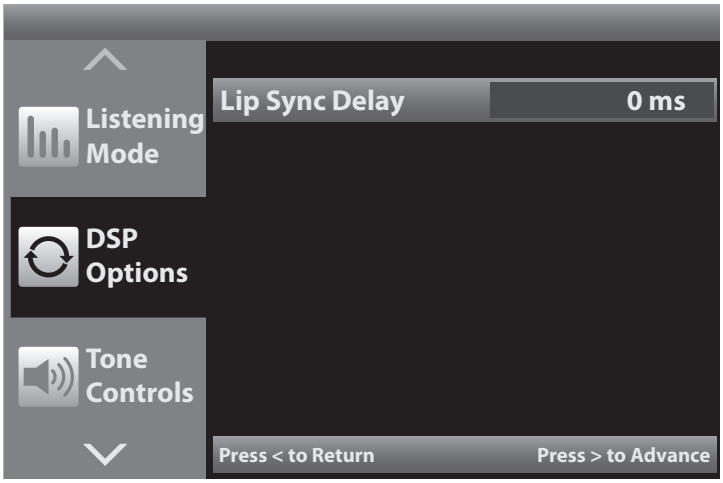


Diagram 117 *OSD DSP Options - Lip Sync Highlight*

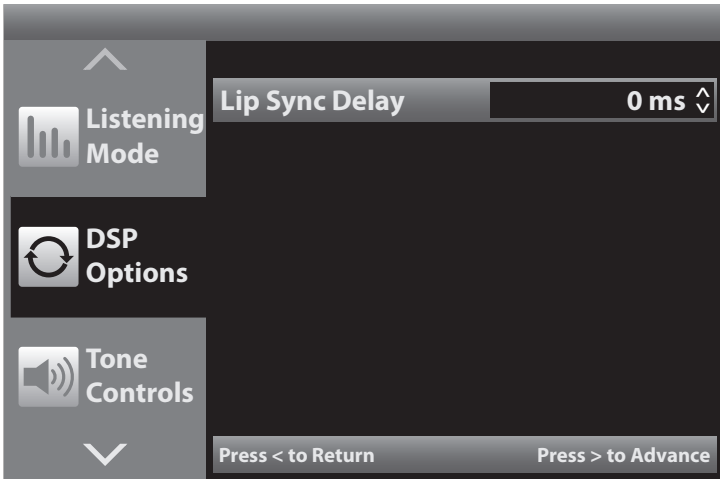


Diagram 118 *OSD DSP Options - Lip Sync Select*

Video Setup

These settings will configure the video output from the M80 to the Main Room Video Display. Video Format sets the M80 video output resolution and Picture Setup sets the brightness, contrast, color and filters. **Diagram 119**

See section: **Video Setup** starting on **Page 58** for complete Video Setup Instructions.

Information Screen

The Information screen provides a snapshot summary of M80 settings for the currently selected source. This is a good place to start if a source does not appear to be performing properly. All current settings for connections, signal inputs and outputs, Listening Mode and Volume will be displayed. **Diagram 120**

1. To activate the Information Screen, press the INFO button on the M80 Remote. The Info screen will appear. This is a non-interactive screen. No settings can be changed in this screen.

2. To close the Information Screen, press the INFO button again or press Menu to directly open the OSD.

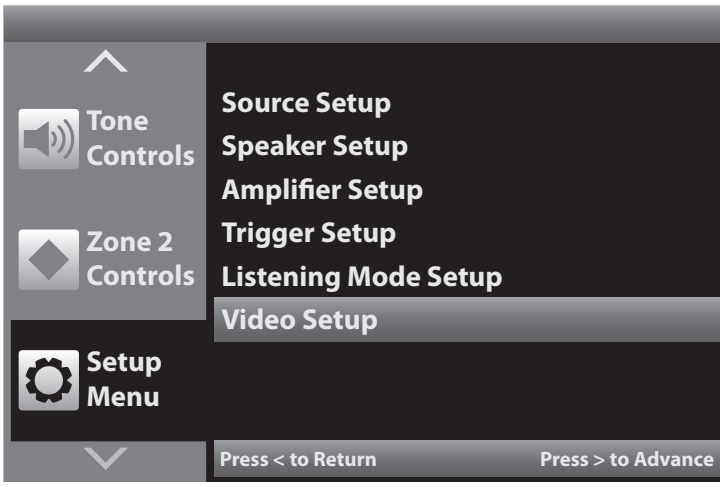


Diagram 119 *Setup Menu - Video Setup*

Analog Audio Input - Indicates the Analog Audio Input for the selected source as configured in Source Setup.

Digital Audio Input - Indicates the Digital Audio Input for the selected source as configured in Source Setup.

Video Input - Indicates the Video Input for the selected source as configured in Source Setup.

Speaker Setup - Indicates the channel configuration of the audio input signal for the selected source. In **Diagram 120**, the first number (3) indicates the Front Speakers (left, center, right). The second number (2) indicates the Surround Speakers (surround left, right). The '.1' indicates an LFE Subwoofer channel. This indicates a 5.1 audio signal. As another example, 2/0.0 would indicate stereo.

Resolution - Indicates the current Resolution to Display output. If the setting is set to Auto, Resolution will show the actual output resolution.

Input Audio Format - Indicates the Audio format of the incoming audio signal. This is a good place to look when selecting Listening Modes. The Input Audio Format has a direct affect on which Listening Modes are available.

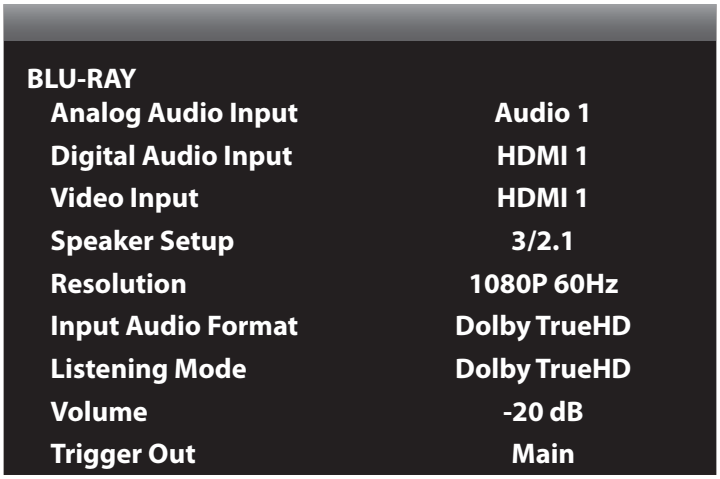


Diagram 120 *Info Screen*

Listening Mode - Indicates the currently selected Listening Mode.

Volume - Indicates the current Volume setting.

Trigger Out - Indicates the system Trigger Out setting.

Note: The Information Screen cannot be opened while Tuner or iPod is the selected source.

Reset

To reset the M80 to factory defaults, with FM Tuner selected, press and hold the Surround button on the M80 Front Panel for five seconds. **This will delete any user programmed settings including Tuner Presets, Speaker Settings and Listening Mode preferences.**

Firmware Version

To view the M80 firmware version, with AM Tuner selected, press and hold the Surround button on the M80 Front Panel for five seconds. The firmware version will appear on the Front Panel Display for five seconds.

MULTIZONE CONFIGURATION

ADDING A 2ND ZONE

In addition to being a highly evolved Home Theater A/V Surround Receiver, the M80 can also be used as a two-zone A/V System Controller. This allows the M80 to feed audio and video to the Home Theater (Main Room) and simultaneously or independently distribute audio and video to a second room (Zone 2). The source in Zone 2 can be the same source that is playing in the Main Room or it can be a different source. Zone 2 is controlled with the M80 Zone 2 Remote Control via the M80 Front Panel IR Sensor, an optional multizone IR control system that connects to the M80 Rear Panel or the Zone 2 OSD that get displayed on the Main Room Video Display. The speakers for Zone 2 can be connected to the Surround Back speaker terminals on the M80 **(Diagram 121)** or can be driven by a dedicated audio amplifier connected to the Zone 2 OUT or Zone 2 PRE-OUT jacks on the M80 Rear Panel. The Video Display for Zone 2 is fed from either the Zone 2 Composite or S-Video jacks on the M80 Rear Panel.

Note 1: All sources that are going to be played in Zone 2 must include analog line level audio and either composite or S-Video connections to the M80 Source Inputs. Digital audio inputs are not down-converted to analog audio or made available to the Zone 2 audio outputs. HDMI does not get down-converted and is not available to the Zone 2 outputs. The analog audio and composite or S-Video connections must be selected in the Source Setup as inputs for any source to be played in Zone 2.

Note 2: Unless using an external amplifier for Zone 2 audio, the Surround Back speakers must be configured for Zone 2 in the OSD Menu under: **Setup Menu/Amplifier Setup**.

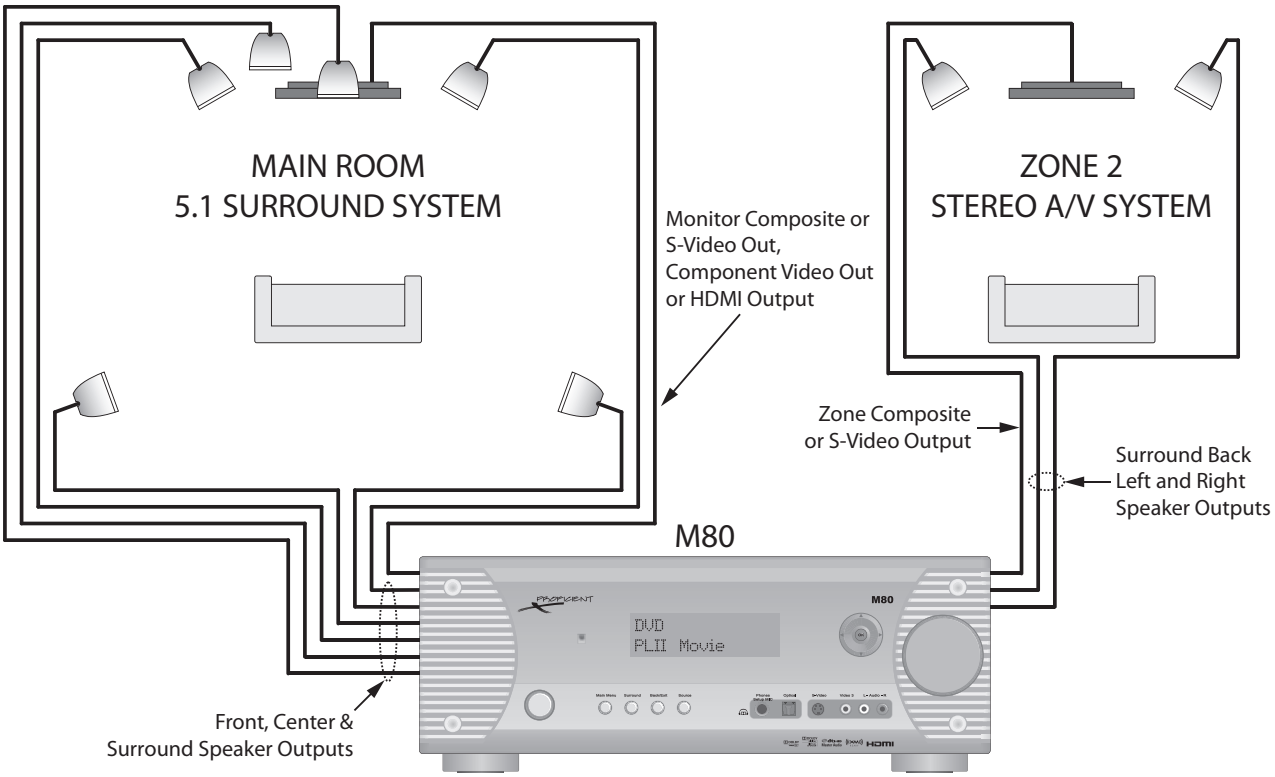


Diagram 121 *Typical 2 Zone Application*

Zone 2 Wiring

The Zone 2 application described in this section, requires that one pair of speaker wires be run from the M80 location to each speaker in Zone 2. An appropriate shielded video cable (RG6) for composite video or S-Video cable for S-Video will also need to be run from the M80 to the Zone 2 Video Display location, if video is being fed to Zone 2. Pull 22AWG/2 pair shielded audio cable for line level audio from the M80 to the Zone 2 Video Display if external speakers are not practical or desirable in Zone 2.
Note: If feeding composite and S-Video connected sources to Zone 2, pull RG6 and S-Video cable. The M80 does not convert composite source inputs to Zone 2 S-Video OUT or S-Video source inputs to Zone 2 composite video OUT.

In new construction, the wires should be pulled before the drywall is installed. In retro-fit applications, (existing construction) the wires will need to be pulled through the walls and holes will need to be cut in the drywall for termination and connection. (If using inwall or inceiling speakers, holes will need to be cut in the drywall for the speakers as well.) It is highly recommended that an audio/video installation professional be hired to do this type of work. Contact the retailer that the M80 was purchased from for information on professional installation.

Speaker Wire Requirement

1. Pull 1 run of 16AWG (min) 4-conductor stranded speaker wire directly from the M80 location to each Zone 2 speaker. Leave extra length (24 inches) on both ends to work with when making connections. Use the following Chart to determine the proper wire gauge based on actual wire length from the M80 to the Zone 2 speakers:

SPEAKER WIRE LENGTH	SPEAKER WIRE GAUGE
150' (46m)	16 AWG
400' (122m)	14 AWG
1000' (305m)	12 AWG

Video Cable Requirements

Composite Video

1. Pull 1 run of RG6 directly from the M80 location to the Zone 2 Video Display location. Leave extra length (24 inches) on both ends to work with when making connections. Terminate with RCA plugs on both ends.

S-Video

1. Pull 1 run of S-Video cable directly from the M80 location to the Zone 2 Video Display location. Leave extra length (24 inches) on both ends to work with when making connections. Terminate with S-Video plugs on both ends.

Line Level Audio Cable Requirements

1. Pull 1 run of 22AWG/2 pair shielded cable up to 50 feet from the M80 location to the Zone 2 Video Display location. Leave extra length (24 inches) on both ends to work with when making connections. Terminate with RCA plugs on both ends.

Note : It is not necessary to connect line level audio to the Video Display if amplified audio is being fed to Zone 2 via the M80 Surround Back speakers or an external amplifier.

IR Control Wire Requirements

1. Pull 1 run of 24AWG (min) 4-conductor un-shielded solid or stranded copper wire up to 1200 feet from the M80 location to where the IR receiver will be connected in Zone 2.

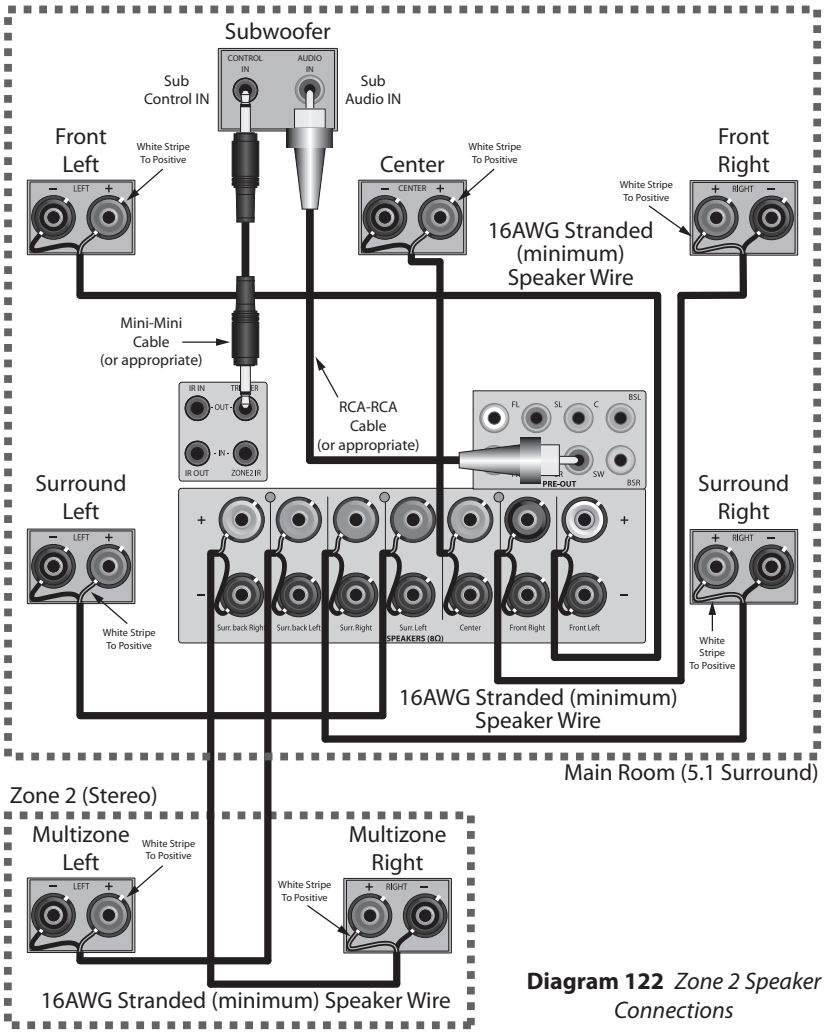


Diagram 122 *Zone 2 Speaker Connections*

ZONE 2 SPEAKER CONNECTIONS

Diagram 122 shows a typical application for connecting a stereo pair of speakers in Zone 2 to the M80 with a 5.1 Surround configuration in the Main Room. For other Main Room speaker configurations, see **Diagram 7, Page 24**.

Note: Do not connect more than one 4Ω or 8Ω speaker directly to any Speaker Terminal pair (+/-) at the same time. This will cause the M80 to shut down and can damage the unit. This type of damage is not covered by the Warranty.

Speaker Connections

Connect speakers as described in section: **Speaker Connections** on **Page 25**.

Zone 2 Subwoofer

A subwoofer can be connected to Zone 2 by using a subwoofer with an integrated crossover network and stereo speaker connections. Connect the Surround Back Left and Right Speaker Terminals on the M80 to the Left and Right Speaker Level INs on the sub. Connect the Zone 2 Left and Right Speakers to the sub Left and Right Speaker OUT Terminals.

Note: The subwoofer connections shown in **Diagram 122** only apply to the Main Room configuration.

MULTIZONE CONFIGURATION

ZONE 2 TV/VIDEO DISPLAY CONNECTIONS

If using a TV or Video Display in Zone 2, connect it to the ZONE 2 Composite or S-Video OUT on the M80 Rear Panel as shown in **Diagram 123**. Connect both, if appropriate. **Note:** All A/V sources must be connected to the M80 via composite or S-Video for output to Zone 2. A source connected with composite video will only output through the Zone 2 Composite OUT. A source connected with S-Video will only output through the Zone 2 S-Video OUT. The composite or S-Video input must be selected as the Video Input in Source Setup, for that source to feed video to Zone 2. **This will also become the video input for the Main Room.**

Composite Video

1. Using RG6 cable terminated with RCA plugs, connect the ZONE 2 Composite Video OUT on the M80 to an appropriate Composite Video Input on the Zone 2 Video Display as shown in **Diagram 123**.

S-Video

1. Using S-Video cable terminated with S-Video plugs, connect the ZONE 2 S-Video OUT on the M80 to an appropriate S-Video Input on the Video Display as shown in **Diagram 123**.

Line Level Audio (Option)

1. Using shielded audio cable terminated with RCA plugs, connect the ZONE 2 OUT or PRE-OUT on the M80 to appropriate line level audio Inputs on the Zone 2 Video Display as shown in **Diagram 123**.

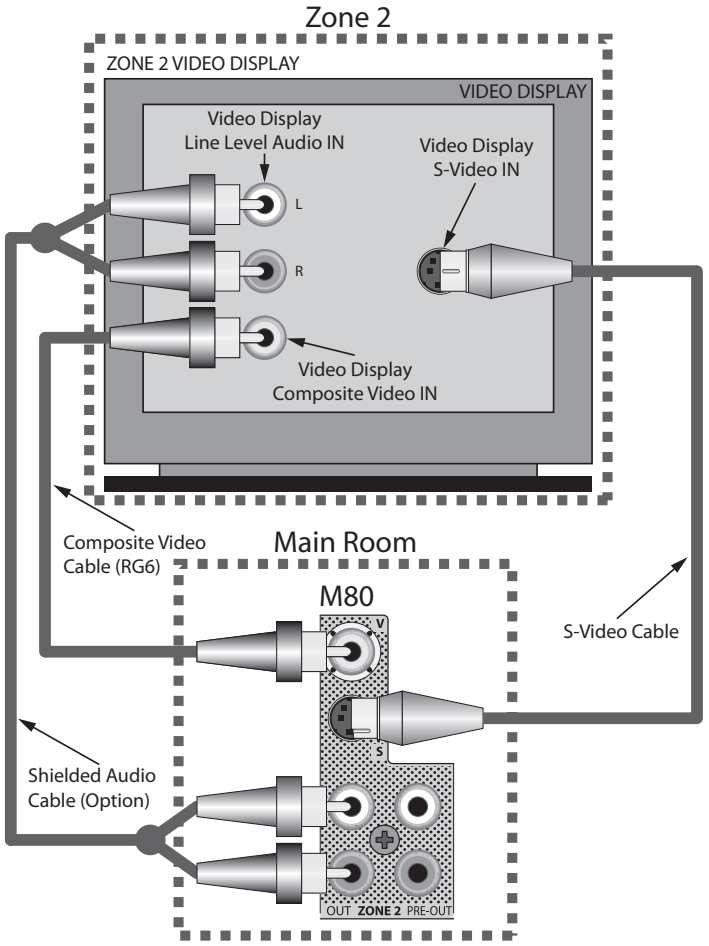


Diagram 123 *Zone 2 TV/Video Display Connections*

ZONE 2 IR CONTROL CONNECTIONS

The Flasher Output of an IR control system can be connected to IR IN 1 or IR IN 2 on the M80 Rear Panel. This allows the M80 to be controlled from Zone 2 using the Zone 2 Remote Control.

Diagram 124 shows an application where IR IN 2 is connected to a Proficient IR Control System. These connections allow remote control of Zone 2 ON/OFF, source selection, volume, mute and Tuner Preset selection.

The M80 Zone 2 Remote controls the M80 Zone 2 functions. It may be desirable to teach the Zone 2 IR commands to a universal learning remote that will be able to control the Zone 2 functions, Zone 2 Video Display and source components connected to the M80.

1. Using a mono mini-mini cable, connect the Flasher OUT on a Proficient IR Router to the IR IN 1 or 2 jack on the M80 Rear Panel.

2. See section: **IR IN/OUT Connections** on **Page 38** for connection instructions for controlling the source components.

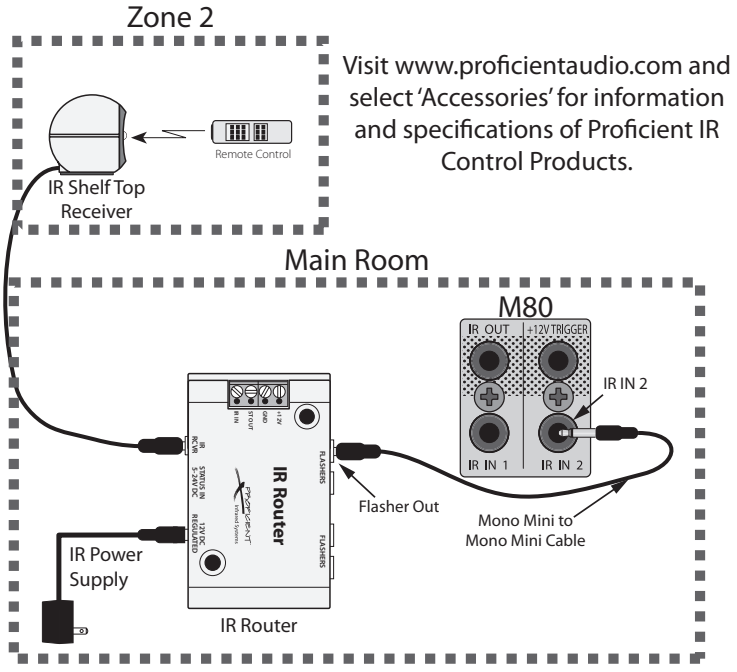


Diagram 124 *Zone 2 IR Control Connections*

ZONE 2 AS A SINGLE ROOM WITH HIGH POWER AMPLIFIER

Diagram 125 shows the M80 Zone 2 PRE-OUT connected to the line level in on a Proficient M2 125 Watts per channel stereo amplifier. This configuration provides high power audio for a large room or patio area with volume controlled using the M80 Zone 2 Remote. Using an external amplifier for Zone 2 audio will allow the Main Room to be configured as a 5.1 or 7.1 Surround system.

Please refer to the **M2 Installation & User Guide** for complete specifications and connection instructions.

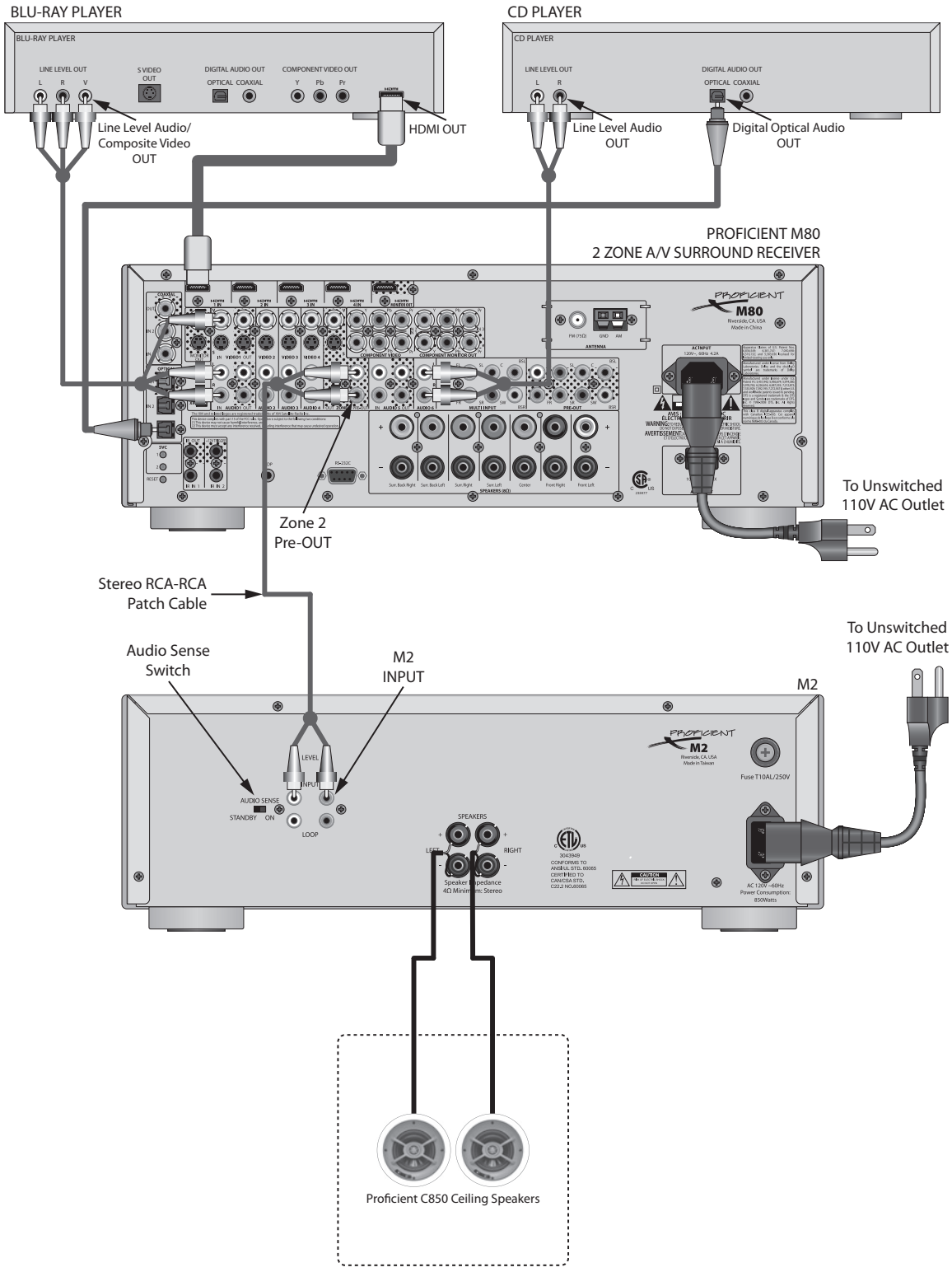


Diagram 125 *Zone 2 - Single Room High Power Audio System*

MULTIZONE CONFIGURATION

ZONE 2 AS MULTIPLE ROOMS WITH 8-CHANNEL POWER AMPLIFIER

Diagram 126 shows the M80 Zone 2 OUT connected to the BUS IN in on a Proficient M8 35 Watts X 8 channel amplifier. This configuration adds four rooms to the Zone 2 OUT with volume controlled in the individual rooms with Proficient VCS60 Volume Controls. Using an external amplifier for Zone 2 audio will allow the Main Room to be configured as a 5.1 or 7.1 Surround system.

Please refer to the **M8 Installation & User Guide** for complete specifications and connection instructions.

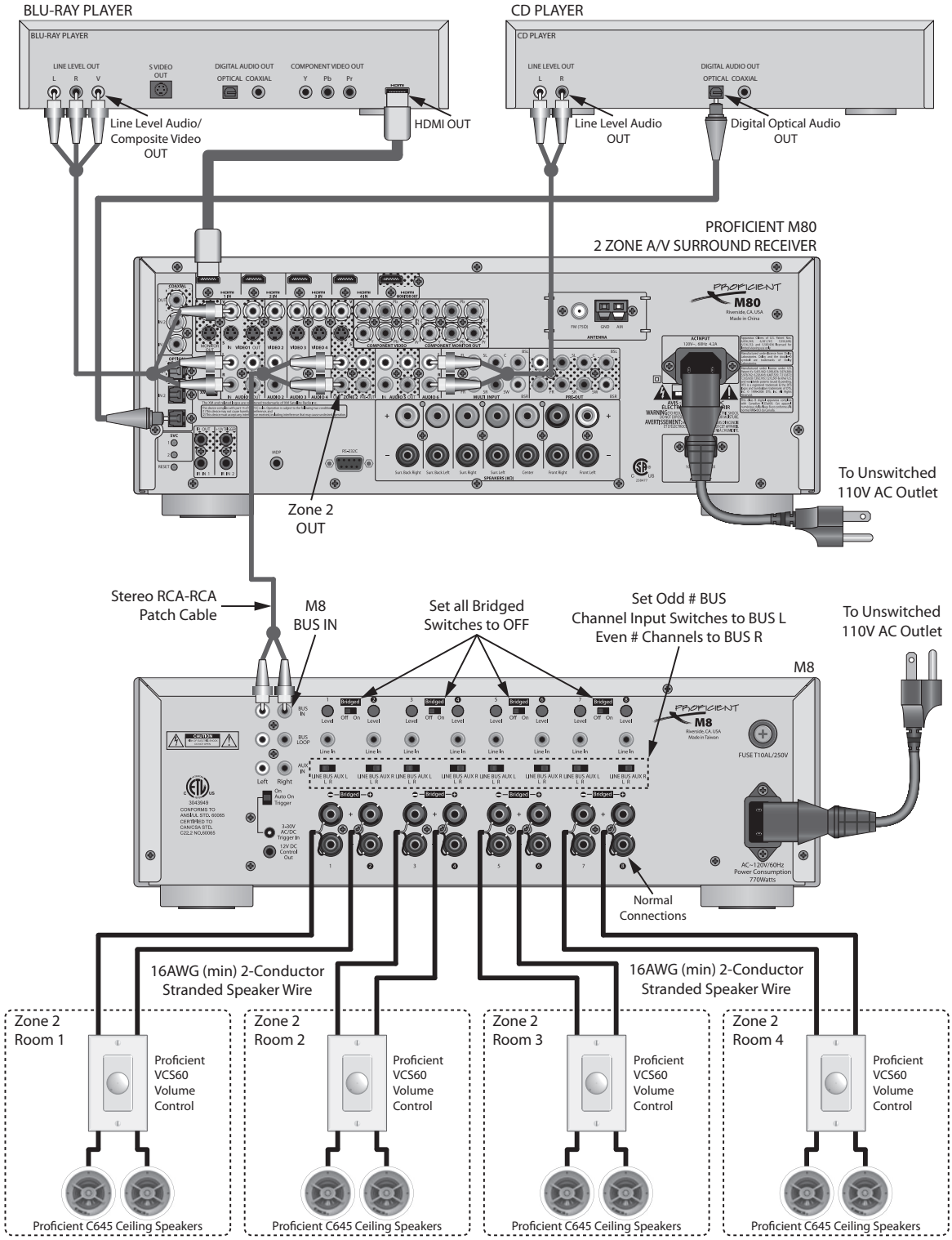


Diagram 126 *Zone 2 Multiroom Audio System*

Amplifier Setup

This setting configures the M80 Surround Back Left and Right Speaker Terminals for use as the Zone 2 Speaker Terminals in a multizone configuration.

Note: If using the internal amp for Zone 2 audio, the Main Room will be limited to a 5.1 Surround configuration.

1. With the OSD open, and Setup Menu selected, press ▶. Source Setup will highlight in the Setup List.
2. Press ▼ twice so Amplifier Setup is highlighted in the Setup List. **Diagram 127**
3. Press ▶ . The Amplifier Setup Screen will appear. Back Amp will be highlighted.
4. Press ▶ . The Back Amp Window will become active.
5. Press ▲ ▼ to select Zone 2. **Diagram 128**
6. When finished, press ◀ so the Back Amp Window is no longer active. The setting will save automatically.
7. If continuing in Setup Menu, press ◀ to return to the Setup Menu and proceed to the next section.
8. To exit the OSD press Menu.

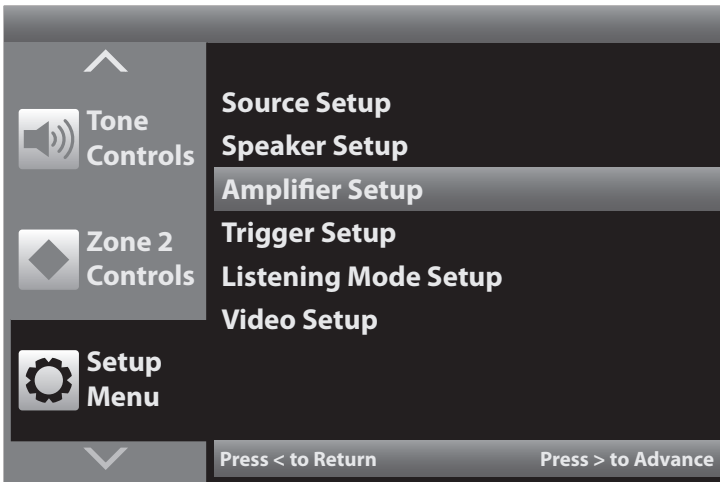


Diagram 127 *Setup Menu - Amplifier Setup*

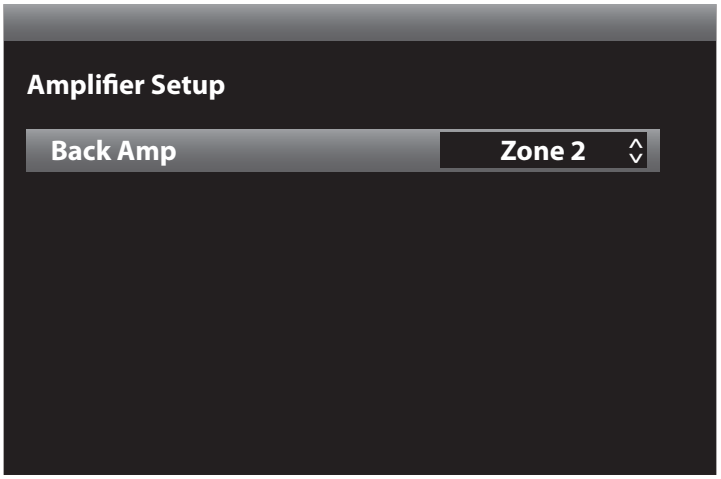


Diagram 128 *Amplifier Setup - Zone 2*

Zone 2 Audio Option

In some cases it may not be desirable or practical to have external speakers in Zone 2. The M80 Zone 2 PRE-OUT or Zone 2 OUT can be connected to the line level audio inputs on the Zone 2 Video Display to have Zone 2 audio output through the Zone 2 Video Display speakers. Using the Zone 2 PRE-OUT will allow volume to be controlled using the M80 Zone 2 Remote. Using the Zone 2 OUT will allow volume to be controlled using the Video Display remote. If using the Zone 2 Audio Option, it is not necessary to set the Back Amp to Zone 2.

Note: The Main Room can be configured as a 7.1 Surround system when the Zone 2 OUT or PRE-OUT is used to feed line level audio to either the Zone 2 Video Display or an external amplifier. (The Surround Back speakers are not being used for Zone 2 audio.)

Zone 2 Controls

These settings allow control of Zone 2 power state, (ON/OFF), Source and Volume Control Configuration from the OSD in the Main Room. Power, Source and Volume can also be controlled with the Zone 2 Remote. The Volume Control Configuration (fixed/variable output) must be set in the OSD. Zone 2 must be ON to set the Volume Control Configuration.

Power

Zone 2 will default to OFF. Zone 2 Power must be turned ON to make any changes to the Zone 2 Configuration. Be sure to have set the Back Amp to Zone 2 prior to turning Zone 2 ON (unless using the Zone 2 Audio Option).

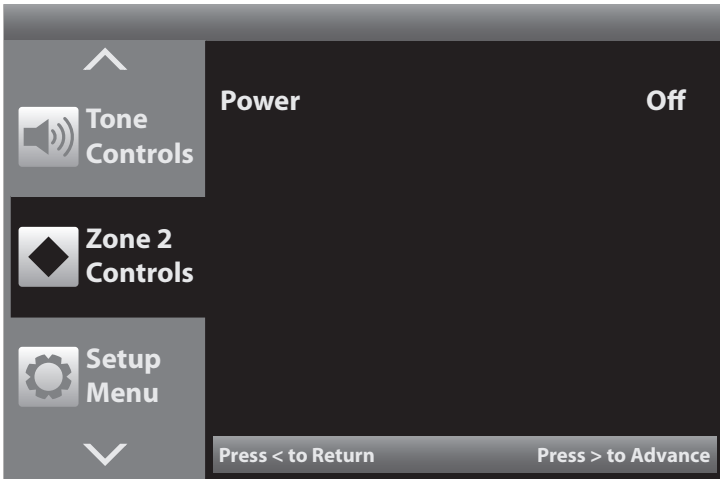


Diagram 129 *OSD - Zone 2 Controls*

MULTIZONE CONFIGURATION

1. With the OSD open, and Zone 2 Controls selected, the default Zone 2 Status Screen will be shown in the OSD. **Diagram 129**

2. Press ▶ . The Power line will be highlighted. **Diagram 130**

3. Press ▶ . The Power Window will become active. **Diagram 131**

4. Press ▲ ▼ to turn Zone 2 ON. The Source and Volume Settings will appear. **Diagram 132**

5. When finished, press ◀ so the Power Window is no longer active. The setting will save automatically.

6. To return to the OSD Menu, press ◀.

7. To exit the OSD press Menu.

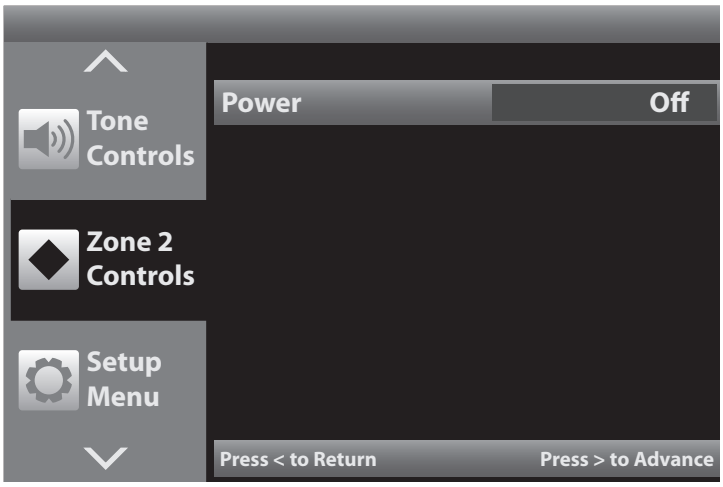


Diagram 130 *OSD - Zone 2 Off*

Source

The Zone 2 Source can be selected from the OSD. This is convenient for setting a whole-house music mode from the Main Room if Zone 2 has been set up as a multiroom zone.

1. With the OSD open, and Zone 2 Controls selected, press ▶. Power will highlight in the Setup List.

2. Press ▼ so Source is highlighted in the Setup List.

4. Press ▶ . The Source Window will become active.

5. Press ▲ ▼ to select a source for Zone 2. **Diagram 133**
   Note: Sources must be connected with and configured for line level audio and either composite or S-Video to play in Zone 2. Be sure to select the analog audio input in Source Setup for any source that is to be played in Zone 2. Also be sure to set the Video Input to composite or S-Video in the Source Setup for any source that is to output video in Zone 2. **This setting will also change the Video Input to the Main Room to composite or S-Video.**

6. When finished, press ◀ so the Source Window is no longer active. The setting will save automatically.

7. To return to the OSD Menu, press ◀.

8. To exit the OSD press Menu.

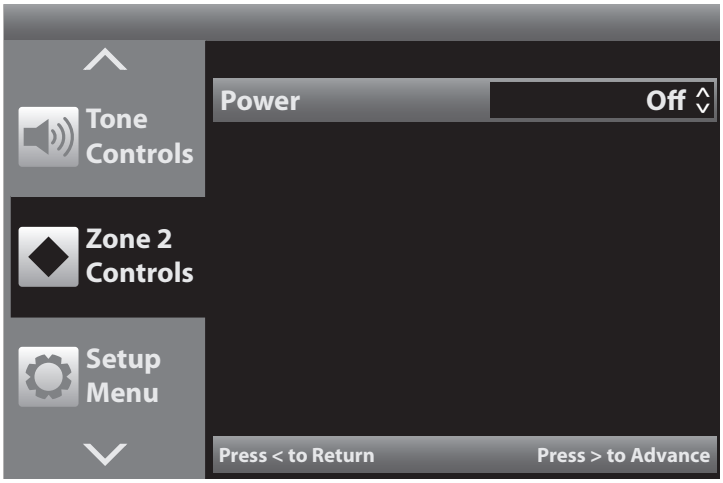


Diagram 131 *OSD - Zone 2 On/Off*

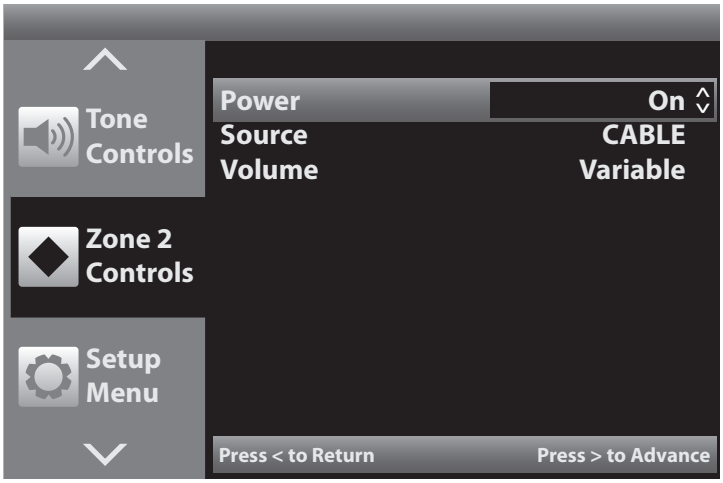


Diagram 132 *OSD - Zone 2 On*

Volume

The Zone 2 Volume control default is Variable. This will allow Zone 2 Volume Control using the Zone 2 Remote. The Variable setting affects the Surr. Back L & R Speakers Terminals when used for Zone 2 speakers and the Zone 2 PRE-OUT. Changing the setting to Fixed will disable Zone 2 Remote Volume. If Variable volume control in Zone 2 is preferred, and the Volume setting is set to Variable, skip this section.

1. With the OSD open, and Zone 2 Controls selected, press ▶. Power will highlight in the Setup List.
2. Press ▼ twice so Volume is highlighted in the Setup List.
3. Press ▶ . The Volume Window will become active.
4. Press ▲ ▼ to set Fixed to set a fixed level. **Diagram 134**
5. When finished, press ◀ so the Volume Window is no longer active. The setting will save automatically.
6. Press ▼ so Level is highlighted in the Setup List.
7. Press ▶ . The Level window will become active.
8. Press ▲ ▼ to set Level. Range: +18dB to -81dB. **Diagram 135**
   Note: If using an external amplifier and setting a fixed output, be aware of the input settings on the amplifier. Do not overdrive the amp by setting a high output level on the M80 and boosting the input level on the amp, if it has a variable input level control. Turn speaker volume controls, if used, all the way down before turning on system components until audio levels have been confirmed to avoid unnecessary damage to the external amp or speakers.
9. When finished, press ◀ so the Level Window is no longer active. The setting will save automatically.
10. To return to the OSD Menu, press ◀.
11. To exit the OSD press Menu.

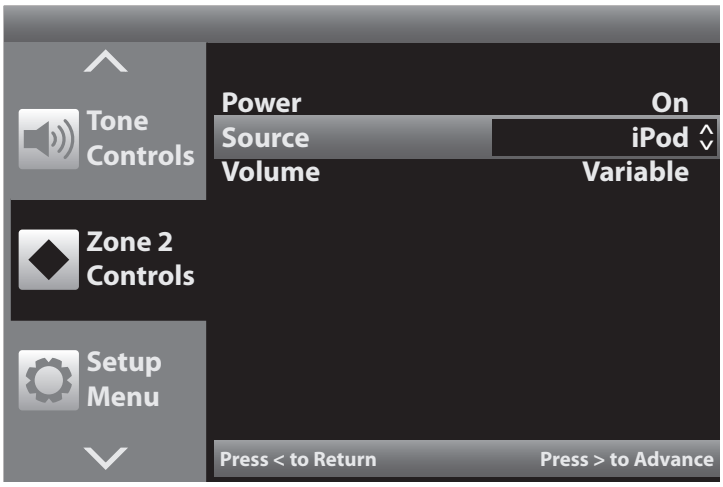


Diagram 133 *OSD - Zone 2 Source Select*

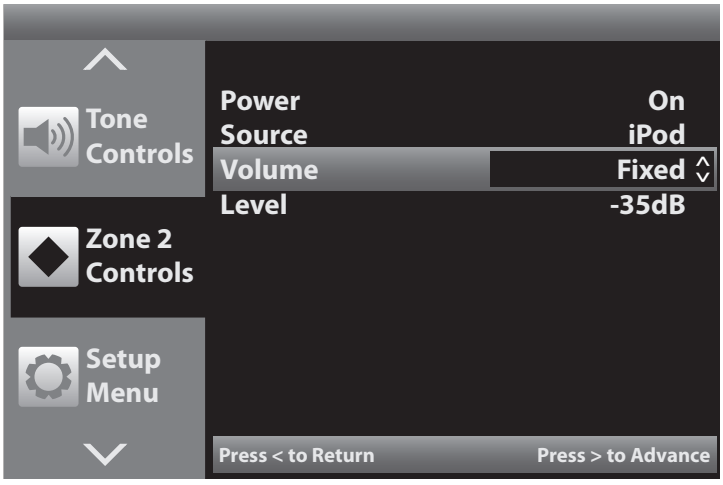


Diagram 134 *OSD - Zone 2 Variable/Fixed Volume*

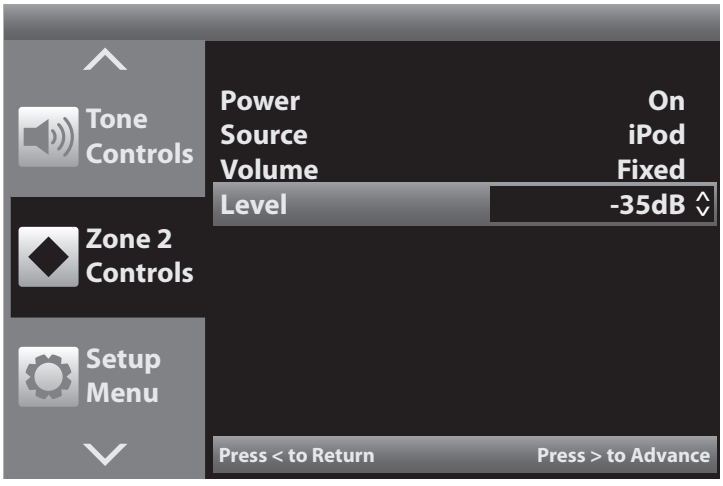


Diagram 135 *OSD - Zone 2 Adjust Fixed Volume Level*

MULTIZONE CONFIGURATION

ZONE 2 REMOTE FEATURES

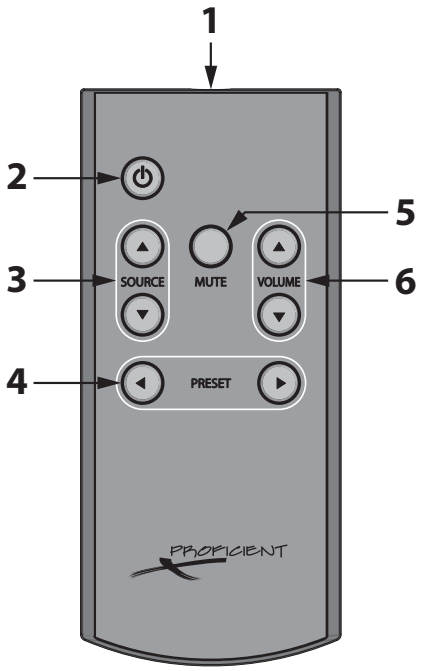


Diagram 136 *Zone 2 Remote Features*

1. **IR LED -** Infrared commands that control Zone 2 are output from this LED. The LED should always be pointed directly at the IR Sensor in Zone 2. The Zone 2 Remote can also control Zone 2 using the IR Sensor on the M80 Front Panel **(Item 8, Page 10)**.

2. **POWER (OFF) -** Press this button to turn Zone 2 OFF. Z2: OFF will appear in the Front Panel Display. If the Main Room is turned OFF while Zone 2 is ON, Z2: SOURCE will appear in the Front Panel Display as a reminder that Zone 2 is active. The message will remain on until Zone 2 is turned OFF or the Main Room is turned ON.

3. **SOURCE ▲ (Zone 2 ON/Source ▲) -** With Zone 2 OFF, the first press of this button will turn Zone 2 ON to the last source selected in Zone 2. Z2: SOURCE will appear in the Front Panel Display. If the sources have been named, (Cable, DVD, etc), the source name will appear in the display. With Zone 2 ON, press this button to select the next M80 Source.

   ▼ SOURCE (Zone 2 ON/Source ▼)- With Zone 2 OFF, the first press of this button will turn Zone 2 ON to the last source selected in Zone 2. Z2: SOURCE will appear in the Front Panel Display. If the sources have been named, (Cable, DVD, etc), the source name will appear in the display. With Zone 2 ON, press this button to select the previous M80 Source.

4. **◄ PRESET -** With the AM/FM or XM Tuner selected, press this button to select the previous programmed Tuner Preset. That is, if currently on Preset 4, a press of the ▼ Preset button will select Preset 3. If Preset 1 is currently selected, the M80 will return to the highest number programmed Preset. Tuner Preset is not displayed for Zone 2.

   PRESET ► - With the AM/FM or XM Tuner selected, press this button to select the next programmed Tuner Preset. That is, if currently on Preset 4, a press of the Preset ▲ button will select Preset 5. After selecting the highest number programmed Preset, the M80 will return to Preset 1. Tuner Preset is not displayed for Zone 2.

5. **MUTE -** With the Zone 2 ON and with any source selected, press this button to cut the amplifier output to the speakers in Zone 2. (There will be no sound coming from the speakers.) To un-mute the speakers, press the Mute button again. In a multizone configuration Mute will only mute the Zone 2 speakers. The Main Room will be unaffected. Mute is not displayed for Zone 2.
   Note: If an external amplifier is connected to the Zone 2 PRE-OUT Jacks, (variable) Mute will also mute/un-mute the external amp. If an external amplifier is connected to the Zone 2 OUT Jacks, (fixed) Mute will not mute/un-mute the external amp.

6. **VOLUME▲ ▼-** With Zone 2 ON press the VOLUME ▲ button to turn volume up; press the VOLUME ▼ button to turn the volume down. Zone 2 audio output level is not displayed.

OPERATING ZONE 2

Zone 2 can be controlled two ways. One is from the M80 OSD using the M80 Remote or Front Panel Cursor and the other is using the M80 Zone 2 Remote. The Zone 2 Remote will control Zone 2 using the IR Sensor on the M80 Front Panel or an IR Sensor connected to one of the IR IN jacks on the M80 Rear Panel.

Diagram 137 *M80 Front Panel - Zone 2 ON*

Diagram 138 *M80 Front Panel - Zone 2 OFF*

This section describes controlling Zone 2 using the Zone 2 Remote. For information regarding controlling Zone 2 from the OSD, see section: **Multizone Configuration/Zone 2 Controls**.

Note: All Zone 2 Remote functions, except mute/un-mute, are non-functional while the OSD is active in Menu Mode. Zone 2 Remote functions are normal while the OSD is active for Tuner (AM/FM/XM) and iPod metadata.

Zone 2 ON/OFF Status and Main Room ON/OFF Status are completely independent. Zone 2 can be turned ON/OFF regardless of the Main Room ON/OFF Status and the Main Room can be turned ON/OFF regardless of Zone 2 ON/OFF Status. Neither will affect the other if turned ON/OFF while the other is ON/OFF. If only Zone 2 is ON, Z2: iPod (or selected source) will display in the Front Panel Display lower line to indicate power ON to the remote zone.

Note: The OSD will only show Zone 2 status on the Main Room Video Display if the OSD is activated and the Zone 2 Controls Menu is selected as described in the section: **Zone 2 Controls.** The OSD Menus, AM/FM/XM Tuner and iPod metadata do not display in Zone 2.

ON

Press the Power button on the Zone 2 Remote. When Zone 2 is turned ON, the M80 Front Panel Display will indicate Z2: iPod (or last selected Zone 2 source) for about 10 seconds in the lower line. The Main Room Source will continue to be displayed in the upper line. **Diagram 137**

OFF

Press the Power button on the Zone 2 Remote. When Zone 2 is turned OFF, the M80 Front Panel Display will indicate Z2: OFF for about 10 seconds in the lower line. The Main Room Source will continue to be displayed in the upper line. **Diagram 138**

Volume

With Zone 2 ON press the Volume ▲ ▼ buttons on the Zone 2 Remote to adjust Zone 2 Speaker or Zone PRE-OUT audio output. If Zone OUT is used, that is a fixed level output and the Zone 2 Remote will not adjust the audio output of these jacks. There will be no display of Zone 2 audio level on the M80 Front Panel Display or Zone 2 Video Display.

Mute

With Zone 2 ON and with any available line level audio source selected, press the Mute button on the Zone 2 Remote to cut the amplifier output to the Zone 2 speakers or Zone PRE-OUT. (There will be no sound coming from the speakers connected directly to the M80 or speakers connected to the amp being fed by the Zone PRE-OUT.) Press the Mute button again to un-mute the speakers. If Zone OUT is used, that is a fixed level output and the Zone 2 Remote will not mute/un-mute the audio output of these jacks. There will be no display of Zone 2 Mute on the M80 Front Panel Display or Zone 2 Video Display.

Source

With Zone 2 ON press the Source ▼ ▲ buttons on the Zone 2 Remote to select the previous/next Source. (Sources 1-8 & Tuner on the M80 Remote). The Zone 2 Remote will only select the currently selected Tuner (FM/AM/XM) and does not scroll through the Tuners as does the M80 Remote. (To change Tuner Band (AM/FM/XM), with Tuner selected in the Main Room, repeatedly press the Tuner or Band button on the M80 Remote.) There will be no display of Zone 2 source selection on the M80 Front Panel Display or Zone 2 Video Display.

Preset

With Zone 2 ON and with the AM/FM or XM Tuner selected, press the Preset ◄ ► buttons on the Zone 2 Remote to select the previous/next programmed Tuner Preset. There will be no display of Zone 2 tuner preset selection on the M80 Front Panel Display or Zone 2 Video Display.

TROUBLESHOOTING

PROBLEM	SOLUTION
Power	
Unit does not power up.	a) Confirm Power Cord is connected and plugged in to an unswitched 110V AC Outlet.
Audio	
No Sound From Speakers	a) Confirm source audio connections. b) Confirm Audio Input Settings in OSD Source Setup. c) Confirm speaker connections. d) Confirm volume is turned up and un-muted. e) Confirm source is selected, turned on and playing. f) If connected, unplug headphones. g) Confirm OSD Speaker Setup; run SmartEQ h) Confirm Surround Back speakers are properly configured in OSD Amplifier Setup (Back Amp) for Main Back or Zone 2 as appropriate.
Subwoofer does not turn ON/OFF with Main Room speakers	i) Confirm Subwoofer audio connection j) Confirm Trigger/Sub connection (if used). k) Confirm OSD Trigger Setup (if used). l) Increase Main Room volume or adjust sub input level to trigger Sub audio sensing (if used).
Surround Modes	m) Refer to sections: **Listening Modes Setup** and **Operating The M80/Listening Modes**.
Video	
No Video Signal on TV or Video Display	a) Confirm source video connections to M80. b) Confirm Video Input Settings in OSD Source Setup. b) Confirm HDMI/Component/S/Composite Video Monitor OUT from M80 Monitor OUT to TV/Video Display HDMI/ Component/S/Composite Video IN. c) Confirm proper Input is selected on the Video Display. d) Confirm source is selected, turned on and playing. e) Confirm Resolution to Display is set to Auto in OSD Video Setup; adjust to lower resolution if appropriate.
Tuner	
No Reception Bad Reception	a) Confirm AM/FM antenna connections to M80. b) Confirm antenna(s) are in best position for optimum reception. c) Move antenna away from possible sources of interference such as computers, microprocessors, fluorescent lights, motors, etc.
No Preset Channels	d) Confirm Preset programming.
XM	a) Confirm XM Ready Tuner connection to M80 XM Port. b) Confirm position of XM antenna.
No XM Channels other than Preview Channel	c) Confirm XM Satellite Radio Subscription.

PROBLEM	SOLUTION
Remote Control	
Remote does not control M80	a) Replace batteries in remote. b) Confirm direct 'line-of-sight' from the remote to the IR Sensor on the M80 Front Panel. c) Block any bright light or high ambient light that may be saturating the IR Sensor with light noise. d) Confirm connection of external IR Receiver (if used).
iPod	a) Confirm Proficient iPod Dock connection to M80 iPod Dock Port.
XM	a) Confirm XM Ready Tuner connection to M80 XM Port.
Zone 2	
No Audio	a) Confirm Zone 2 source analog line level audio connections. b) Confirm source analog audio input selection in OSD Source Setup. (If a digital audio input is also selected, it will be the priority to the Main Room for Surround Mode processing.) c) Confirm Zone PRE-OUT or OUT connections to an external amplifier. d) Confirm OSD Zone 2 Controls Setup. e) Confirm Zone 2 speaker connections. f) Confirm Zone 2 volume is turned up and un-muted. g) Confirm Zone 2 source is selected, turned on and playing.
No Video	a) Confirm Zone 2 source composite and/or S-Video connections. b) Confirm Zone 2 composite and/or S-Video connection to Zone 2 Video Display. c) Confirm proper Input is selected on the Zone 2 Video Display. d) Confirm composite or S-Video Input is selected in Setup Menu e) Confirm source is selected, turned on and playing.
No IR Control	d) Confirm connection of Zone 2 IR Receiver (if used). b) Confirm direct 'line-of-sight' from the remote to the IR Sensor on the M80 Front Panel. c) Block any bright light or high ambient light that may be saturating the IR Sensor with light noise. a) Replace batteries in remote.

SPECIFICATIONS

Audio Sections

Front Left & Right

Rated Continuous Power Output/Channel (1 channel driven into 8 Ohms)	130 Watts, 20Hz to 20kHz
Rated Continuous Power Output/Channel (2 channels driven into 8 Ohms)	100 Watts, 20Hz to 20kHz
THD (at rated power)	<0.05%
Rated Continuous Power Output/Channel (2 channels driven into 4 Ohms)	160 Watts <0.1% @ 1kHz

Center

Rated Continuous Power Output/Channel (1 channel driven into 8 Ohms)	130 Watts, 20Hz to 20kHz
Rated Continuous Power Output/Channel (1 channel driven into 8 Ohms)	100 Watts, 20Hz to 20kHz
THD (at rated power)	<0.05%
Rated Continuous Power Output/Channel (2 channels driven into 4 Ohms)	160 Watts <0.1% @ 1kHz

Surround Left & Right

Rated Continuous Power Output/Channel (1 channel driven into 8 Ohms)	130 Watts, 20Hz to 20kHz
Rated Continuous Power Output/Channel (2 channels driven into 8 Ohms)	100 Watts, 20Hz to 20kHz
THD (at rated power)	<0.05%
Rated Continuous Power Output/Channel (2 channels driven into 4 Ohms)	160 Watts <0.1% @ 1kHz

Surround Back Left & Right

Rated Continuous Power Output/Channel (1 channel driven into 8 Ohms)	130 Watts, 20Hz to 20kHz
Rated Continuous Power Output/Channel (2 channels driven into 8 Ohms)	100 Watts, 20Hz to 20kHz
THD (at rated power)	<0.05%
Rated Continuous Power Output/Channel (2 channels driven into 4 Ohms)	160 Watts <0.1% @ 1kHz

Damping Factor	> 100, all channels
Input Sensitivity (For rated power @ max VC)	250 mV Line IN
Input Impedance (Source Inputs)	47 K Ohms Line IN
Input Overload (Source Inputs)	> 5 V Line IN
Output Voltage (Audio 1 and 5 OUTS)	250 mV
Output Voltage (Zone 2 Pre-Outs w/250 mV @ Source Inputs)	1.25V, VC Max.
Output Impedance (Pre-Outs)	< 300 Ohms
Frequency Response (@ 1 Watt @ 8 Ohms)	10 Hz to 80 kHz +/- 1.5 dB
Channel Separation	> 50 dB @ 10 kHz
Cross Talk Between Sources	> 80 dB @ 10 kHz
S/N Ratio (Re: Rated Output, IEC A, Line Inputs 1k Ohm)	> 110 dB (VC 20 dB below FCW)
Bass Control Range	+/- 10 dB @ 100 Hz
Treble Control Range	+/- 10 dB @ 10 kHz

Video Sections

Composite

Bandwidth	5 Hz to 10 MHz, +0dB, -3dB
Input/Output Levels	1.0V p-p
Input/Output Impedance	75 Ohms

S-Video

Bandwidth	5 Hz to 10 MHz, +0dB, -3dB
Input/Output Levels (Y)	1.0V p-p, 75 Ohms
Input/Output Levels (C)	0.286V p-p, 75 Ohms

Component

Bandwidth	5 Hz to 100 MHz, +0dB, -3dB
Input/Output Levels (Y)	1.0V p-p, 75 Ohms
Input/Output Levels (Pb/Cb)	0.7V p-p, 75 Ohms
Input/Output Levels (Pr/Cr)	0.7V p-p, 75 Ohms

HDMI

All HDMI	Per HDMI v1.3a Specifications
Type	Repeater

FM Tuner Sections

Tuning Range	87.5 to 108.0 MHz
Usable Sensitivity (IHF, 98.1 MHz)	11 dBf Mono
Sensitivity (50 dB quieting, 98.1 MHz)	16 dBf Mono, 38 dBf Stereo
S/N Ratio (65 dBf, 98.1 MHz)	78 dB Mono, 72 dB Stereo
Freq. Response (Mono or Stereo)	20 Hz to 15 kHz +/- 3 dB
Separation (@ 1 kHz, 65 dBf)	> 40 dB
THD (1 kHz, 65 dBf, 98.1 MHz)	0.15% Mono, 0.3% Stereo
Capture Ratio (45 dBf)	2.0 dB
AM Rejection Ratio	50 dB
Alternate Channel Selectivity	70 dB

AM Tuner Sections

Tuning Range	530 to 1710 kHz
Sensitivity (20 dB Quieting, 1000kHz loop antenna)	500 mV/m
Selectivity (@ S/N 20dB, +/- 10 kHz)	30 dB
S/N Ratio (400 Hz, 10 mV/m Input @ 1000 kHz, 30% Mod.)	45 dB
THD (400 Hz, 10 mV/m Input @ 1000 kHz, 30% Mod.)	0.8%
Selectivity	+/- 10 kHz, >25dB
Image Rejection (1400 kHz)	34 dB

Control Sections

IR Control

IR 1 & 2 IN	5 V p-p Active High, with Carrier
IR OUT	5 V p-p Active High, Stripped Carrier (4V with 270 Ohms Loading)

Trigger OUT

Trigger Outputs (0 to 12 V DC)	12 V @ 10 mA, 9.0V @100mA

General

Power Consumption 120V Version

Standby	2.0 Watts
No signal (idle) 85 Watts	
At 1/8 Rated Power (10 Watts/Channel, 8Ω)	570 Watts
Rear Panel Marked Line Ratings	120 VAC, 60 Hz, 4.2A
Switched AC Outlet Rating	120 VAC, 100 Watts, 1 Amp Max

Dimensions

17-1/8" W x 5-7/8" H* x 14-3/4" D
* 6-1/2" H, including feet

Weight

31 lbs

APPENDIX

M80 DEFAULT SETTINGS

The following Charts provide reference to M80 Factory Settings. The M80 is a highly evolved Audio Video Surround Receiver with features that can satisfy even the most discriminating user. With so many options, it is possible to change some of the settings to a point where the M80 may not be running at optimal performance. Please use the following Charts as reference to the factory settings should any section of the M80s performance seem less than satisfactory.

The Default Settings Charts are followed by similar, matching, Worksheets. The M80 has been setup at the factory for typical baseline connections and functionality. This makes understanding the default settings simple, and makes modifications for user preferences of connections and settings manageable. Fill out the Worksheets prior to making connections and configuring the OSD Setup. Having this reference will help avoid unnecessary mistakes during installation and setup.

Keeping a copy of the connections and settings Worksheets is highly recommended should settings get changed or should a source component need replacing.

SOURCE SETUP DEFAULT CONFIGURATION								
	SOURCE 1	SOURCE 2	SOURCE 3	IPOD	SOURCE 5	SOURCE 6	MULTI	FRONT
SOURCE NAME	Source 1	Source 2	Source 3	iPod	Source 5	Source 6	Multi	Front
Audio IN	Audio 1	Audio 2	Audio 3	Audio 4	Audio 5	Audio 6	7.1 Input	Audio Front
Audio Gain	0dB	0dB	0dB	0dB	0dB	0dB	0dB	0dB
Digital Audio	Off	Off	Off	Off	Off	Off	Off	Off
Video IN	Video 1	Video 2	Video 3		Off	Off	Off	Video Front
Trigger OUT	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

SPEAKER SETUP DEFAULT CONFIGURATION								
	FRONT LEFT	CENTER	FRONT RIGHT	SURROUND RIGHT	BACK RIGHT	BACK LEFT	SURROUND LEFT	SUB
Configuration (Large/Small/ X-Over)	S 80Hz	S 80Hz	S 80Hz	S 80Hz	S 80Hz	S 80Hz	S 80Hz	On
Levels	0dB	0dB	0dB	0dB	0dB	0dB	0dB	N/A
Distance (Delay)	0 Feet	0 Feet	0 Feet	0 Feet	0 Feet	0 Feet	0 Feet	0 Feet

LISTENING MODE DEFAULT CONFIGURATION (All Sources)				
DOLBY DIGITAL 2 CHANNEL	DOLBY DIGITAL SURROUND	DTS	OTHER DIGITAL	OTHER ANALOG
None	None	None	None	None

DOLBY SETUP DEFAULT SETTINGS		
DOLBY DIGITAL	Dynamic Range Control	100%
DOLBY PRO LOGIC II/IIx MUSIC	Center Width	3
	Dimension	0
	Panorama	Off

DTS SETUP DEFAULT SETTINGS		
NEO:6 MUSIC	Center Gain	0.2

VIDEO OUTPUT DEFAULT CONFIGURATION		
RESOLUTION TO DISPLAY	Auto	
VIDEO MODES	Normal (Default)	
	Custom (Option)	
	Brightness	50
	Contrast	50
	Color	50
	MPEG Noise Reduction	Off
	Cross Color Suppressor	Off
	Film Mode Detect	Off

OTHER DEFAULT SETTINGS		
LIP SYNC DELAY	0ms	
TONE CONTROLS	Tone Defeat Off	
	Treble 0dB	Bass 0dB
ZONE 2 CONTROLS	Off	
AMPLIFIER SETUP/BACK AMP	Main Back	
TRIGGER OUT	Source Setup	
TRIGGER DELAY	0s	

VIDEO UP/DOWN CONVERSION (MAIN ROOM)
NOTE: VIDEO UP/DOWN CONVERSION ONLY APPLIES FOR SOURCE INPUTS TO MAIN ROOM MONITOR OUTPUTS
VIDEO 1 OUT AND ZONE 2 COMPOSITE AND S-VIDEO OUTS ARE PASS THROUGHS FOR SAME SIGNAL LEVEL ONLY

	HDMI					Component Video				S-Video	Com-posite
OUTPUT	1080p	1080i	720p	480p	480i	1080i	720p	480p	480i	480i	480i
INPUT											
HDMI											
1080p	X	X	X	X							
1080i	X	X	X	X							
720p	X	X	X	X							
480p	X	X	X	X							
480i											
Component											
1080i	X	X	X	X		X	X	X	X	X	X
720p	X	X	X	X		X	X	X	X	X	X
480p	X	X	X	X		X	X	X	X	X	X
480i	X	X	X	X		X	X	X	X	X	X
S-Video											
480i	X	X	X	X		X	X	X	X	X	X
Composite											
480i	X	X	X	X		X	X	X	X	X	X

It may be necessary to change 'Picture Size' on the Video Display with some Output Resolution Settings

APPENDIX

M80 WORKSHEETS

Use the following Worksheets to document connections and settings to assist in installation and setup. Keep these Worksheets in a safe convenient location for future reference. Mark the boxes or make other notes indicating M80 input connections by source.

SOURCE INPUT CONNECTIONS								
	SOURCE 1	SOURCE 2	SOURCE 3	IPOD	SOURCE 5	SOURCE 6	MULTI-IN	FRONT
SOURCE NAME								
AUDIO INPUTS								
Audio 1 IN								
Audio 1 OUT								
Audio 2								
Audio 3								
Audio 4								
Audio 5 IN								
Audio 5 OUT								
Audio 6								
Audio Front								
Coaxial 1								
Coaxial 2								
Coaxial OUT								
Optical 1								
Optical 2								
Optical Front								
Optical OUT								
Multi-In								
VIDEO INPUTS								
Video 1 IN								
Video 1 OUT								
Video 2								
Video 3								
Video 4								
Video Front								
S-Video 1 IN								
S-Video 1 OUT								
S-Video 2								
S-Video 3								
S-Video 4								
S-Video Front								
Component 1								
Component 2								
Component 3								
HDMI 1								
HDMI 2								
HDMI 3								
HDMI 4								

SPEAKER CONFIGURATION/SETTINGS								
	FRONT LEFT	CENTER	FRONT RIGHT	SURROUND RIGHT	BACK RIGHT	BACK LEFT	SURROUND LEFT	SUB
Model Number								
Configuration (Large/Small/ X-Over)								
Levels								
Distance (Delay)								

MAIN ROOM VIDEO DISPLAY CONNECTIONS	
Model Number	
Composite Video Monitor Out	
S-Video Monitor Out	
Component Video Monitor Out	
HDMI Monitor Out	

ZONE 2 CONNECTIONS	
AUDIO	
External Amp Model Number	
Zone 2 PRE-OUT (variable)	
Zone 2 OUT (fixed)	
Zone 2 Speakers Model Number	
VIDEO	
Zone 2 Video Display Model Number	
Zone 2 Composite Video Out	
Zone 2 S-Video Out	

APPENDIX

LISTENING MODE PREFERENCES								
	SOURCE 1	SOURCE 2	SOURCE 3	IPOD	SOURCE 5	SOURCE 6	MULTI-IN	FRONT
SOURCE NAME								
Model Number								
LISTENING MODE								
Dolby Digital 2 Channel								
Dolby Digital Surround								
DTS								
Other Digital								
Other Analog								

DOLBY SETUP SETTINGS		
DOLBY DIGITAL	Dynamic Range Control	
DOLBY PRO LOGIC II/IIx MUSIC	Center Width	
	Dimension	
	Panorama	

DTS SETUP SETTINGS		
NEO:6 MUSIC	Center Gain	

VIDEO OUTPUT CONFIGURATION/SETTINGS		
RESOLUTION TO DISPLAY		
VIDEO MODES	Normal (Default)	
	Custom (Option)	
	Brightness	
	Contrast	
	Color	
	MPEG Noise Reduction	
	Cross Color Suppressor	
	Film Mode Detect	

OTHER SETTINGS				
LIP SYNC DELAY				
TONE CONTROLS	Treble		Bass	
ZONE 2 CONTROLS	Power	Source	Volume	Level
AMPLIFIER SETUP/BACK AMP				
TRIGGER OUT				
TRIGGER DELAY				

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If, upon examination by Proficient it is determined that the unit is in fact defective, Proficient will, at its option:

- Repair or replace the product at no additional charge; or
- If the model is no longer available and cannot be repaired effectively, replace the unit with a current model of equal or greater value. In some cases where a new model is substituted, a modification to the mounting surface may be required. If mounting surface modification is required, Proficient assumes no responsibility or liability for such modification. Proficient will bear the cost of returning the repaired or replaced product to you, freight prepaid. All replaced parts and product become the property of Proficient Audio Systems. The foregoing is your sole and exclusive remedy for breach of warranty. If the product is not found to be defective, Proficient will contact you to arrange for return of the product to you, at your expense.

EXCLUSIONS:

- This Warranty does not include service or parts to repair damage caused by accident, disaster, misuse, abuse, negligence, inadequate packing or shipping procedures, commercial use, voltage inputs in excess of the rated maximum of the unit, or service, repair or modification of the product by unauthorized dealers. This Warranty also excludes normal cosmetic deterioration caused by environmental conditions.

- This Warranty will be void if:
  - The Serial Number on the product has been removed, tampered with or defaced.
  - The product was not purchased from an authorized dealer.

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