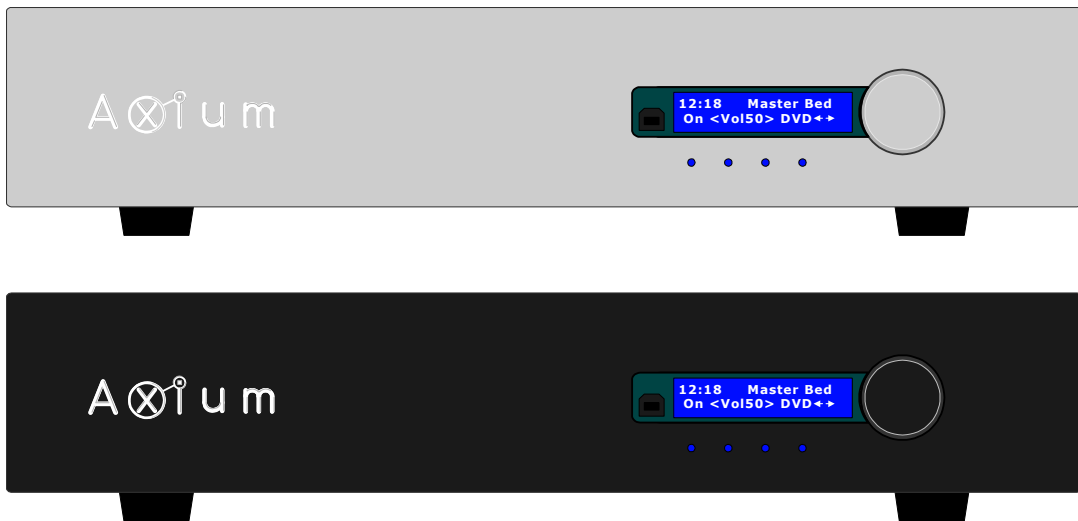


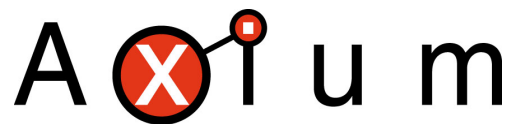
INSTALLATION & OPERATION
MANUAL

AX4752

Multi-Zone Audio/Video amplifier



Four Zone, Seven Source, 50W Per-Channel



Total In Home Connectivity

Congratulations!

You have purchased one of the most advanced, dedicated multi-room amplifiers on the market. The **AX4752** like other Axiom products is designed to maximize control, simplify functionality, & expedite installation. Axiom products are built to the highest standards of quality and reliability.

To view Axiom's product line of multi-room amplifiers, controllers, & accessories please visit the Website at www.axium.co.nz

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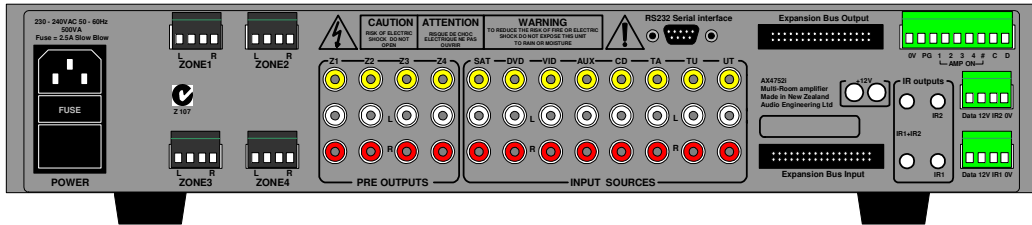
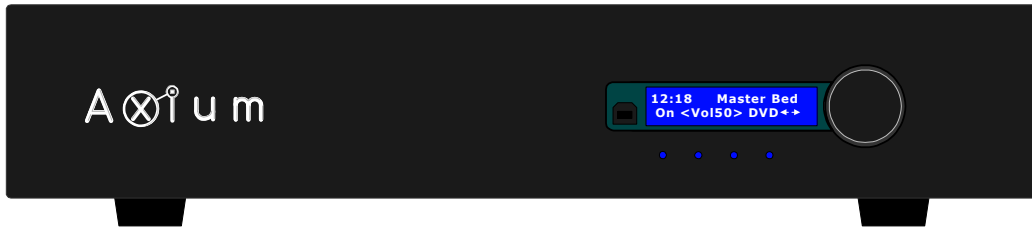
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INTRODUCTION

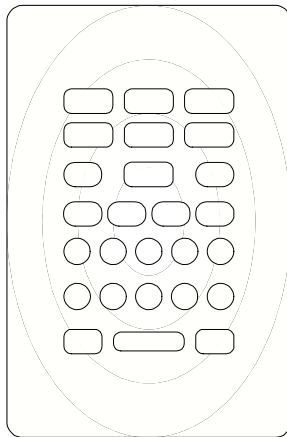
The **AX4752** multi-zone audio/video amplifier combined with Axium controllers, and/or a home automation system enables you to individually control the power, volume and source selection in up to four rooms, with four Sub-zone preamplifier outputs available. Axium multi-zone amplifiers may be interconnected via the expansion bus, providing up to 32 zones of control which vastly simplifies installation cabling. An RS232 & USB interface may be used to control & monitor the amplifier either from a PC or building management system.

Axium Keypads are IR Learning and include a host of features to simplify / enhance the amplifier and source equipment control. Such features include amplifier feedback of Power, source select etc, IR receiver pass through, macro and long press functions. The IRFX Infra-Red receiver is plasma proof & sunlight tolerant utilizing Axium's 'Data-stream filtered' technology to provide the best possible IR system reliability.

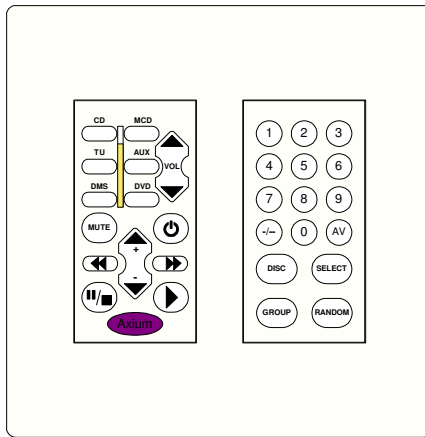
A utility program called AMC is available on the product CDROM or Axium website. AMC provides a simple user interface from a PC or Laptop, and provides control of all Axium networked components.



AX-KPD



KRXm and KRXs



IRFX



FEATURES

Mult-Zone , Multi-Source, Video Switching

The AX4752 has four separate preamplifiers and amplifiers, providing 4 zones of independent yet integrated control.

There are seven stereo sources (SAT, DVD, VID, AUX, CD, Tape & Tuner) and an eighth mono source (Utility) typically used for paging applications.

Each zone has an eight source composite video switcher, so screen's in four different rooms may display any of the eight sources (SAT, DVD, VID, AUX, CD, Tape, Tuner & Utility)

Preamplifiers and outputs

Each zone has bass, treble, balance and loudness control. These are accessed either from the front panel or AMC program.

The preamplifier output volume may be independent of the amplifier volume, or made to track the amplifier with an adjustable offset (± 20 dB). The tracking feature is great for passive subwoofer control, while the independent volume feature is useful for limited control in close-coupled rooms. A useful protection feature is 'Maximum volume limiting'. This limits the maximum volume of either the amplifier or preamplifier.

Amplifier Power, Protection, and Clipping indicators

50 Watts RMS per channel into 8 ohms, capable of driving into 4 ohms.

The amplifiers are protected against short-term output shorts.

There are three progressive levels of thermal protection:

- 1) An internal fan is turned on to aid cooling.
- 2) The amplifier volume is reduced 20dB.
- 3) The amplifiers are shutdown until the temperature reduces below the first level.

Care should be taken to ensure adequate ventilation - see "installation guide"

The front panel zone indicators will flash red when the zone amplifiers are overdriven into clipping.

USB, RS232 & IR Control

The AX4752 may be controlled and monitored via either the front Panel USB or rear panel RS232 serial interface.

In multi amplifier installations where the amplifiers are interconnected using an expansion bus cable, only one USB or RS232 connection is required to control the stack of amplifiers.

An AX4752 may receive IR directly from the front panel receiver or via the two 'Controller interface' connections.

There are zone specific IR commands and also a set of global IR commands.

The commands are: ON, OFF, Standby (toggling), Mute, Amp Volume Up, Amp Volume Down, Pre Volume Up, Pre Volume Down, SAT, DVD, VID, AUX, CD, TA, TU, UTILITY, On with Source specific commands.

The Global commands also include; PRESET1 - PRESET 6, Alarm Enable, Alarm OFF, & 5 minute Sleep.

Real time clock

The AX4752 is equipped with a real time clock.

The amplifier may be set up to function as an alarm clock, so that at 6.30am in the morning 5 days a week, the master bedroom zone could be made to turn on, select tuner, and go to a specific volume. Another application of the clock is temperature and event logging, providing a history of the amplifier environment which aids servicing.

The clock continues to operate typically > 48 hours without power - more than enough to keep the time current during lengthy power outages.

IR Emitter Ports

There are 4 Buffered IR emitter Ports.

Two IR ports have routing, and are linked to their respective 'Controller Interface' ports. These ports control zone specific source components.

Two IR ports are the sum of both IR sources; these control the all zone source components.

Presets & Paging

There are six amplifier presets, and a 'page preset'.

Presets 1 - 6 are momentary and cause the amplifier to go to a predetermined setup, i.e. standby, volume & source selection. The presets may also be programmed with event scheduling, and are used by the alarm clock feature.

The 'page preset' mode is for paging applications and is invoked by a contact closure between the 'OV' and the 'PG' terminals. When the contact closure is released the amplifier zones return to their previous states.

Zone Linking

A zone may be programmed to link one other zone. Zone linking ties the source selection together. It may also tie the volume, and standby. This is useful for closely coupled audio areas where it is advantageous to have different volume control but the same source, or the same volume with separate standby control. Zone linking is setup either via the front panel user interface or by the AMC program.

32 Zones

There are 32 zones of possible control. On an **AX4752** each zone must be different, however in a multiple amplifier stack same zone amplifiers are possible - they simply mimic every parameter.

Expansion Bus

Data, IR, Amp-On & audio sources are interconnected via the expansion bus.

The expansion bus feature vastly simplifies the installation cabling of an Axiom amplifier stack.

One amplifier is connected to another using a 34-way ribbon cable. Connections are made from the output of the first amplifier to the input of the second etc.

All audio sources must be connected to the first amplifier.

Note: Video signals are not passed through the expansion bus.

Amplifier ON Status - "Amp-On"

Each zone has front panel ON status indication, and +12VDC outputs on the rear panel connector. (1, 2, 3, 4 & #) The # 'AMP ON' output is a logic 'And' output, i.e. if any of the zones are ON then the output is +12V. This is useful for driving a relay that connects AC power to source equipment. The 'AMP ON' output's are protected against shorts. The 'AMP ON' output default to tracking the preamplifier ON status but may be set to track the amplifier ON status. This is set via the AMC program.

Axiom Bus

Axiom Bus provides inter-amplifier control & amplifier status for the old style KRX membrane Keypads.

The Bus is short protected. (Terminals C & D)

Power failure Restoration

After an AC power outage the **AX4752** restores it's settings to the pre-interrupted state. All internal settings are stored in non-volatile memory, except the clock that runs for at least 48 hours on stored power.

Restore factory defaults

Push and holding down the rotary encoder for > 10 seconds takes you to the setup menu, select restore factory defaults, and press again. The amplifier will be reset to factory defaults, and the memory cleared.

Firmware upgradeable

The **AX4752** may be updated with the latest operational firmware, using Axiom 'Uploader 2' program. The ability to enhance the functionality of installed Axiom product's provides a degree of future proofing, and flexibility.

INSTALLATION GUIDE

UNPACKING

Immediately upon receiving your **AX4752** inspect the carton for evidence of mishandling during shipment. Then carefully unpack the unit and inspect for damage.

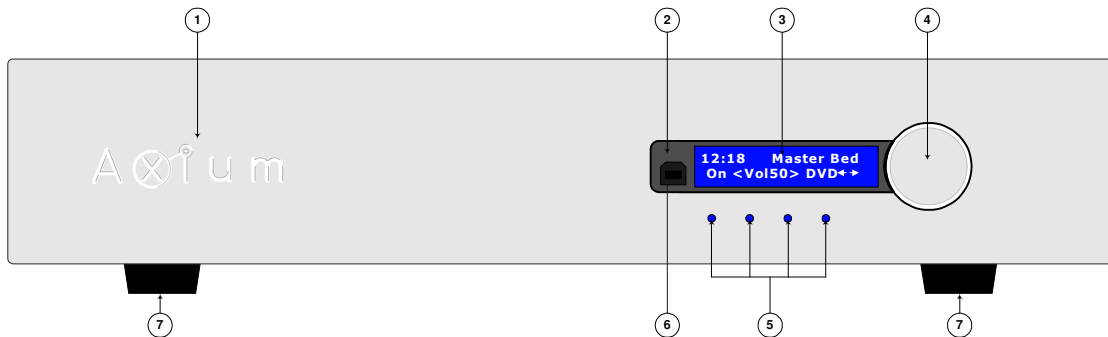
Please save the shipping carton and all inner packing materials in the event that the **AX4752** needs to be shipped for service or moved to a new location.

Should you discover that the **AX4752** has been damaged during shipping please contact your dealer immediately.

PRECAUTIONS

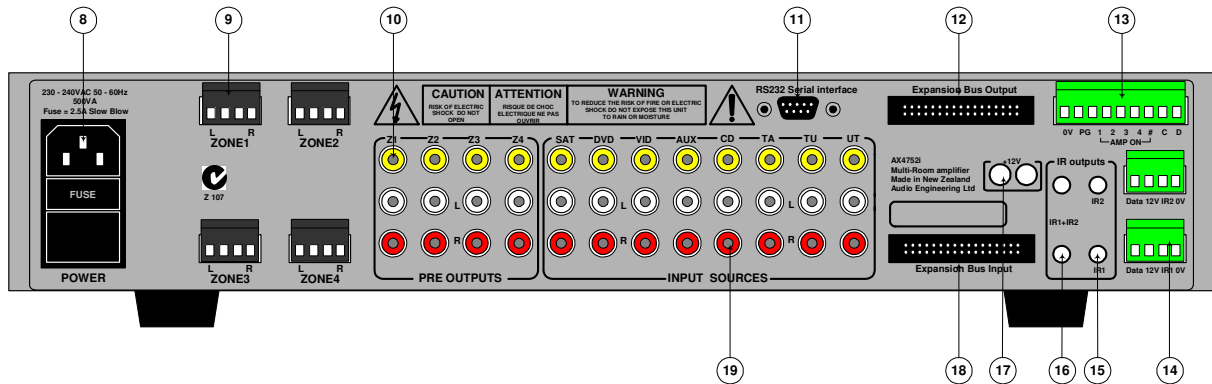
- 1) Never expose the unit to moisture.
- 2) Avoid restricting the airflow around the **AX4752**. Good airflow is necessary to help ensure proper operation. Not only should you provide enough free space around the unit, but also ensure that air can flow freely and escape from the amplifier surroundings. Failure to do so may cause thermal shutdown of the unit, or intermittent channel cutout and reduced life expectancy. A thermal temperature log is kept.
- 3) Under no circumstances should the speaker output terminals of the unit be short circuited, or connected to another output.
- 4) Avoid plugging the RS232 cable into the unit while power is connected.
- 5) Never short the controller interface or 9 way controller terminals.
- 6) Avoid installing the **AX4752** in positions where the front panel is exposed to direct sun light. This may intermittently slow down the response of the unit.
- 7) Never connect more than four Axium controllers to the unit's +12Vdc power supply terminals. The supply is internally fused and will open circuit (self-resetting).
- 8) Never connect the **AX4752's** +12Vdc power supply to an external power supply or other Axium amplifier's +12Vdc output.

FRONT PANEL GUIDE



- 1 **Front Panel:** Solid Aluminum front Panel with Engraved Axium Logo.
- 2 **Infra-Red Receiver:** Receiver for front panel IR control - Not IR pass through!
- 3 **LCD display:** Back lit LCD display for menu guided control & programming. The display is dimmed when all zones are OFF.
- 4 **Rotary Encoder & Push Select:** The display menus are navigated and selections made using left and right rotation and pushes on the knob.
- 5 **Zone Indicators:** From Left to right zone 1 - 4. The indicators are blue when ON, and flash red when the amplifiers are overdriven into clipping.
- 6 **USB port:** Front panel programming.
- 7 **Chassis Feet:** Set high enough to provide unrestricted airflow through the chassis for convection cooling.

REAR PANEL GUIDE



- 8 AC Power Socket:** IEC socket, with integral fuse and power switch.
- 9 Speaker Terminals:** Plug in terminal clamp connectors accept 1.5mm² speaker wires
- 10 Pre-amplifier Outputs:** Audio and composite video outputs. Gold plated RCA connectors.
- 11 RS232 Comm Port:** DB9 connector. The port is used to setup, control or monitor the AX4752. A null modem cable must be used when connecting to a PC or building management system.
- 12 Expansion Bus Output:** 34 way IDC header. Connects to the expansion bus input of the next AX4752i amplifier in the stack.
- 13 Paging & Status Terminals:** 9 way Plug in terminal clamp connector. A short between PG and 0V invokes the 'Page' preset, making possible telephone paging through the multi-zone system. AMP-ON 1, 2, 3, 4 provides +12VDC when the preamplifier or amplifier zone is ON. AMP-ON # is +12VDC whenever any of the zones are ON. Terminals C & D are Axium Bus connections for operation of the Axium KRX membrane keypads.
- 14 Controller Interface:** 4 way green plug in terminal clamp connectors, used for connecting to Keypads & IR receivers. There are two controller interface ports each linked with an IR port providing IR routing. The +12VDC output is internally fused (self-resetting), and has a maximum loading of 4 Axium keypad's or IR receivers. The 'Data' terminal sends amplifier status to Axium keypads.
- 15 Routed IR Emitter Ports:** 3.5mm mono phone jacks. IR1 & IR2 are used to control specific source components. The ports only output IR strings received from their associated controller interface.
- 16 IR Emitter Ports:** 3.5mm mono phone jacks. The two jacks labeled IR1+IR2 are for control of source components common to all zones. They output the combined IR1 & IR2 IR strings.
- 17 +12VDC Center Positive Outputs:** For powering the AX075 slave amplifiers.
- 18 Expansion Bus Input:** 34 way IDC header. Connects from another Axium amplifiers expansion bus output - provides connection of source component audio, control, & IR. Note: Video does not go up the expansion bus lead.
- 19 Source Component Connections:** Gold plated RCA jacks. Source component line level and composite video inputs.

TYPICAL SYSTEM CONFIGURATION

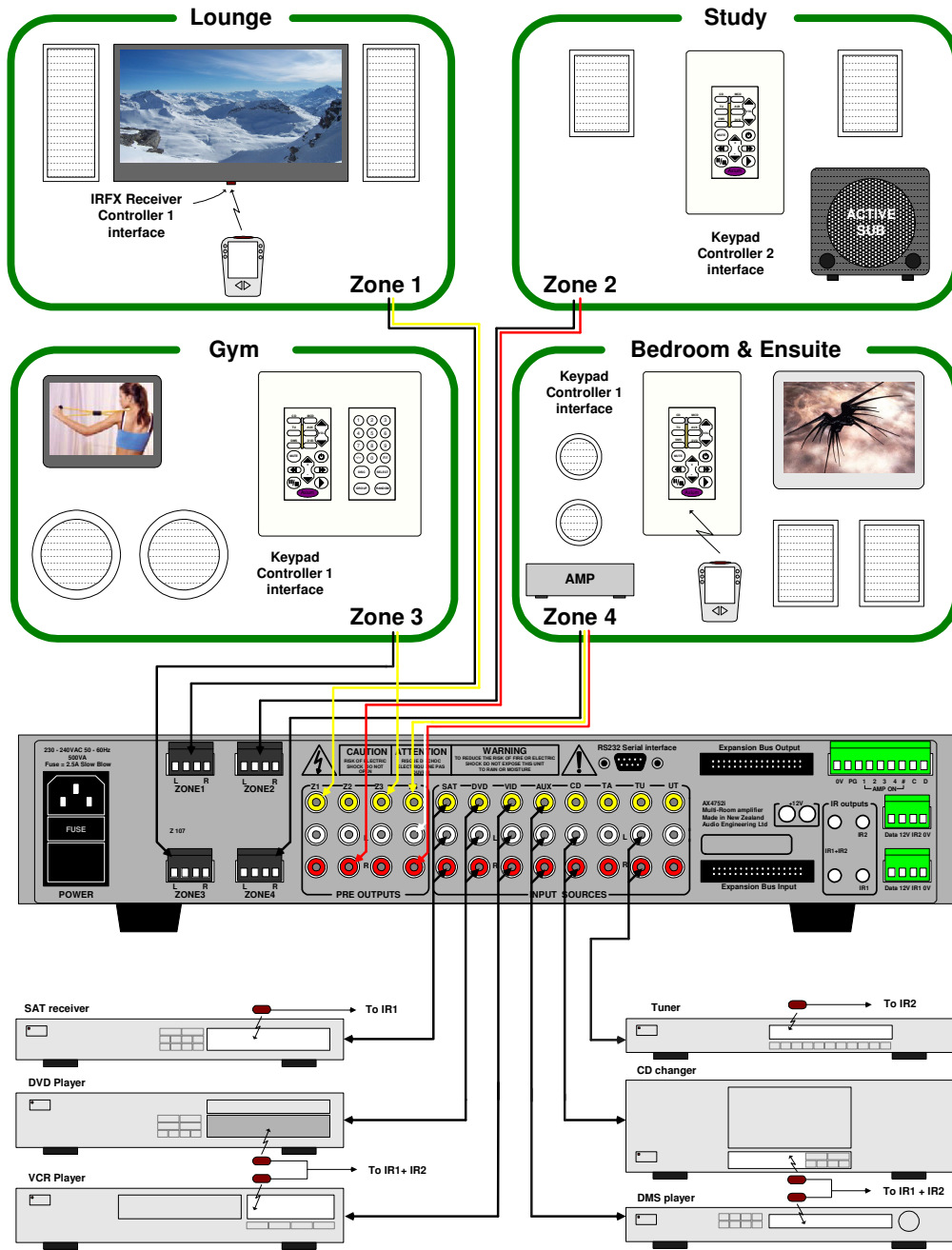


Fig 1

Typical System Configuration:

Fig 1 depicts a typical configuration, where the **AX4752** is providing audio into four listening zones. Each zone consists of a room with a pair of speakers, and a suitable controller. Additionally a zone may require TV's or screens. In Fig 1 three such screens are shown in the Lounge, Gym, and Bedroom. Each zone may be listening / watching any of the 6 connected sources: Satellite Receiver, DVD, Video, Digital Music Server, CD Changer, or Tuner.

Controllers:

Each zone has specific control requirements.

Zone 1 - The Lounge - The ideal control in the lounge environment is from the sofa or lounge suite.

The **IRFX** is a Plasma proof IR receiver, and is most suitable for IR reception from a learning remote control.

Zone 2 - The Study - This is a listening environment where remote controls are not welcome on the busy

desk. The best solution is a wall-mounted keypad. An Axium keypad displays amplifier power & source selection status. The keypad learns the source equipment IR commands, and relays these to the equipment via the **AX4752**.

Zone 3 - The Gym - A **KRXm** & the numeric **KRXs** keypad are used to provide additional access to the CD

changer, and SAT receiver. In addition the Keypads IR receiver is enabled so that changes can be made using a remote while working out.

Zone 4 - The Bedroom - The **KRXm** keypad is situated by the bedrooms adjoining ensuite and provides

control in that environment. The bedroom control is via the keypad's IR receiver and a learning remote control.

Source control IR emitters are plugged into the IR out ports.

There are two IR ports which combine both the controller inputs (IR1 + IR2) These outputs control sources required in all zones i.e. DVD, VCR, CD & DMS. Each controller interface has an associated IR Out port that routes IR only to that output. In Fig1 the SAT emitter is plugged into IR out port IR1, which means the zone 1, 3 & 4 controllers may control the SAT source. The Tuner emitter is plugged into IR Out port IR2, so only the zone 2 controller may control the Tuner.

Source Components:

The **AX4752** has RCA audio inputs for connecting seven stereo source components & one mono source. The Fig 1 configuration has only six of the possible eight sources populated.

Each zone may select from any of the connected sources. Someone in the lounge may be listening and viewing the DVD source, while another in the study may be listening to music from the Digital Music server.

All four zones may even select the same source, in such circumstances there is a possibility that all four zones may be trying to control that source - this is not always desirable - so a system should be well planned and where appropriate additional source equipment installed.

Speakers:

Speakers in each zone are connected to the **AX4752** by 'Home-Run' speaker cables.

Each zone has a maximum loading of 4 ohms.

Fig 1 depicts a powered subwoofer in the study. The subwoofer is driven by the zone 2 preamplifier, and is set to track the zone 2 amplifier volume. The subwoofer volume or offset can be adjusted for correct tonal balance.

Fig 1 additionally depicts a pair of speakers in the bedroom. These are the associated bedroom ensuite speakers and are driven by a low powered slave amplifier. The zone 4 preamplifier has been set to 'Independent' mode and connects to the low powered slave amplifier.

Independent mode is where the preamplifier volume may be different from the amplifier volume (within a range of 55dB), it also has independent Standby and Muting.

Suitable cable for Line level audio is RG59.

Video Outputs:

The composite video outputs are suitable for driving ONE composite video display device. To avoid signal degradation, home runs of Quad screen RG6 should be less than 100meters.

CONTROLLER TERMINATION

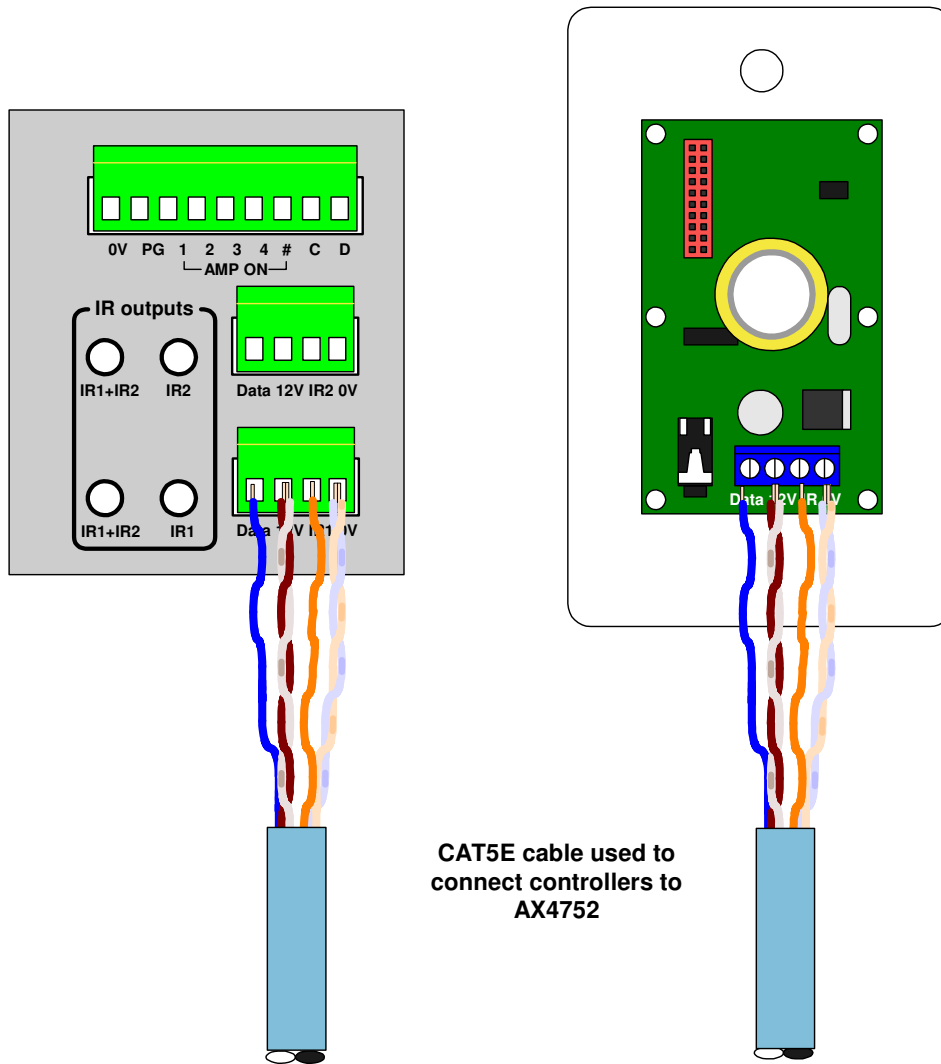


Fig 2

The recommended wiring and colour scheme is shown in Fig 2. Use home runs of Cat5E cable. The maximum recommended cable distance from the controller to AX4752 is 200m. When +12VDC is applied to the IRFX 'ON' terminal the receiver module's 'Ampon' indicator illuminates. The ON terminal should be terminated to the amplifier zone's 'Ampon' output not to the controller interface ports 'Data' terminal.

ADVANCED IR CONTROL

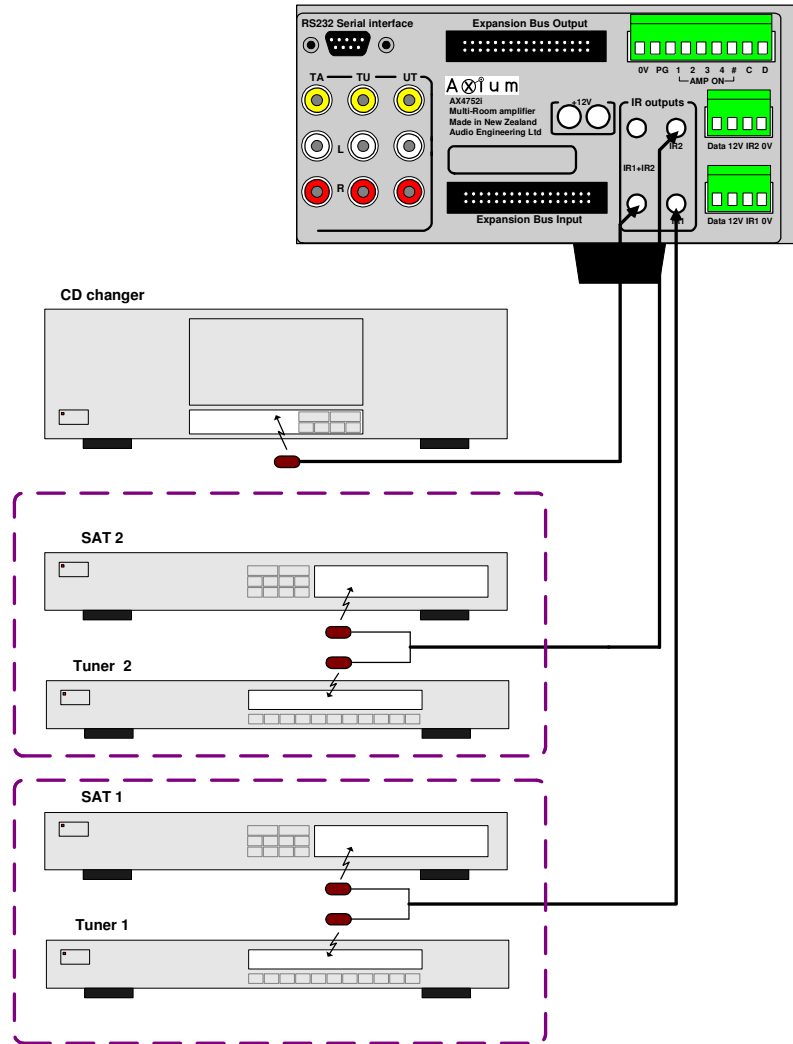


Fig 3

IR routing - discussed in 'Typical System Configuration' - is used to address specific centrally located source components.

When several same brand and model source components are required in an installation, steps must be taken to isolate the radiated IR from interfering with their discrete operation. This may be achieved either by installing them in different cupboards or by using black IR blocking foam tape over the IR emitters. The IR blocking foam tape is the preferred solution, since cupboard doors are often left open.

Fig 3 shows a typical installation where several SAT receivers and tuners are required.

The dashed lines enclosing the source components represent IR isolation.

The second identical sources may be plugged into unpopulated AX4752 inputs, i.e. Tape, and Aux.

Axiom controllers and sources may be re-labeled to identify their selection location.

Axiom also offers an Emitter Expander 'EX4'. This device simply provides connection for up to four single or Dual IR emitters, and may be wired in parallel with the controller interface.

MULTIPLE AX4752 STACKS

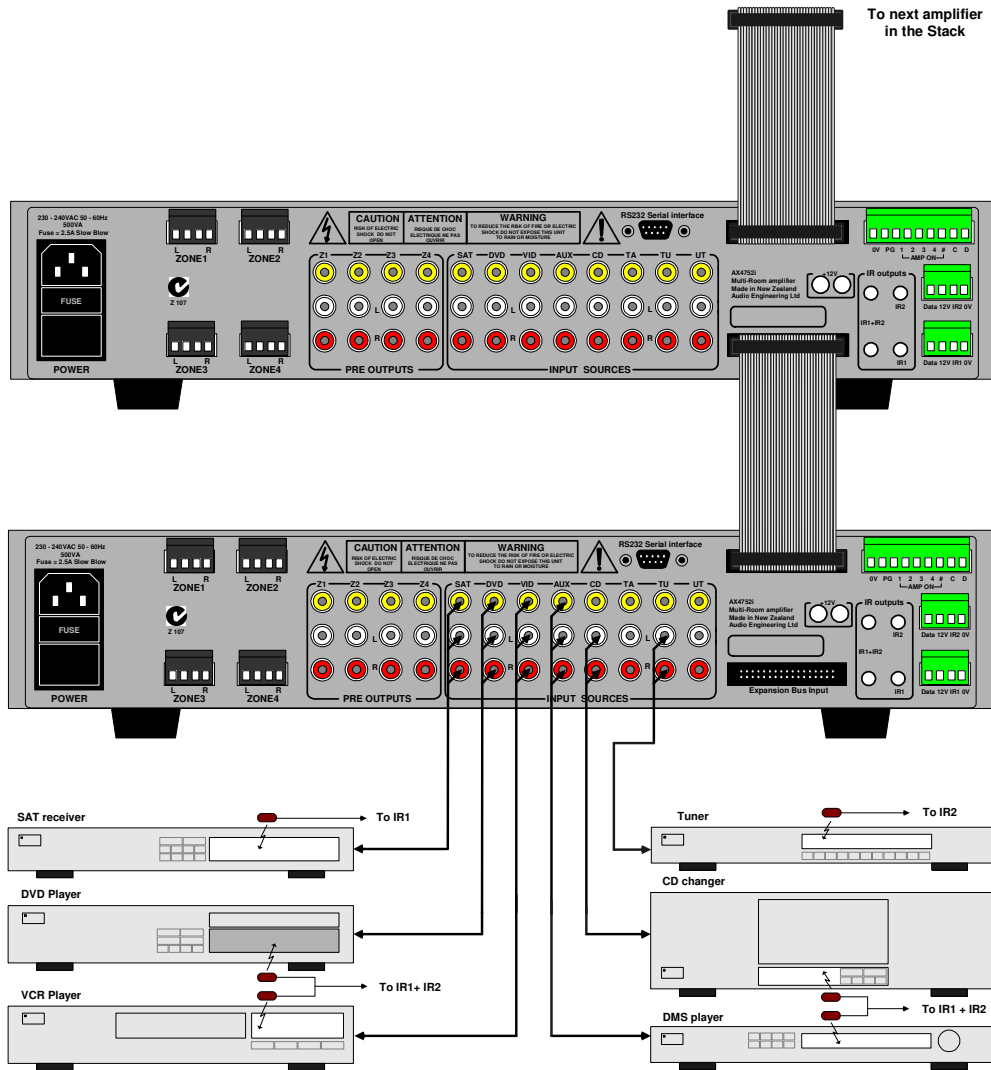


Fig 4

In large installations where multiple AX4752's are required, the expansion bus may be used to convey inter-amplifier control, source component Audio, and IR.

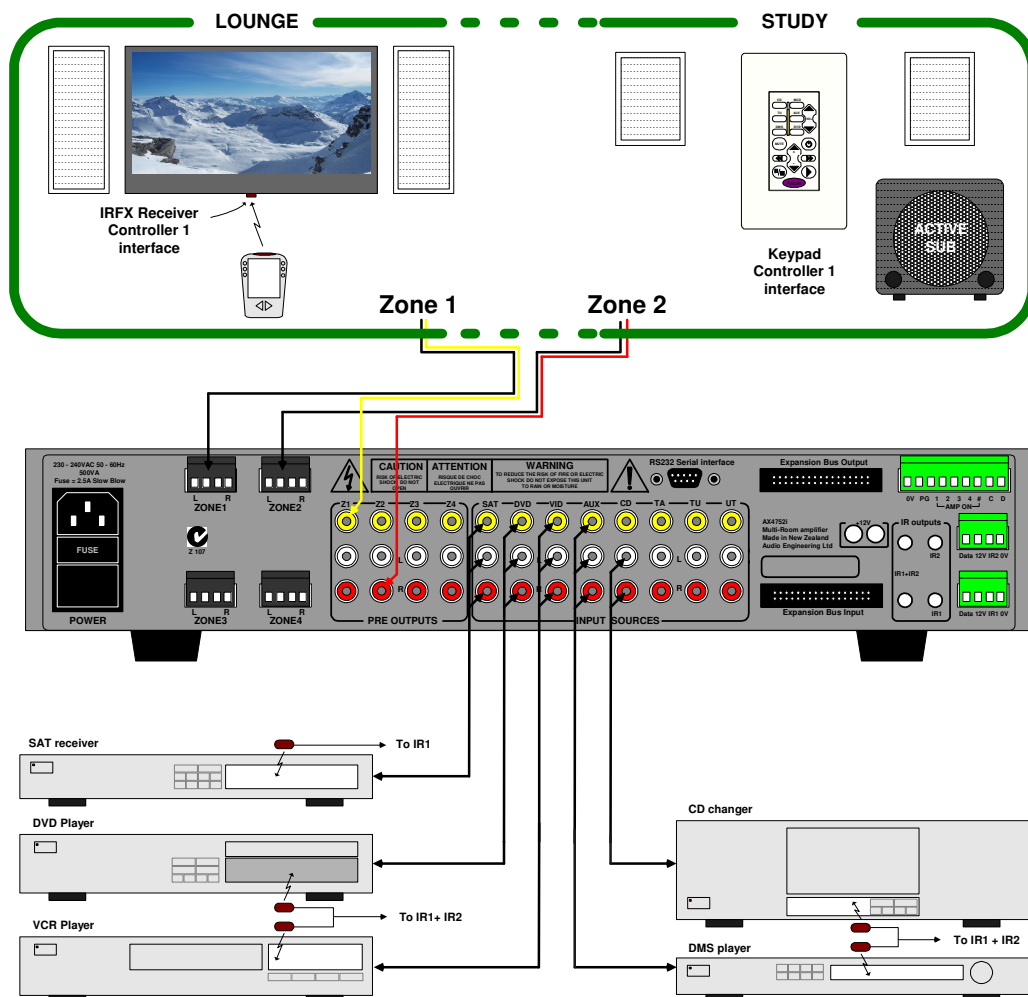
Fig 4 shows inter-connected amplifiers using an expansion bus lead. The source component audio inputs must be plugged into the first AX4752, where they are buffered and sent to the next amplifier in the stack. The maximum recommended expansion is eight units.

If connecting serial RS232 only one connection to any amplifier is necessary.

The composite video inputs are not conveyed through the expansion bus, so an external video buffer must be used to split the composite video sources to each AX4752.

ZONE LINKING

Fig 5



Zone linking is a useful feature for simplifying control in closely coupled rooms, where the rooms require different volume levels and ON /Off status, yet the same audio source. If for instance the Lounge and Study zones in the 'Typical System Configuration' were always used together on the same source, then zone linking could be used to simplify the control of the two otherwise separate zones. Zone 2 is simply linked to zone 1 either via the front panel user interface or AMC program. Once linked both zones will always select the same source whether controlled by the lounge remote control, or study keypad. It is possible to only link a pair of zones together, i.e. zone 1 linked to zone 2. On the same AX4752 it would be possible to also link zone 3 to zone 4. Options are also provided for Linking volume &/or standby via AMC.

AUTOMATION

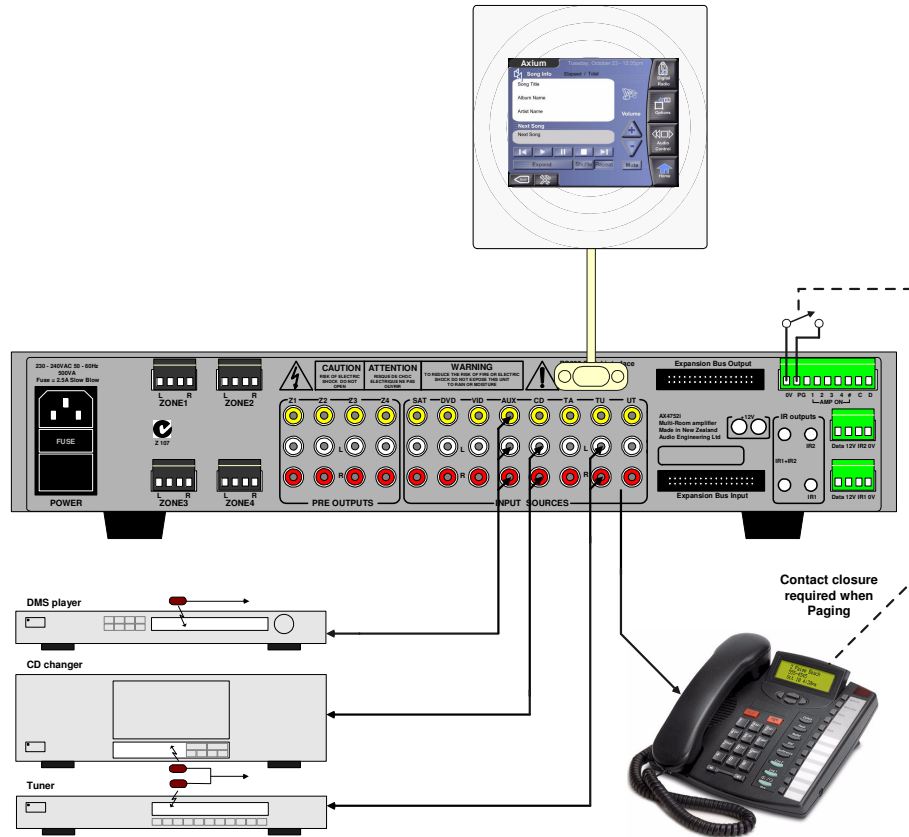


Fig 6

Any AX4752 parameter is controllable using the serial RS232 interface. The RS232 protocol is outlined in the following section, and encompasses both the amplifier and connected keypads. The interface is bi-directional, allowing the amplifier and network to be monitored.

The RS232 port connection must be made using a 'Null Modem' cable, where pin's 2 & 3 are swapped at one connector.

Fig 6 shows a typical touch panel controller providing the user interface to an AX4752. The controller has its own operating system that is programmed to handle the Axiom RS232 protocol. An automation system is not restricted to touch panels, it may be an extension of a home lighting, security, building management, or other specialized home automation system.

The 'Page Preset' is a special preset that is invoked whenever there is a contact closure across the 'PG' and 0V terminals. Each zone on the AX4752 may be set to a specific input (utility) and at specific volumes (depends on room & application). When the contact closure is opened the AX4752 returns to its previous states. The 'Page Preset' is useful for telephone paging, door & gate phone paging, or doorbell applications.

Axiom also offers a six-channel relay driver - REL6 - which may be encoded for up to 16 Zones of IR control. Typical REL6 applications are the control of curtains, screens, fan / fan speed, lights or other simple On / Off applications that require IR remote control.

RS232 PROTOCOL

The RS232 Asynchronous serial port provides data acquisition and control of Axium networks by a home automation system, or PC.

The lead must be 'Null modem' : 9 pin female 'D' connectors at both ends (pin connections 2 and 3 swapped at one end) Only RX , TX & 0V (pin 5) are used.

Baud Rate = 9600 , Characters are all ASCII.

Command Structure: <command><zone><data>line feed.

Command

Command	Description
01	Standby
02	Mute
03	Source Selection
04	Volume
05	Bass
06	Treble
07	Balance
08	Request Axium Bus protocol version
09	Send All parameters
0A	Report Error
0B	Cause key press on Keypad
0C	Amplifier features
0D	Maximum Volume Limit
0E	Preset Call
0F	Link Zone
10	Unsupported IR command received
11	Volume Up
12	Volume Down
13	Amp source – keypad bank assignment
14	Request Device information
15	Erase Memory
16	Request all IR function definitions
17	IR function Definition
18	Keypad Setup
19	Request Keypad setup
1A	Time
1B	Preset Schedule
1C	Zone Name
1D	Preamplifier Volume Mode
21	Request Amp Source – Keypad assignments
60 – 6F	User defined IR commands, no data byte
70 – 7F	User defined IR commands, one data byte

Zone Axium amplifiers and keypads are encoded with up to 32 zones

The zone byte is used for checking if the command is applicable to the device receiving the command and if so, for optionally selecting a “sub-device”, e.g. a bank or part of a device. The lower 5 bits of the zone byte is 00 - 1F for zones 1 to 32. The upper 3 bits represent the sub-device. FF means all zones and can be used for turning all amplifiers ON.

The sub-device codes for the AX4752 amplifier are as follows:

- 000 standard amplifier
- 001 page preset amplifier
- 010 standard preamplifier
- 011 page preset preamplifier

For example addressing a zone 10 preamplifier = (Binary 0101010, Hex = 2A) Send ASCII '2A'

Data

Command	Content
Standby	00 – Standby A OFF 01 – Standby A ON 02 – Standby B OFF 03 – Standby B ON 04 – Toggle standby A 05 – Toggle standby B 06 – Standby A & B OFF 07 – Standby A & B ON
Mute	00 – Mute 01 – Un-mute 02 – Toggle Mute
Source Selection	00 – Select CD 01 – Select Tape 02 – Select Tuner 03 – Select Auxiliary 04 – Select Mono utility input 05 – Select SAT 06 – Select DVD 07 – Select Video
Volume	00 – A0 range
Bass	F4 – 0C (-12db - +12db)
Treble	F4 – 0C (-12db - +12db)
Balance	EC – 14 (Left -20db – Right -20db)
Amplifier features	00 – Loudness enabled 01 – Loudness disabled
Volume Limit	00 – A0 range
Preset	00 – Standard mode 11 – Force Preset
Track Zone	00 – 31 zone to be tracked FF – for no zone tracking

Notes:

- Commands are used as notifications. If an amplifier is switched ON, it will notify the other devices on the Axium Bus by sending the Standby command (01). Any amplifiers with the same zone will take the notification as a command and also switch ON.
- When a command is sent to an amplifier it will first be transmitted on the Axium bus and then returned to the PC (Home automation system). If an error occurs an error will be returned instead of the original command. The PC (Home automation system) needs to ignore its command when it is returned.
- A Standby ON command implies that the amplifier is not muted, if the amplifier was previously OFF. A Mute command must follow the Standby command if it is muted.
- If on an **AX4752** two pairs of zones are linked i.e. zones 1 & 2 and zones 3 & 4, and a 'Link Zone' command is sent that links zones 2 & 3, then the receiving amplifier knows the following implications:
 - Zone 3 also links to zone 2
 - Since zone 3 is no longer linked to zone 4, zone 4 shall no longer be linked to zone 3
 - Since zone 2 is no longer linked to zone 1, zone 1 shall no longer be linked to zone 2

Example strings:

010A01 : Standby A ON command for zone 10 amplifier
 012A01 : Standby ON command for zone 10 preamplifier
 060002 : +2db Treble setting on zone 0
 031F02 : Tuner source selection on zone 31
 0B0311 : Volume down continuous push on zone 3 keypad

Keypad key codes

An Axium Keypad may be directed to emit its learnt IR commands via RS232 control. This is achieved by sending a 'Cause key press on Keypad' command, followed by the zone, and the Keypad key code (data).

The Keypad key code is encoded with IR string repeats. (See table below)

To terminate a continuously repeating 'Key press', command a **00** keypad key code must be sent.

Continuous	REPEATS							KEY
	1	2	3	4	5	6	7	
00	xx	xx	xx	xx	xx	xx	xx	Stops repeating the current key
01	21	41	61	81	A1	C1	E1	Aux
02	22	42	62	82	A2	C2	E2	Tuner
03	23	43	63	83	A3	C3	E3	CD Bank
04	24	44	64	84	A4	C4	E4	CD
05	25	45	65	85	A5	C5	E5	Vol Up
06	26	46	66	86	A6	C6	E6	Ch Up (2)
07	27	47	67	87	A7	C7	E7	Random (1)
08	28	48	68	88	A8	C8	E8	Play
09	29	49	69	89	A9	C9	E9	Power
0A	2A	4A	6A	8A	AA	CA	EA	+ Track skip (0)
0B	2B	4B	6B	8B	AB	CB	EB	- Track skip (9)
0C	2C	4C	6C	8C	AC	CC	EC	Disc skip
0D	2D	4D	6D	8D	AD	CD	ED	Mute
0E	2E	4E	6E	8E	AE	CE	EE	Fast Forward (8)
0F	2F	4F	6E	8F	AF	CF	EF	Rewind (7)
10	30	50	70	90	B0	D0	F0	Pause (6)
11	31	51	71	91	B1	D1	F1	Vol Down
12	32	52	72	92	B2	D2	F2	Ch Down (5)
13	33	53	73	93	B3	D3	F3	Band (4)
14	34	54	74	94	B4	D4	F4	Stop (3)

MENU NAVIGATION

Front Panel user interface:

The controller has a 2 line by 16 character alphanumeric display with a Rotary Encoder and integral push button (Enter key) on the knob shaft.

The AX4752 displays a hierachial menu for accessing and controlling all amplifier functions.

The user navigates through the menu using left / right rotations and Encoder Knob pushes for selections or escapes.

- **Firmware Display**

A blue rectangular display showing the text "Firmware V1" in white, sans-serif font.

The firmware version is displayed for two seconds during 'Power-Up'

Note: The firmware may be updated to the most recent version by using the Axium 'Up-loader 2' program - check with your dealer for this procedure.

- **System Settings**

A blue rectangular display showing the text "System Setup : Restore defaults" in white, sans-serif font.

Set Clock



The system settings menu is entered by pushing and holding the enter Key for > 10 seconds.

Rotating the encoder displays the next system set-up function in the list: Restore Defaults, Set Clock or Return icon.

- **Restore Defaults** : Pushing the enter key will clear the AX4752 memory deleting room names, linked Zones, maximum volume limits, bass, treble, balance adjustments, loudness settings, alarm clock programming, preset programming and zone assignments.

A blue rectangular display showing the text "System Setup : Set Clock" in white, sans-serif font.A blue rectangular display showing the text "System Setup : (13) :35 Fri" in white, sans-serif font.

- **Set Clock:** The clock is 24 Hour mode, and may be set by first adjusting the hours, then minutes, and finally the day - Pushing the enter Key at each setting. When the day is entered the menu escapes back to 'Set Clock'.
- **Return:** When entered returns to the 'Primary Functions' menu

- **Primary Functions Menu**

16:40 Lounge
|Off| ←

If the zone or room is OFF then the clock, zone or room name, power OFF and select room arrow are displayed.

Selection bars are shown surrounding the lounges OFF power status. Rotating the knob left or right shifts the selection bars, so that either the power status or select room arrow may be selected.

Pushing the enter Key when the power status is selected will turn the lounge amp ON and display further functions:

16:40 Lounge
On|Vol177|SAT ←→

16:40 Lounge
On(Vol177)SAT ←→

The volume, source selection and 'More functions' arrow are now displayed.

To adjust the volume move the selection bars to surround the volume status and push the enter key, the selection bars change to brackets - rotating the encoder knob now adjusts the volume. To escape the adjustment mode simply push the enter Key.

The AX4752 always returns to the last selected zone's volume status after 30 seconds of inactivity.

Functions:

- **Power:** On / Off
- **Volume:** 0 - 99.
- **Mute:** Long press (>2 seconds) when volume selected.
- **Source select:** CD, TU, TA, AUX, DVD, VID, SAT, UT
- **Left arrow:** Select Room
- **Right Arrow:** More Functions Menu

- **Select Room**

Select Room:
Z4 Amp:Bedroom

Z4 Pre:Ensuite
Z1 Amp:Lounge
Z1 Pre:
Z2 Amp:Study
Z2 Pre:
Z3 Amp:Gym
Z3 Pre:

The zone number and name (if named) are displayed. Rotating the encoder Knob displays the next in a list of eight possible room selections. Pressing the enter key selects the displayed room and then enters its primary function menu.

- **More Setup**

Function
Bass: 0dB

Treble : +2dB
Balance: 0dB
Loudness : Off
Max Volume : 99
Set Zone : 4
Name : Bedroom
Link Zone : none



Function
Bass: +4dB

Treble : 0dB
Balance: 0dB
Loudness : Off
Max Volume : 65
Set Zone : 4
Name : Ensuite
Link Zone : none
Preamp Volume



Selecting the right arrow in the primary function menu accesses 'More Setup' functions. The rotary encoder steps through the list of functions.

- **Bass:** \pm 12dB of adjustment.
- **Treble:** \pm 12dB of adjustment.
- **Balance:** - 20dB adjustment to the Left or Right.
- **Loudness:** ON or OFF - disabled when PRE is set to independent mode.
- **Max Volume:** May be set between the maximum of 99 and minimum of 20.
- **Set Zone:** Zone encoding 0 - 31, but not a zone occupied already on the AX4752.
- **Name:** Maximum of 10 characters, upper and lower case text.
- **Link Zone:** May be linked to any ONE zone.
- **Preamp Volume:** Only displayed if the room is a preamplifier. When selected there are two toggling options either independent or track.
- **Return:** When entered returns to the primary functions menu.

- **Protection Display**

Z1&Z2 Amps
Thermal Protect

If amplifier zones are shutdown because of temperature protection a message is displayed. The message is cleared when the enter Key is pressed, or when the temperatures normalise.

PROGRAMMING USING AMC

Overview;

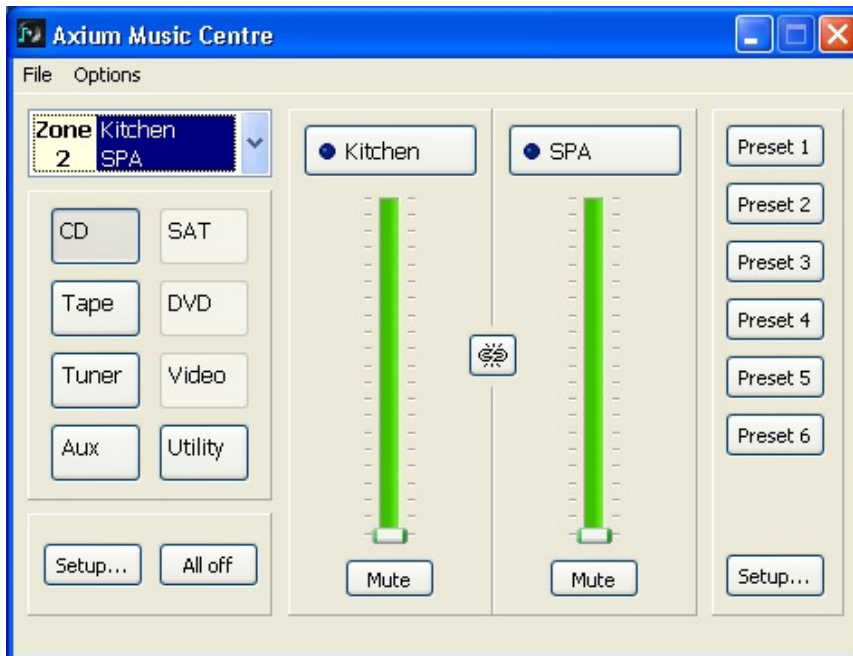
AMC is an amplifier setup utility program.

Full control and tracking of any Axium amplifier zone is provided.

The program runs on Win 2000, NT and XP operating systems, and communicates via either an RS232 serial or USB port.

When a PC running AMC is first attached to an AX4752 the amplifier clock is automatically set to the PC's current time and date.

An Axium Keypad connected to the AX4752 may also be controlled by AMC, in addition the keypad's programming file may be imported from AxiumIR (Keypad programming software) providing button ID's when the cursor is placed over button.



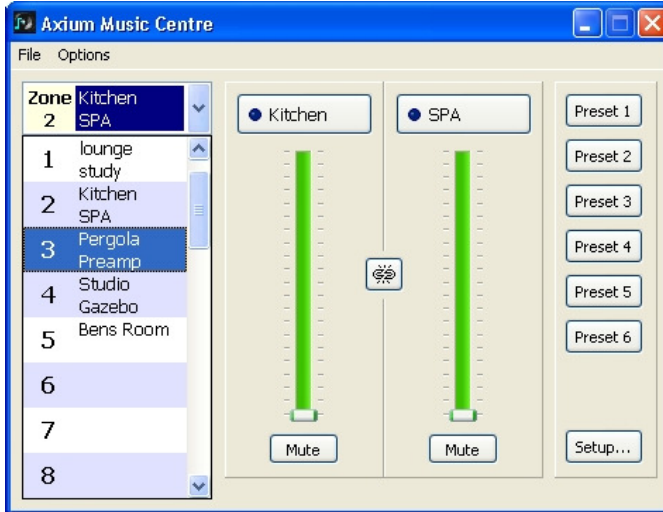
Main Window

AMC's main window provides most of the user functionality required for real-time access and control of any Axium AX4752 amplifier zone.

The file menu contains the 'New Window', 'Keypad Window', 'View Amplifier Log', 'Import Keypad File' and 'Exit' commands.

- **New Window:** Opens another instance of AMC's main window. This is useful for displaying and controlling multiple zones simultaneously.
- **Keypad Window:** A keypad window is displayed, and a user can cause the selected keypad on the Axium network to emit its stored IR strings.
- **View Amplifier Log:** Displays all historical over temperature events and the date and time they occurred
- **Import Keypad file:** When a relevant 'AxiumIR' keypad file is imported into AMC; popup information is displayed while the cursor is moved above the keypad's keys.
- **Exit:** Shuts down AMC.

The Option Menu contains the port assignments. The program lists the ports on the PC/ laptop.



Zone Select: To select the zone move the cursor over the zone tab's down arrow and left click. A zone

list window appears - make the selection with a left mouse click.

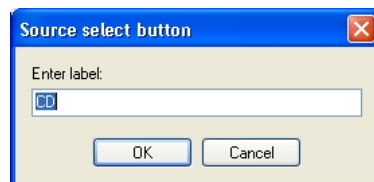
Placing the cursor over the zone tab's room description displays information about the amplifier's device ID / serial number.

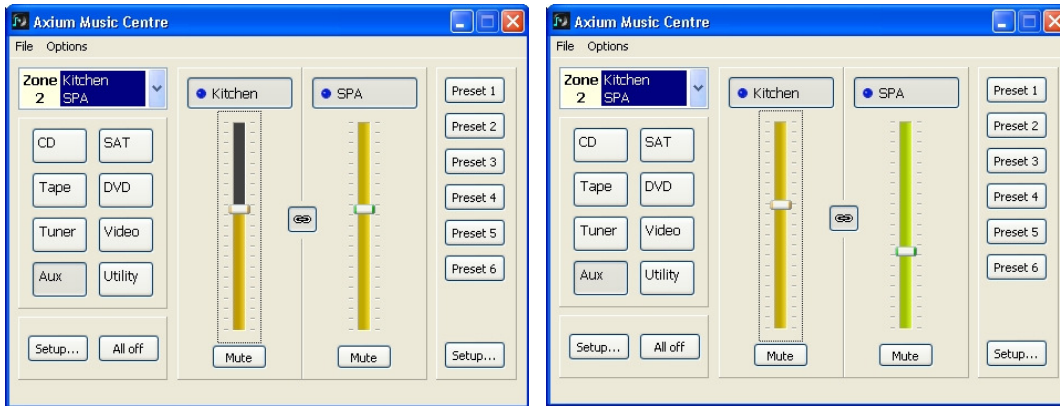
Zoned Functions:

- Standby:** On, Off control of the amplifier or preamplifier is achieved by a left click over the standby buttons. The blue LED and the button shading indicate 'On' status. The standby buttons may be named with the room name: A name edit window is opened by a right click over the standby button - Enter the new text. The room name is transferred to the **AX4752**, and also appears in the zone tab.



- Mute:** A left mouse click above the mute button mutes the amplifier or preamplifier, a further left click un-mutes it.
- Source Selects:** One of eight sources (CD, TU, TA, UT, SAT, DVD, VID & AUX) may be selected - the button shading indicates the selection. A source's name may be changed with a right click over the source select button: A name edit window appears and new text entered. The text appears only in the AMC's active zone and not on the **AX4752**.





- Volume Levels:** The volume sliders may be changed either by left clicks above or below the displayed level, or by dragging the level down using a left click and hold.
 Note: If the preamplifier is in 'Tracking' mode then changing one volume changes the other.
- Maximum Volume Limit:** The maximum volume limit is set firstly by identifying the slider with a left mouse click, then on the keyboard hold down the 'Shift' key and adjust the level using the 'Up' and 'Down' keys. The limit is indicated above the slider level by a black bar as shown above in the Kitchen's volume slider.
- Preamplifier Tracking / Independent Mode:** The chain link button between the volume sliders is used to toggle the preamplifier volume tracking mode. When the chain symbol is unbroken the preamplifier volume tracks the amplifier volume. An offset between the preamplifier and amplifier volume may be made by identifying the volume bar to be changed with a left click, then make the change on the keyboard by holding down the 'Ctrl' key and adjust the level using the 'Up' or 'Down' keys. *The zone 2 Main window above illustrates this and refers to the 'Typical System Configuration' on page 7. In this example zone 2's preamplifier drives an active subwoofer. The offset adjustment balances the Subs level in the listening environment.* When the chain link button is broken, the preamplifier is in 'Independent' mode. While in independent mode the preamplifier volume may be adjusted independently from the amplifier volume with one restriction: the maximum difference between the preamplifier and amplifier volume levels is < 68.
- All Off:** Left mouse clicks while over the 'All OFF' button turns OFF all AX4752 zones.
- Setup:** Opens the Setup Window giving access to the occasionally used functions.
- Preset 1 - 6:** Momentary Presets. These are used for creating scenes and alarm clock events
- Preset Setup:** Opens the Preset Setup Window where the alarm clock & presets are programmed.

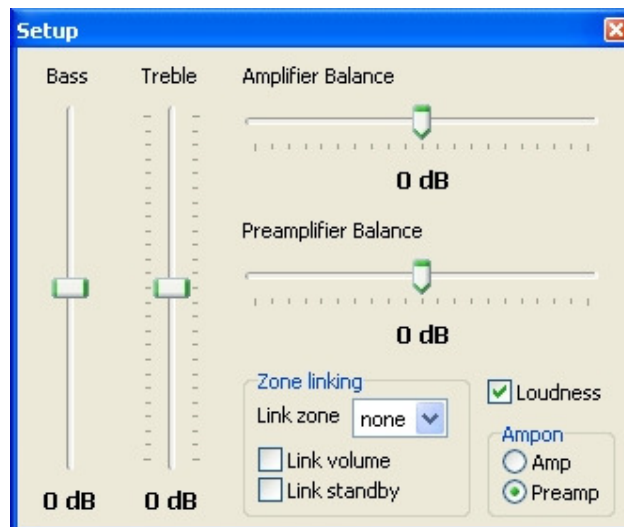
Setup Window

The window provides the means to control the occasionally used functions like bass, treble, amplifier and preamplifier balance and loudness. These are all adjusted using a left mouse click while above the button or slider.

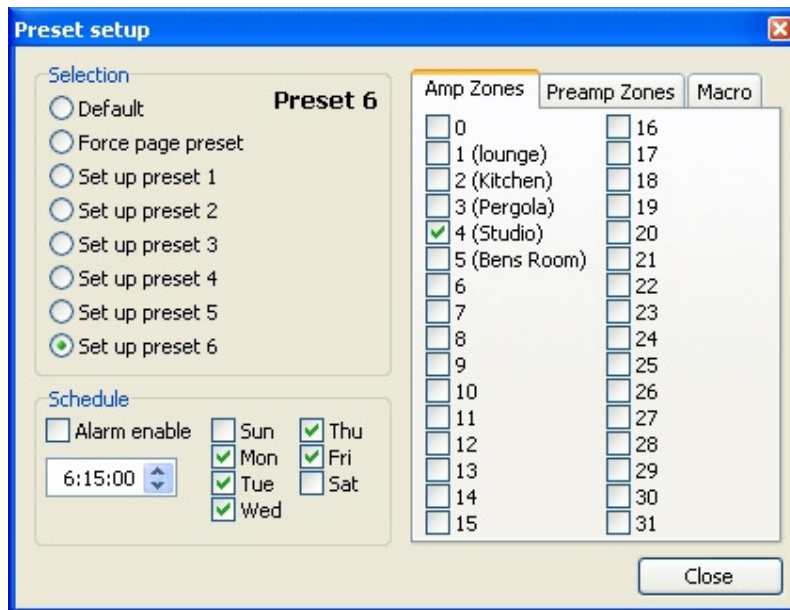
Note: The preamplifier and amplifier share the same bass & treble control.
Loudness is defeated when the preamplifier is set to 'Independent Mode'.

Any one zone may be linked to one other zone by left clicking the 'Link Zone' down arrow, and making the selection from the zone list. Linked zones have the same source selection. Volume and standby may also be linked using the 'Link Volume' & 'Link Standby' Tabs. If both volume and standby are selected then the two zones are fully linked and completely mimic each other.

The 'Ampon' output's on the **AX4752** default to tracking the preamplifier 'ON' status. However when in independent mode it may be useful for the 'Ampon' output to be assigned to the amplifier. Select using a left click on the Amp tab.



Preset Setup Window



Preset Programming: Preset programming effects all zones on the **AX4752**. There are six momentary preset buttons - Preset 1 - Preset 6. These presets are stored in the **AX4752**, and may be setup using the AMC setup window.

Left mouse click over 'Set up preset 1' and change any **AX4752** function i.e. On status, volume level, source selection, even bass, treble etc. If Preset 1 is required to effect changes to the other zones on the **AX4752**, then either change the main window's zone or open other AMC main window instances and make the required changes, then left click over the 'Default' selection to exit. Preset 1 is now programmed and will be set to the programmed preset states whenever the **AX4752** receives the preset 1 IR control string, or RS232 command.

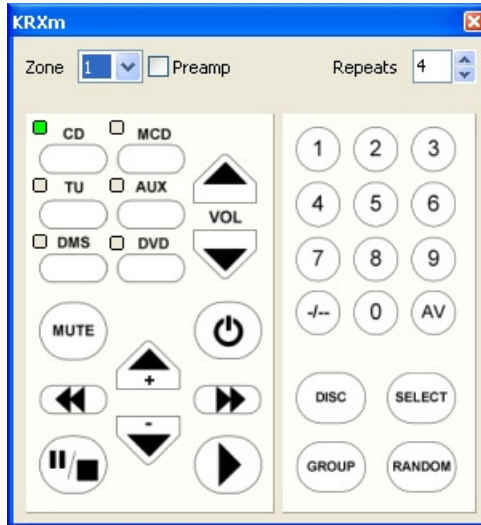
The process is the same for all other presets.

Force page preset is used to program the page preset. When selected changes made to the zone functions and levels are programmed. To exit the 'Force page preset' select 'Default'.

Whenever a contact across the PG & 0V terminal is closed the **AX4752** will go to the programmed states, and when the contact opens the amplifier reverts to its previous settings.

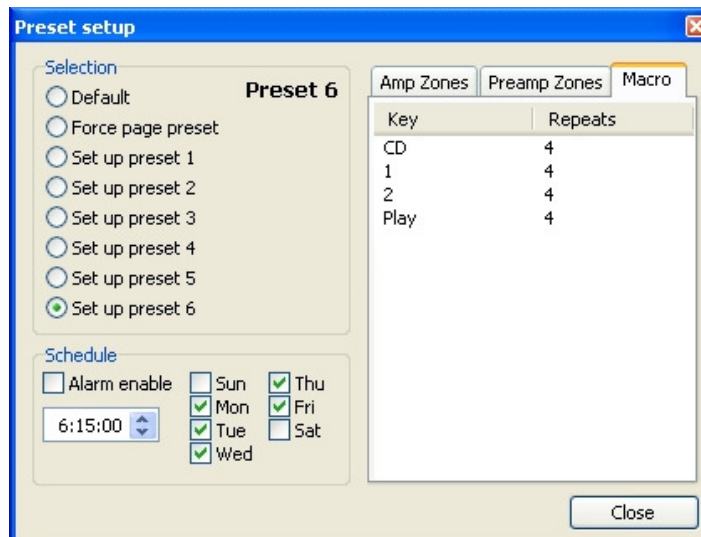
Alarm Clock programming: An alarm clock event may be included in a preset. It utilizes the Preset schedule panel. As shown above the working days Monday - Friday are selected and time set @ 6:15am. The preset 6 command will then be invoked at 6:15 in the morning Monday - Friday. IR commands are available to disable the alarm clock functions. To turn the alarm clock off select 'Setup Preset 1' and in the Preset Schedule panel left mouse click over the 'Clear' button.

Source Control Alarm Clock programming: If a KRXm Axium keypad is connected to the AX4752, then source control can also be included in an alarm preset. Open a KRXm keypad Window and select the attached Keypad's zone. it can be made to send it's source control commands



In the preset setup window select 'Macro'. Using the mouse with left clicks select the Keypad functions required; i.e. 'CD select', '1', '2', 'Play'. The above sequence is entered into the macro window. Exit the 'Set up Preset 6' by selecting 'Default'.

The Axium System is now programmed to Select the CD source, and Play Disc 12 on the CD player @ 6:15am Monday through to Friday.



SPECIFICATIONS

AUDIO

- Preamplifier Gain (max: Vol = 99).....+15dB
- Input Impedance22K Ω
- Output Power.....50 Watts RMS @ 4 - 8 Ω
- Signal - Noise>92dB A weighted
- THD (1VRMS input, Gv = 0dB).....0.05%
- Channel Separation (Gv = 0dB; f=1KHz).....>95dB
- Frequency Response30Hz to 50KHz \pm 3dB
- Bass Control Range (fl = 40Hz)..... \pm 12dB, 2dB steps
- Treble Control Range (fh = 16KHz)..... \pm 12dB, 2dB steps
- Loudness Boost (fb = 40Hz).....+16dB when Vol = 20, 0dB when Vol = 60
- Balance Control Range.....-20dB in 2 dB steps
- Maximum Volume Limit Range.....Vol : 20 - 99

VIDEO

- Input /Output Impedance.....75 Ω
- Video Bandwidth.....50Hz to 12MHz, -3dB
- Cross-talk between channels.....typically > 70dB

INFRA-RED RECEIVERS

- Control Receiver Modulation frequency38KHz
- Control Receiver Range>8m \pm 30° off axis

GENERAL

- Controller Interface +12VDC Outputs..Maximum of 4 controllers/ Output or 0.4A Load
- Amp-ON Outputs (1,2,3,4 and #).....+12VDC 300mA max
- Power Requirements (Australasian Model)240V~ 50Hz 500VA max
(US, Canada Model)115V~ 60HZ, 500VA max
- Dimensions435mm (17") Wide, 104mm (4") High, 310mm (12¼") Deep
- Weight.....10.8Kg
- Box Dimensions.....525mm (20½") Wide, 180mm (7") High, 410mm (16") Deep