

CAUTION

M2 Integrated Amplifier

AC MAINS SUPPLY

Your M2 Integrated Amplifier is set to operate from a fixed supply voltage which is marked on a label next to the mains input plug. Before connecting the mains lead please check that your mains supply corresponds to this label as below:

230V Products	Voltage Range: 220V – 240V
115V Products	Voltage Range: 100V – 120V
100V Products	Voltage Range: 90V – 110V

The mains lead supplied with this product has an IEC socket which plugs into the IEC connector on the unit's rear panel. The other end is normally attached to the appropriate mains plug for your country. In the UK this is the standard UK10A plug.

This plug should ordinarily not be removed from the lead. If you do remove it, please dispose of it safely so that it cannot be plugged into a mains socket whilst in a potentially dangerous condition. We suggest that you obtain from your dealer a complete replacement lead.

Should you move to another area where either the mains voltage or the mains plugs are different from those as supplied with your Integrated Amplifier, please contact the appointed ROKSAN distributor for assistance.

Please observe correct mains polarity at all times.

The Integrated Amplifier mains fuses are located on the rear panel next to the IEC mains connector. These must only be replaced by the fuse type and rating as described on the fuse rating label on the rear panel of the unit.

If the equipment is likely to be unused for some time, unplug it from the mains supply.

GENERAL CAUTIONS

FCC WARNING

This equipment may generate or use Radio Frequency energy. The user may lose the right to operate this equipment if unauthorised modifications are made.

INTERFERENCE

Properly installed, this unit should not cause harmful interference to radio communications. There is, however, no guarantee that such interference will not occur in a specific installation. If interference arises (which you can determine by switching the unit off and on) you could try to remedy this problem by the following:

- Re-orient or re-locate the receiving antenna
- Increase the distance between the Integrated Amplifier and receiver
- Connect the unit to a different mains circuit from that of the receiver
- Consult your ROKSAN appointed dealer or an experienced Radio/TV technician for help and advice

LOCATION

Your M2 Integrated Amplifier should be located in a well ventilated area and kept away from sources of heat, dust, humidity and direct sunlight.

The Integrated Amplifier may be positioned either as a free standing unit or alongside another audio/video product. Never place the Integrated Amplifier on carpet or any surface likely to hinder normal ventilation. Never allow liquids or other objects to fall into the unit.

This unit contains no user serviceable parts. **Do Not remove any panels or attempt to service it yourself. Unauthorised servicing will void the warranty.**

INSTALLATION

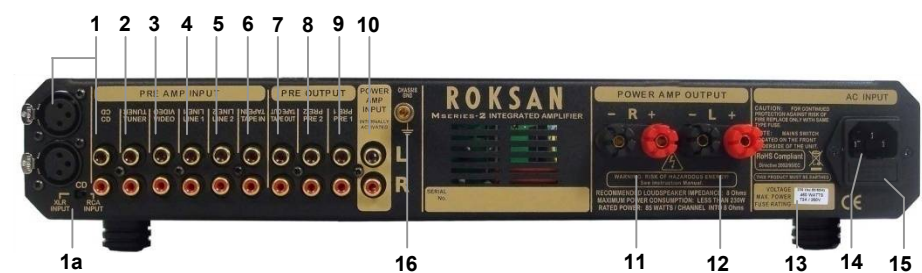
M2 Integrated Amplifier

ROKSAN M2 Integrated Amplifier- Front Panel View



- | | |
|--------------------------|---------------------------|
| 1. Input Selector | 7. Line 1 Input Indicator |
| 2. Mode Button | 8. Line 2 Input Indicator |
| 3. Mode Indicator | 9. Tape Monitor Indicator |
| 4. CD Input Indicator | 10. Tape Monitor Button |
| 5. Tuner Input Indicator | 11. Volume Control |
| 6. Video Input Indicator | 12. AC Mains Switch |

ROKSAN M2 Integrated Amplifier- Rear Panel View



- | | |
|--|---|
| 1. CD Input (RCA or balanced XLR; selectable with Switch 1a) | 9. PRE 1 Output (Multi-Amping or Subwoofer) |
| 2. TUNER Input | 10. POWER AMP Input (Requires internal work for activation) |
| 3. VIDEO Input | 11. Right Speaker Output Terminal |
| 4. LINE 1 Input | 12. Left Speaker Output Terminal |
| 5. LINE 2 Input | 13. Voltage & Fuse Label |
| 6. TAPE Input | 14. AC Mains Input |
| 7. TAPE Output | 15. AC Mains Fuseholder |
| 8. PRE 2 Output (Multi-Amping or Subwoofer) | 16. Chassis Ground Terminal |

SETUP

M2 Integrated Amplifier

CONNECTING MAINS POWER

Please refer to front & rear panel view on Page 2. The moulded IEC connector of the supplied mains lead should be plugged into the socket (14) on the rear of the unit first and then plugged into the mains supply. The Mains power switch (12) is on the left front underside of the Integrated Amplifier. This switch can be left on; if however the amplifier is likely to be unattended for a long period, switch it off and unplug the mains lead from the wall.

SIGNAL CONNECTIONS

Signal Input connections:

There are five Inputs (1 – 5) on your M2 Integrated Amplifier in addition to the Tape Input (6). All these inputs are line level inputs and will accept virtually all currently available source components.

All the inputs use gold plated RCA Phono Connectors (CD input is switchable via Switch 1a to gold plated Balanced XLR) and should be connected according to the standard convention – Right Channel – Red; Left Channel – Black or White.

Also in accordance with standard practice, the Upper row of Phono Sockets carries the Left Channel and the Lower carries the Right Channel.

The Input Sockets are labelled with their legends upside down as well as the normal way round to assist you should you be connecting an input from a position in front of and above the amplifier.

Phono Input Connections:

As your M2 Integrated Amplifier is a line level unit you cannot connect a phono cartridge directly to it but will need a dedicated phono preamplifier. The ROKSAN range of Phono Amplifiers accept conventional moving coil and moving magnet cartridges and have custom equalisation for the outstanding ROKSAN Shiraz cartridge. For a demonstration of ROKSAN state of the art turntable reproduction contact your authorised retailer.

IMPORTANT NOTE: For optimum performance it is recommended to use high quality inter-connect cables such as ROKSAN HDC-02A high definition analogue cable.

LOUDSPEAKER CONNECTIONS

The right and left loudspeakers are connected to the amplifier via the rear panel binding posts (11) and (12) respectively. There are two basic types of cable –

- **Figure 8 cable** has two insulated conductors which lie parallel, either side by side, or spaced by insulation.
- **Overall sheathed cable** has both conductors insulated and enclosed in an overall plastic sheath.

Carefully remove any overall sheath or split the figure 8 cable to a depth of about 75mm (3"). Carefully strip the insulation on each wire to a depth of about 12mm (1/2") exposing the bare core. If the conductor is stranded, twist the strands together on each conductor.

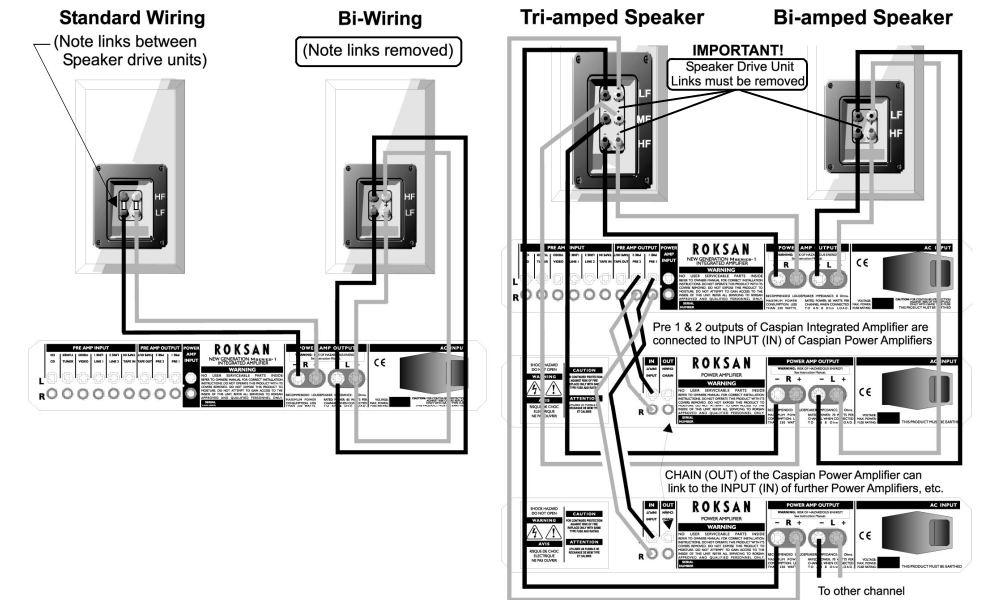
Unscrew the binding post. There is a cross-hole about 5mm from the panel end of the binding post. Insert the bared conductor through the hole and tighten the binding post securely making sure that there are no loose strands or bare ends protruding through the post. Carefully observe polarity ensuring that the RED (+) speaker terminal is connected to the RED (+) amplifier terminal and the BLACK (-) speaker terminal to the BLACK (-) amplifier terminal. When both left and right channels are connected to their respective speakers the amplifier is ready for use.

IMPORTANT NOTE: For optimum performance it is recommended to use high quality cables such as ROKSAN HDC-02S high definition Loudspeaker Cable. Many speaker cables such as the ROKSAN HDC-02S are directional. Please observe this directionality. DO NOT use speaker cable with conductor size less than 16 AWG (1.6mm Diameter). The Binding posts accept conductor sizes up to 12 AWG.

MULTI-WIRING AND MULTI-AMPING

Multi-Amping The Loudspeake

If the Loudspeakers utilise more than one drive unit with individual input terminals, for example a Tweeter and a Woofer, then the loudspeaker performance will benefit from Bi-Amping. Dedicating one amplifier to the Tweeter and another to the Woofer isolates them from each other reducing distortion and increasing reserved power. Speakers work far better with most amplifiers when Multi-Amped than using one yet more powerful amplifier. *Note: Bi-Wiring reduces the impedance seen by the Woofer and the Tweeter and is a first step towards Bi-Amping.*



Please refer to the front and rear panel views on page 2.

SWITCHING ON

The Mains power switch (12) is on the left front underside of the Integrated Amplifier. This switch should be left ON for normal operation. If unattended for a long period, the Mains power should be switched OFF and the lead disconnected from the power supply. When switched ON your M2 Integrated Amplifier runs a self-test and the amplifier enters WARM-UP mode and the MODE indicator light (3) will glow GREEN. The amplifier is now ready for use.

You can activate your M2 Integrated Amplifier in two ways:

- 1 Press the MODE button (2) once.
 - 2 Rotate the INPUT selector (1) in either direction by one step.
- NOTE:** Only the Power Button on the remote handset activates/de-activates the amplifier. Please note the remote handset MODE button only activates/de-activates -20dB Mute (see below)

Once the M2 is On the MODE indicator light (3) will glow RED. The amplifier will automatically select the CD input and the CD input indicator light (4) will glow.

USING THE CONTROLS

MODE CONTROL

The MODE button on the Front Panel has the following functions:

- It activates the amplifier from Warm-up.
- Pressing the MODE button once with the amplifier activated will mute the volume level by 20dB. The MODE indicator light will glow ORANGE. The amplifier remains fully functional in this mode. Another single press un-mutes the amplifier and the MODE indicator light will revert to RED.
- With the amplifier activated, a sustained press on the MODE button reverts the amplifier to Warm-up, all the input indicator lights will be extinguished and the MODE indicator light will glow GREEN.

NOTE: When you bring the M2 out of WARM-UP having switched it ON at the Mains, the input selector will default to CD (as described previously). When, however, the M2 has been put into Warm-up from the MODE button on the front panel, bringing it out of Warm-up will restore previously selected input, tape and mute values. Bringing the M2 out of Warm-up by moving the INPUT Selector one step in either direction also leaves these amplifier settings unaffected.

INPUT SELECTOR SWITCH

The INPUT Selector is an endless rotary switch that moves round one click at a time. It connects each signal source to the amplifier by rotating through the Inputs with the exception of TAPE. Rotating the Selector continuously clockwise will select inputs in this sequence:

CD – TUNER – VIDEO – LINE1 – LINE2 – CD - ...

Rotating the Selector anti-clockwise reverses the sequence. Whenever an input is selected the appropriate indicator light will glow.

VOLUME CONTROL

The VOLUME Control is a precision device. It follows a logarithmic law so that its response approximates that of the human ear. There is an illuminated indicator on the volume control to clearly show the appropriate volume setting.

TAPE MONITOR

When you select an input source, the INPUT Selector connects the selected source to the amplifier and connects this source to the Tape Output Sockets of the Caspian thus enabling you to record.

The Tape Monitor is an override. Pressing the TAPE Button (10) connects the output of your tape deck to the M2, overriding the selected input. However, the selected input is left connected to the recording input of your tape deck. If you have a suitable tape deck, this facility enables you to record a programme whilst monitoring its playback.

When the TAPE Button is depressed, the TAPE Indicator light glows and the selected source Indicator remains illuminated.

The input selector remains functional when the Tape Monitor is ON, allowing a range of sources to be recorded.

Pressing the TAPE Button, toggles between Tape Monitor ON and OFF.

In Multi Room or Installations where the front display is not seen, direct input access for CD, Tuner, Video, Line1 & Line2 can be achieved by programming direct access codes (For assistance contact Roksan).

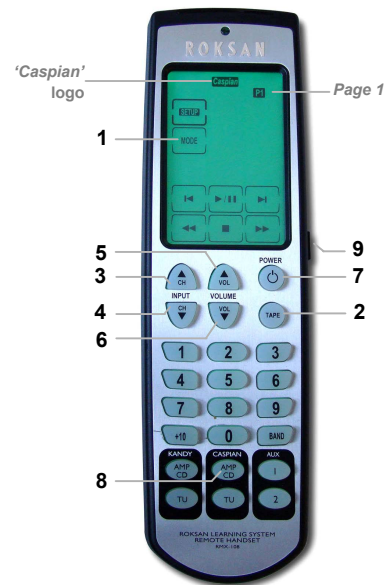
REMOTE CONTROL

M2 Integrated Amplifier

REMOTE HANDSET

The M2 Integrated Amplifier is supplied with Roksan's programmable, learning remote handset (RMX-108).

Carefully remove the battery compartment cover and insert the batteries in place observing **polarity**. Replace the cover. The handset is now ready for use. The handset duplicates the front panel controls of the Integrated Amplifier.



- 1 MODE
 - 2 TAPE
 - 3 INPUT FORWARD
 - 4 INPUT BACK
 - 5 VOLUME UP
 - 6 VOLUME DOWN
 - 7 POWER
 - 8 Caspian AMP/CD (P1 & P2)
 - 9 BACK LIGHT
- DO NOT** use the 'SETUP' button unless when programming or changing handset functions. For programming refer to RMX-108 manual.

NOTE:

The LCD display & the hand set will turn on as soon as the batteries are inserted. If the handset is left untouched for 90 seconds, it will automatically turn off the LCD to save battery life. The handset is equipped with a motion sensor and thus will 'wake up' as soon as it is picked up.

The Back Light will only come on when the back light button is pressed and will stay on during operation. Back light will turn off automatically after 10 seconds if none of the buttons are pressed.

8 The Caspian 'AMP/CD' Button (8) selects Caspian CD and Integrated devices ('Caspian' logo on LCD). This button toggles between Page1 & Page2 of the LCD display for the CD remote functions.

9 The BACK LIGHT Button (9) turns on the handset buttons and LCD display illumination.

KNOW YOUR CASPIAN

- When you first power up from the Mains Switch the amplifier goes into Warm-up and the MODE Indicator glows GREEN.
- During Warm-up, the power stage of the amplifier shuts down to reduce power consumption and heat.
- If the amplifier heat-sink temperature rises above 55 °C the internal fan will activate to keep heat-sink temperature constant. If the output level is reduced the fan will continue for approximately 45 seconds and will switch off once the temperature has lowered.
- If for any reason the amplifier overheats through overload or lack of ventilation, the M2 will revert to Warm-up mode for protection.
- If the output is accidentally shorted the M2 will revert to Warm-up. You can manually activate amplifier after the short/fault has been eradicated.

In the unlikely event of an internal fault such as a power supply failure, the MODE Indicator light will glow GREEN and the amplifier will shut down. If the fault persists, the M2 will stay in Warm-up/Protection mode.

TROUBLESHOOTING

M2 Integrated Amplifier

If you suspect that your ROKSAN M2 Integrated Amplifier is not operating properly, you should check all the connections carefully. Pay particular attention to speaker phasing and channel connections. Phono plugs should be fully inserted- a frequent cause of problems is that Phono plug surrounds do not make proper contact. Below are some commonly encountered problems with suggestions for possible cure. The list is not exhaustive: If you have any unresolved problems, please consult your appointed ROKSAN dealer or distributor.

SYMPTOM	LIKELY CAUSE	SUGGESTED REMEDY
No power	AC Mains lead not inserted properly Unit not switched on at front	Ensure AC Mains lead is fully inserted Switch unit on at front left underside
No output on one or both channels	Amplifier in stand-by mode (MODE light GREEN) Missing or bad input signal connection Incorrect speaker connection Wrong input selected Tape Monitor selected Over heating	Press MODE button on front panel to set amplifier in operational mode (MODE light RED) Check all input connections Check speaker output connections on rear panel Select correct input, ascertain source is working Deselect Tape Monitor Allow amplifier to cool, increase ventilation or use at lower volume Deselect MUTE (check volume setting first)
Very low sound output	Amplifier set in MUTE position	Deselect MUTE (check volume setting first)
CD input has no sound	CD RCA/XLR switch in wrong position	Switch to RCA or XLR as appropriate
Poor speaker imaging, lack of Bass output	Loudspeakers connected out of phase	Check polarity of speaker connections (especially important if Multi-wiring, Multi-Amplifying)
Hum from speakers	Incorrect Grounding	Check Mains polarity and grounding on all connected equipment

GUARANTEE

M2 Integrated Amplifier

There are no user-serviceable parts inside your Caspian M2 Integrated Amplifier. If a fault should develop, refer any servicing to your appointed ROKSAN dealer, distributor or ROKSAN approved service agent.

Your ROKSAN Caspian M2 Integrated Amplifier is guaranteed against any defect in materials and workmanship for a period of **five years** from the date of purchase. This guarantee only becomes effective if the warranty card is validated by the ROKSAN retailer from whom the equipment was purchased and returned to ROKSAN within **28 days** of purchase. This guarantee excludes:

1. Damage caused due to accident, misuse, neglect and incorrect installation, adjustment or repair.
2. Liability for damage or loss during transit from the retailer or purchaser to ROKSAN or its authorised distributor for the purposes of repair or inspection.

This guarantee excludes:

Carriage costs to ROKSAN shall be borne by the consignor.

All claims under this guarantee must be made through an authorised ROKSAN retailer.

If equipment returned for repair to ROKSAN is found on inspection to comply with the product specification ROKSAN reserves the right to make a charge for examination and return carriage. **Unauthorised servicing will void this guarantee.**



SPECIFICATION

M2 Integrated Amplifier

Inputs	5 Line & Tape RCA Gold plated CD Input also switchable to XLR Balanced Gold plated
Input Impedance	47 kΩ
Input Sensitivity (85W)	Line 240mV
Outputs	Gold plated RCA Tape & 2 Preamplifier
Output Voltage	240mV (Tape Out) 700mV (Pre Out)
Power Outputs	Loudspeaker, L & R
Output Power	85 Watts, into 8Ω both channels driven 125 Watts, into 4Ω both channels driven
Power Supply	350VA Ultra Low Noise Toroidal Transformer 60VA Ultra Low Noise Transformer Preamp Section Toroidal 5 Regulated Supply Rails
Current Output	60 Amps Peak to Peak
Damping Factor	160 (8Ω)
Frequency response	-3dB, <1Hz – 90kHz
Gain	40dB Overall (Pre & Power) 9.3dB Preamplifier 30.7dB Power Amplifier
Harmonic Distortion	0.002% 1kHz, 0.015% 20kHz 10W - 8Ω 0.0025% 1kHz, 0.03% 20kHz 50W - 8Ω
Signal to Noise Ratio	Line 108dBa (ref. 500mV) 85dBa (ref. 1W, 8Ω)
Power Source	100V – 120V 50Hz / 60Hz 220V – 240V 50Hz / 60Hz (via Mains inlet filter)
Power Consumption	< 230 W
Dimension	432 x 330 x 70 (W x D x H) mm 432 x 330 x 80 (including feet)
Weight	13 Kg

ROKSAN

Caspian M2 Integrated Amplifier User Manual



Roksan Audio Limited
Jubilee Close Townsend Lane
London NW9 8TR England UK

TEL. +44 (0)20 8900 6801 FAX. +44 (0)20 8205 2644
www.roksan.co.uk email info@roksan.co.uk

INTRODUCTION

M2 Integrated Amplifier

Congratulations on your purchase of the ROKSAN M2 Integrated Amplifier. This amplifier is designed and manufactured to the highest specification and rigorously tested to offer you many years of trouble-free pleasure.

Your M2 Integrated Amplifier is the heart of your hi-fi system. Its correct installation, set-up and operation will have a profound influence on the sonic performance of the entire hi-fi installation.

Please read the contents of this manual thoroughly. It will help you to understand your hi-fi equipment better and enhance your listening pleasure.

This manual is divided into the following sections:

- Safety Instructions (*Accompanying card*)
- Introduction
- Cautions
- Installation
- Setup
- Operation
- Troubleshooting
- Guarantee
- Notes
- Specifications

UNPACKING

Included in the packing of your M2 Integrated Amplifier you will find:

- One mains lead fitted with the correct mains power plug for your country
- One Roksan learning system remote handset (RMX-108) and x4 AAA batteries
- One information pack and warranty card

After removing these items please retain **all** packing materials. Correct packing is necessary for transportation of your M2 Integrated Amplifier.

MAINTENANCE

After disconnecting the amplifier from the mains supply, the cabinet and front panel may be cleaned with a lightly dampened soft cloth or chamois leather. **Avoid using abrasives or solvents.**

EU DIRECTIVES

This product is designed to comply with the legal provisions of EU Directives 89/3336/EC and 72/23/EC. The standards which have been applied are those which were in force at the time of the introduction of this product.

This product bears the CE mark.



This product is compliant to EN 60065.

This product must be earthed. Please ensure that other equipment connected to it is earthed according to the manufacturer's instructions.