

ROKSAN

Caspian **5-CH AMPLIFIER**

5-Channel A/V Power Amplifier

USER MANUAL

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Congratulations on your purchase of the ROKSAN Caspian 5-Channel A/V Power Amplifier. This amplifier is designed and manufactured to the highest specification and rigorously tested to offer you many years of trouble-free pleasure.

Your Caspian 5-Channel Power Amplifier is the engine behind your A/V surround sound speakers. Its correct installation, set-up and operation will have a profound influence on the sonic performance of the entire A/V system installation.

Please read the contents of this manual thoroughly. It will help you to understand your A/V equipment better and enhance your Audio Visual experience.

This manual is divided into the following sections:

- Safety Instructions
- Introduction
- Cautions
- Installation
- Setup
- Operation
- Troubleshooting
- Guarantee
- Specifications
- Notes

UNPACKING

Included in the packing of your Caspian 5-Channel Power Amplifier you will find:

- One mains lead fitted with the correct mains power plug for your country
- One information pack and warranty card

After removing these items please retain **all** packing materials. Correct packing is necessary for transportation of your Caspian 5-Channel Power 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

ROKSAN equipment 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 should be earthed. Please ensure that other equipment connected to it is earthed according to the manufacturer's instructions.

AC MAINS SUPPLY

Your Caspian 5-Channel Power 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 mains 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 UK13A 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 5-Channel Power Amplifier, please contact the appointed ROKSAN distributor for assistance.

Please observe correct mains polarity at all times.

The 5-Channel Power Amplifier mains fuse is located on the rear panel next to the IEC mains connector. This must only be replaced by the fuse of the type and rating as described on the fuse rating label on the rear panel of the unit.

This product requires connection to earth (ground). The earth wire (in the UK this is colour coded green/yellow) of the mains cable supplied with your 5-Channel Power Amplifier must be connected to a suitable earthing point established for this purpose by your electricity supply company. If you are in any doubt, consult a qualified electrician.

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 matters by the following:

- Re-orient or re-locate the receiving antenna
- Increase the distance between the 5-Channel Power 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

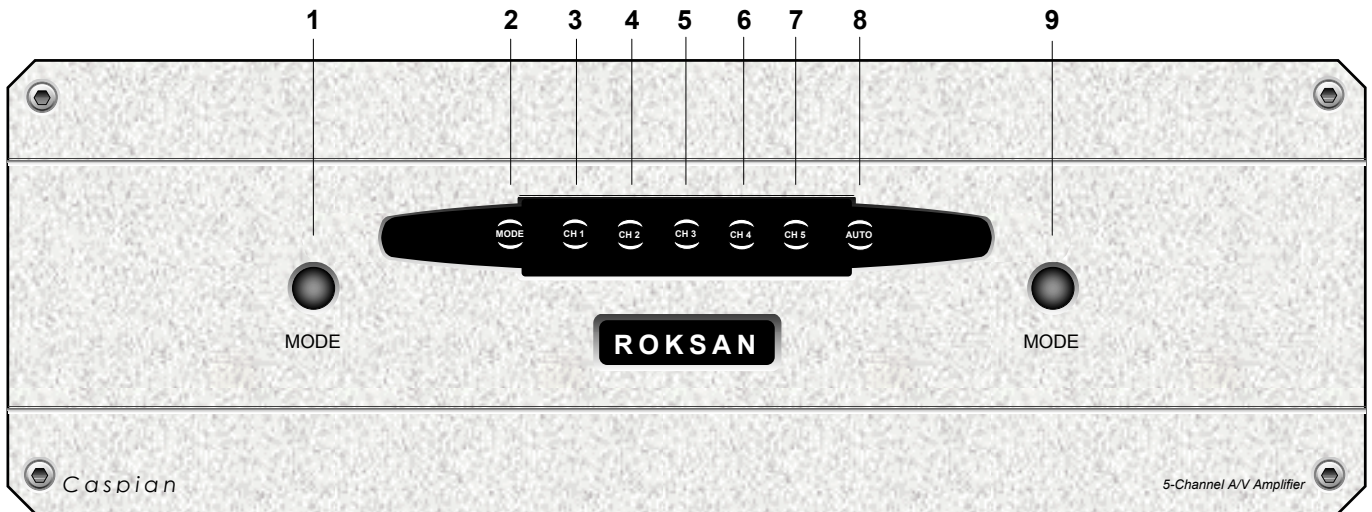
LOCATION

Your Caspian 5-Channel Power Amplifier should be located in a well ventilated area and kept away from sources of heat, dust and humidity and from direct sunlight.

The 5-Channel Power Amplifier may be positioned either as a free standing unit or alongside another audio/video product. Never place the 5-Channel Power Amplifier on carpet or any surface likely to hinder normal ventilation. Never allow liquids or other objects to fall into the unit.

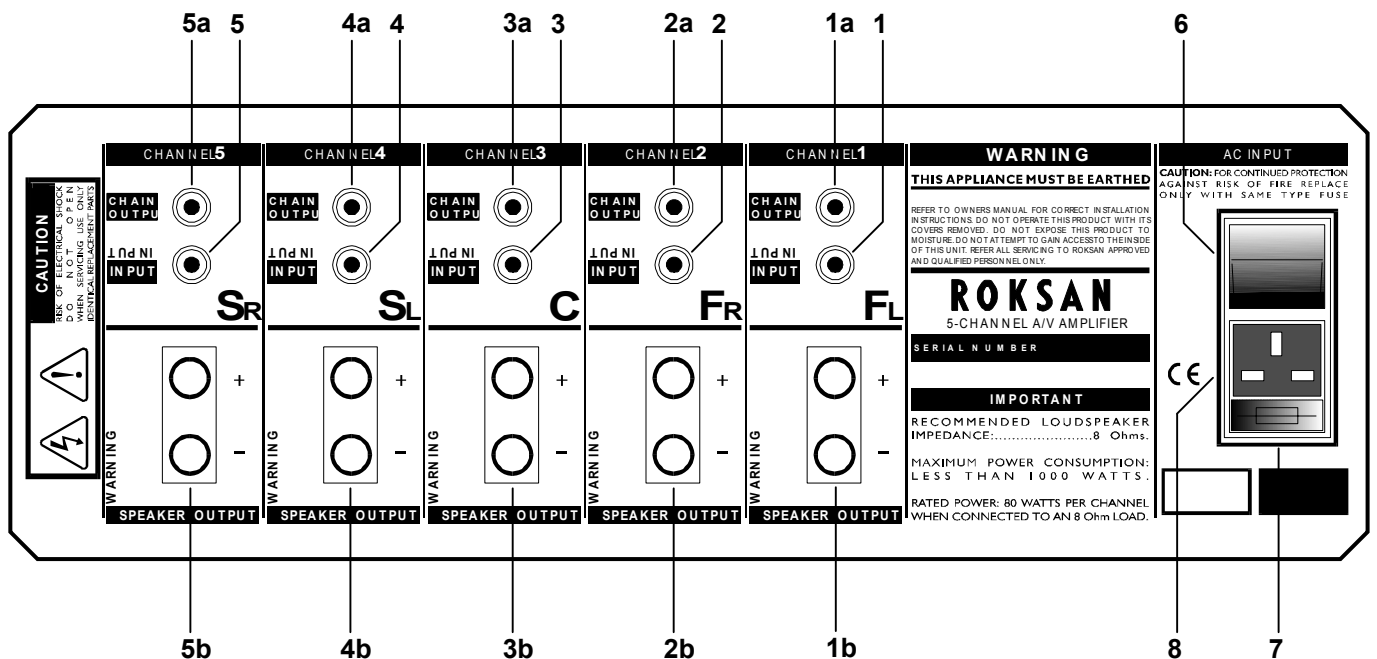
This unit contains no user serviceable parts. **Do Not remove any panels or attempt to service it yourself.** Unauthorised servicing will void the warranty.

ROKSAN Caspian 5-Channel Power Amplifier- Front Panel View



1. Standby / On Button
2. Standby Indicator
3. Channel 1 Overload Indicator
4. Channel 2 Overload Indicator
5. Channel 3 Overload Indicator
6. Channel 4 Overload Indicator
7. Channel 5 Overload Indicator
8. Auto / Operation Indicator
9. Standby / On Button

ROKSAN Caspian 5-Channel Power Amplifier - Rear Panel View



1. Channel 1 Input
 - 1a. Channel 1 Chain Signal Output
 - 1b. Channel 1 Loudspeaker Output
2. Channel 2 Input
 - 2a. Channel 2 Chain Signal Output
 - 2b. Channel 2 Loudspeaker Output
3. Channel 3 Input
 - 3a. Channel 3 Chain Signal Output
 - 3b. Channel 3 Loudspeaker Output
4. Channel 4 Input
 - 4a. Channel 4 Chain Signal Output
 - 4b. Channel 4 Loudspeaker Output
5. Channel 5 Input
 - 5a. Channel 5 Chain Signal Output
 - 5b. Channel 5 Loudspeaker Output
6. Mains Power Switch
7. Mains Power Fuse Holder
8. Mains Power Connector

SETUP

Caspian 5-Ch Amplifier

CONNECTING MAINS POWER

Please refer to rear panel view on Page 4. The moulded IEC connector of the supplied mains lead should be plugged into the socket 8 on the rear of the unit first and then plugged into the mains supply. The Mains power switch 6 is on the rear panel of the 5-Channel Power Amplifier. This switch is normally left on. If the unit is likely to be unattended for a long period, switch it off and unplug the mains lead from the wall.

SIGNAL CONNECTIONS

Signal Inputs: There are 5 Analogue Inputs with Gold plated RCA Phono Sockets and connections are made as follows:

Front Left Channel Input	1	(FL) White	<i>Connect to Front Left Channel output of Surround Sound Processor</i>
Front Right Channel Input	2	(FR) Red	<i>Connect to Front Right Channel output of Surround Sound Processor</i>
Centre Channel Input	3	(C) Green	<i>Connect to Centre Channel output of Surround Sound Processor</i>
Surround Left Channel Input	4	(SL) Blue	<i>Connect to Surround Left Channel output of Surround Sound Processor</i>
Surround Right Channel Input	5	(SR) Blue	<i>Connect to Surround Right Channel output of Surround Sound Processor</i>

Signal Outputs: There are 5 Analogue Chain Outputs with Gold plated RCA Phono Sockets and connections are made as follows:

Front Left Channel Chain Output	1a	(FL) White
Front Right Channel Chain Output	2a	(FR) Red
Centre Channel Chain Output	3a	(C) Green
Surround Left Channel Chain Output	4a	(SL) Blue
Surround Right Channel Chain Output	5a	(SR) Blue

These outputs are used for Multi-Amping the Loudspeakers. Connect the 'Chain' Output to another Input of the 5-Channel Power Amplifier* or an Input of another 5-Channel Power Amplifier for Bi-Amping (or Tri-Amping etc.) of your Loudspeakers for improved performance.

* when the Main or the Centre or the Surround speakers are driven from another amplifier.

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

OUTPUT CONNECTIONS

Speaker Outputs: Your Caspian 5-Channel Power Amplifier has 5 Gold plated Loudspeaker Terminals and connections are made as follows:

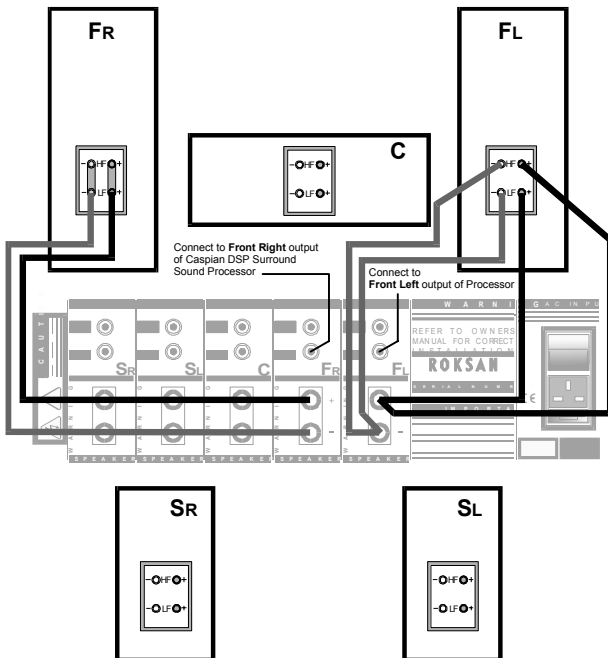
Front Left Channel Output	1b (FL)	Red (+)	Black (-)	Connect to Front Left Channel Speaker
Front Right Channel Output	2b (FR)	Red (+)	Black (-)	Connect to Front Right Channel Speaker
Centre Channel Output	3b (C)	Green (+)	Black (-)	Connect to Centre Channel Speaker
Surround Left Channel Output	4b (SL)	Blue (+)	Black (-)	Connect to Surround Left Channel Speaker
Surround Right Channel Output	5b (SR)	Blue (+)	Black (-)	Connect to Surround Left Channel Speaker

The loudspeakers are connected to the amplifier via the rear panel binding posts, 1b, 2b, 3b, 4b and 5b. Remove any overall sheath or split figure 8 cable to a depth of about 75mm (3"). Strip the insulation round each conductor to a depth of 12mm (½"). If the cable is stranded, twist the strands together. Unscrew the binding posts. Insert the bare ends through the holes. Tighten ensuring no bare wires are visible. Ensure that you connect the RED (+) speaker terminal to the RED or GREEN or BLUE (+) amplifier terminal and the BLACK (-) speaker terminal to the BLACK (-) amplifier terminal.

IMPORTANT NOTE: For optimum performance it is recommended to use high quality cables such as ROKSAN HDC-01S high definition Loudspeaker Cable. Many speaker cables such as the ROKSAN HDC-01S 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 and most ¼" Spade connectors.

Standard Wiring

Note links between Speaker Drive Unit Terminals



Bi-Wiring

Note links removed

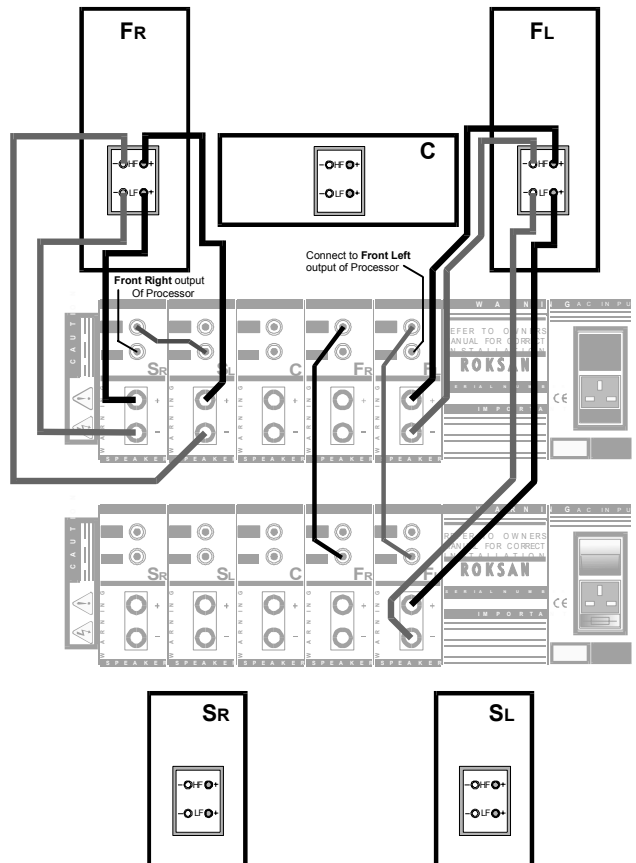
Bi-Amped Speaker

Using another channel of the same 5-Channel Power Amplifier

Note links removed

Bi-Amped Speaker

Using another 5-Channel Power Amplifier



Please refer to the front panel view on page 4.

After connection to the Mains supply, switch the Caspian 5-Channel Power Amplifier ON at the rear panel. It will enter STANDBY and the STANDBY LIGHT (2) glows RED. Press either of the MODE buttons (1 or 9), after a couple of seconds, the amplifier will set it self in AUTO mode and the AUTO LIGHT (8) will glow GREEN and the STANDBY LIGHT (2) will extinguish. Your Caspian 5-Channel A/V Power amplifier is now ready for use.

To set the amplifier back into standby, press either of the MODE buttons (1 or 9), and the AUTO LIGHT will extinguish and the STANDBY LIGHT (2) glows RED.

Thanks to its advance circuit design and 1 kVA power transformer, the Caspian 5-Channel Power amplifier is capable of audiophile sound quality with excellent transient power to compliment both 'pure audio' and audio/visual sound tracks. Your Caspian 5-Channel power amplifier is a high power, high current amplifier with very low distortion.

Most of the time, even with the most demanding material, it will not current limit and the distortion will remain ultra low. However when using low impedance loudspeakers at very high volume levels or when the surround sound processor output is set too high, the amplifier may occasionally current limit and its output distortion begin to increase. The control circuit of your 5-Channel Power Amplifier will automatically detect this and on the front panel display the corresponding channels' Overload Indicator (3, 4, 5, 6 or 7) will glow RED. You should first check the output of level of your surround sound processor and if it is set too high Trim it lower. Secondly lower the Master Volume and if applicable consider Multi-Amping your loudspeakers.

IMPORTANT NOTE: The current Overload Indicators will only illuminate if the amplifier is driven continuously at or past its maximum current capacity. These indicate overload of the power supply just before the onset of audible distortion. These Indicators in virtually all imaginable listening situations will rarely illuminate. *The control circuit indicates a fault when one or more of the Overload Indicators glow continuously RED without any input signal. You should switch the amplifier immediately off and contact your ROKSAN Authorized Retailer.*

Multi-Amping The Loudspeakers

Operation

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 hence 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.*

If you suspect that your ROKSAN Caspian 5-Channel Power Amplifier is not operating properly, you should check all the connections carefully. 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 rear panel	Ensure AC Mains lead is fully inserted Switch unit on at rear panel
No output on one or more channels	Amplifier in stand-by mode (MODE light RED) Missing or bad input signal connection Incorrect speaker connection Over heating	Press MODE button to set amplifier in AUTO mode (AUTO light GREEN) Check all input connections Check all output connections on rear panel Allow amplifier to cool, increase ventilation or use at lower volume
Hum from speakers	Incorrect Grounding	Check Mains polarity and grounding on all connected equipment

There are no user-serviceable parts inside your Caspian 5-Channel A/V Power Amplifier. If a fault should develop, refer any servicing to your appointed ROKSAN dealer, distributor or ROKSAN approved service agent.

Your ROKSAN Caspian 5-Channel A/V Power Amplifier is guaranteed against any defect in materials and workmanship for a period of **two 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, missuse, 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.

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.

SPECIFICATIONS

C a s p i a n 5-Ch Amplifier

No. of Inputs	5 Signal Inputs (FR, FL, C, SR and SL)	
Input Impedance	33 kΩ	
Input Sensitivity	900mV	
No. of Outputs	5 Signal Chain Outputs (FR, FL, C, SR and SL) 5 Speaker Outputs (FR, FL, C, SR and SL)	
Output Power	>85 Watts into 8 Ohms, >125 Watts into 8 Ohms, >125 Watts into 4 Ohms, >210 Watts into 4 Ohms,	all channels driven 2-channels driven all channels driven 2-channels driven
Current Output	>35 Amps Peak to Peak	
Slew Rate	>105V / μSecond	
Frequency response	-3dB, 3Hz – 110kHz	
Separation	1KHz, >80 dB	
Harmonic Distortion	<0.003% on all outputs	
I M Distortion	<0.02% on all outputs	
Maximum Hum and Noise	JISA 50 μV	
Signal to Noise Ratio	JISA >105 dB	
Power Source	100V – 120V 50Hz / 60Hz 220V – 240V 50Hz / 60Hz	
Power Consumption	< 1000 W	
Dimension	432 x 430 x 140 (W x D x H) mm 432 x 430 x 150 (including feet)	
Weigth	25 Kg	

Caspian 5-Channel A/V Power Amplifier

Serial Number:

Purchase Date

Year Month Day

ROKSAN Retailer

Name:

Location:

Please keep a record for future reference

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