

# ROKSAN

*Caspian*

**FM TUNER**

**M SERIES - 1**

USER MANUAL

## **ROKSAN AUDIO LIMITED**

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Congratulations on your purchase of the ROKSAN Caspian FM Tuner. This FM Tuner is designed and manufactured to the highest specification and rigorously tested to offer you many years of trouble-free pleasure.

Your Caspian FM Tuner is an important source component in your hi-fi system. Its correct installation, set-up and operation will have a profound influence on your enjoyment of good FM radio programmes.

This manual is divided into the following sections:

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

## **UNPACKING**

Included in the packing of your Caspian FM Tuner you will find:

- One mains lead fitted with the correct mains power plug for your country
- One Caspian System Remote Handset and AAA batteries (x2)
- One information pack and warranty card

After removing these items please retain **all** packing materials. Correct packing is necessary for transportation of your Caspian FM Tuner.

## **MAINTENANCE**

After disconnecting the FM Tuner 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 is Double Insulated without an earth (Ground) connection and bears the double insulation mark.



**AC MAINS SUPPLY**

Your Caspian FM Tuner 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 FM Tuner, please contact the appointed ROKSAN distributor for assistance.

**Please observe correct mains polarity at all times.**

The FM Tuner mains fuses are located on the rear panel next to the IEC mains connector. They 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.

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

**GENERAL CAUTIONS****FCC WARNING**

This equipment 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 equipment 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.

**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 FM Tuner 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 FM Tuner should be located in a well ventilated area and kept away from sources of heat, dust and humidity and direct sunlight.

The FM Tuner may be positioned either as a free standing unit or alongside another audio/video product.

Never place the FM Tuner 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.**

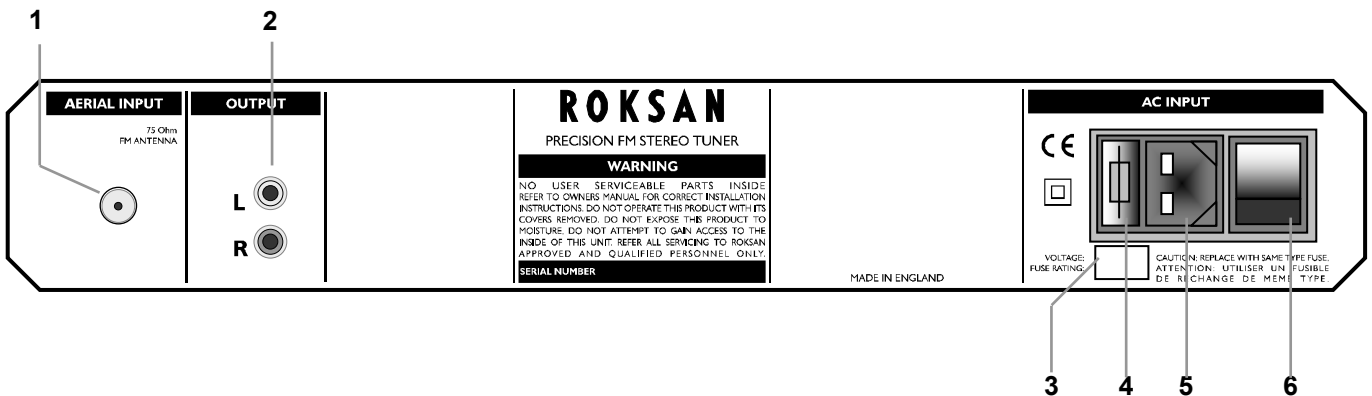
Unauthorised servicing will void the warranty.

## ROKSAN Caspian FM Tuner- Front Panel View



1. Channel Selector
2. Stereo/Mono Button
3. Standby Indicator
4. Frequency Display
5. Channel Display
6. Signal Strength/Centre Tune Display
7. Stereo/Mono Indicator
8. Channel Memory Store Button
9. Manual Tuning Knob

## ROKSAN Caspian FM Tuner - Rear Panel View



1. Aerial Input Socket
2. Audio Output (Left & Right)
3. Voltage & Fuse Rating Label
4. AC Mains Fuseholder
5. IEC Mains Inlet Socket
6. AC Mains Power Switch

## CONNECTING MAINS POWER

Please refer to the rear panel view on page 4.

The moulded IEC connector of the supplied mains lead should be plugged into the socket (5) 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 FM Tuner. 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

### AUDIO OUTPUT:

The Audio Output (2) uses RCA Phono sockets and should be connected to the TUNER or LINE input of your Preamplifier, Integrated Amplifier or DSP. The connection is: Right Channel – Red or **R**; Left Channel – White, Black or **L**.

### AERIAL INPUT:

Your Caspian FM Tuner is provided with a standard FM 75Ω Coaxial Aerial Socket. FM aerials in the UK use 75Ω screened coaxial cable and this is the preferred cable.

If you live in an area where 300Ω aerials and balanced feeder cables are used (as in some parts of the USA) you will need to use a 'balun' transformer to get the best performance from your Caspian tuner. Your ROKSAN dealer will be happy to advise you.

It is important that you have an adequate multi-element FM aerial installed outdoors (or loft mounted) by a professional. The sensitivity (and cost) of the aerial will depend on the height of your house, how far it is from your favourite stations' transmitters, and the presence of obstacles such as tall buildings or trees.

If you live close to a transmitter you *may* be able to get by with an indoor aerial, but reception could well be sporadic and noisy, particularly in stereo. Indoor aerials are affected by people moving in their vicinity and are very susceptible to electrical interference from thunderstorms, passing cars, washing machines, etc.

Quality levels between broadcast stations are variable. In addition to the quality of the programme there are technical factors affecting reception such as multipath reflections, the degree to which the transmitter is off beam to the aerial axis, and, of course, its distance.

When you have an aerial installed, a good idea is to have a 'shopping list' of stations so that your installer can optimise the aerial installation to your requirements.

**IMPORTANT NOTE:** For optimum performance it is recommended to use high quality inter-connect cables such as ROKSAN HDC-02A High Definition Analogue Cable and HDC-01D High Definition Digital Cable 75Ω (for aerial connection). The HDC-01D could be terminated to suit the aerial socket/connections.

Please refer to the front and rear panel views on page 4.

### **SWITCHING ON**

The Mains power switch (6) is located on the rear panel of the FM Tuner. 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.

Switch the tuner ON using the rear panel switch.

Your tuner will run a self-test sequence and then enter STANDBY. The MODE indicator will glow RED.

### **MODE SWITCH**

#### **To bring the Caspian out of STANDBY**

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Press the MODE switch.

The MODE indicator will glow GREEN. Your tuner is now operational.

The tuner may also be brought out of STANDBY by clicking the CHANNEL knob one position to the right or left.

#### **To switch the Caspian back into STANDBY**

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Press the MODE switch again with a sustained press. The MODE indicator will change back from green to red as the tuner enters STANDBY.

When you activate the tuner after switching on at the rear panel, the tuner will auto-select Channel 1.

When you activate the tuner after normal operation, the tuner will restore the programme last in use.

Tuning the *Caspian* is accomplished by the use of the TUNE knob together with the Signal Display.

### **AUTOMATIC TUNING**

Spin the TUNE knob clockwise. The tuner will rapidly scan up the band.

Spin the knob anticlockwise to tune down the band.

When a station is detected, the frequency is displayed and the scan stops. The Signal Display will lock, centralise the station and indicate the signal strength.

You may now store this station in a preset (See Page 7)

Spin the TUNE knob again to repeat the procedure.

#### **To stop an automatic scan**

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Slightly move the TUNE knob in the direction *opposite* to the scan i.e. if the tuner is scanning up the band an anticlockwise rotation will halt the scan.

The autoscan may also be stopped by clicking the CHANNEL knob one position to the right or left.

### **MANUAL TUNING**

Rotate the TUNE knob to manually alter the frequency in 10 kHz steps and fine tune the station.

## **SIGNAL DISPLAY**

For an FM station to provide good fidelity its signal must be strong enough to trigger the tuner's tuning and noise limiting circuits. The tuner must also lock precisely on to the centre of the broadcast signal. The Signal Display Unit on your *Caspian* tuner displays both Signal Strength and Centre Tuning.



No Signal  
Very Weak & Noisy



Strong Signal  
Accurately Tuned



Fairly Strong Signal  
Tuned Off Centre

When manually tuning a station, the centre figure of the above display is the one to aim for.

## **STEREO OR MONO?**

**Stereo:** During stereo reception the Stereo Indicator lights **green**.

**Mono:** During mono reception there is **no indication**.

**Forced Mono:** If stereo reception is noisy or distorted, you may wish to switch the tuner to mono.

Press the MODE button briefly to force the tuner into mono.

Press MODE again to restore normal operation.

During forced mono the Stereo Indicator lights **red**.

## **STORING AND RECALLING A PRESET CHANNEL**

Tune in the desired station.

Select mono or stereo.

Press the STORE button. The Channel Indicator will flash.

Rotate the CHANNEL knob clockwise to select a higher channel and anticlockwise for a lower one. To leave the channel unaltered - do nothing.

Press STORE again.

The station is now stored in the channel memory. You may store up to 50 channels in this way.

You can store the same station in mono and stereo by allocating each setting a different channel number.

**To recall a preset channel:**

Rotate the CHANNEL knob to select the channel.

## **CHANGING A PRESET CHANNEL**

Select a preset channel using the CHANNEL knob.

Press STORE. The existing channel number will flash.

Rotate the CHANNEL knob until the wanted channel number flashes on the display.

Press STORE again. The display stops flashing

The information will now be stored both in the new channel *as well as* the existing channel.

## **AUTO STORE FUNCTION**

Your *Caspian* FM Tuner has the facility to automatically tune in and store up to 25 stations.

### **To activate the Auto Store Function:**

Switch the tuner OFF via the rear panel switch.

Hold down the STORE button and switch the tuner on.

Release the STORE button.

Your *Caspian* tuner will scan the band, increasing in frequency. As a station is detected and stored, the channel indicator will flash to register the information.

When 25 stations have been memorised the tuner will enter STANDBY. If less than 25 stations are detected the tuner will memorise those and enter STANDBY.

During auto scan the station with the lowest frequency is stored in channel 50, the next lowest in 49 and so on.

Information in the memory between channels 50-26 will be overwritten. Channels 1-25 are unaffected.

Bring the tuner out of STANDBY.

The tuner display will default to Channel1.

Turn the CHANNEL knob one position to the left. This will select Channel 50 which is the first station memorised by the auto-store routine.

Re-arrange the channels as required. (See Page 7.)

## **MUTE THRESHOLD LEVEL**

Your tuner has been set up to ignore signals below 20dB  $\mu$ V when auto tuning or auto storing. This corresponds to two dots on the Signal Indicator.

Distant or low level signals should be tuned and stored manually. (See Pages 7&8).

## **MEMORY STORAGE AND PRESET RECALL**

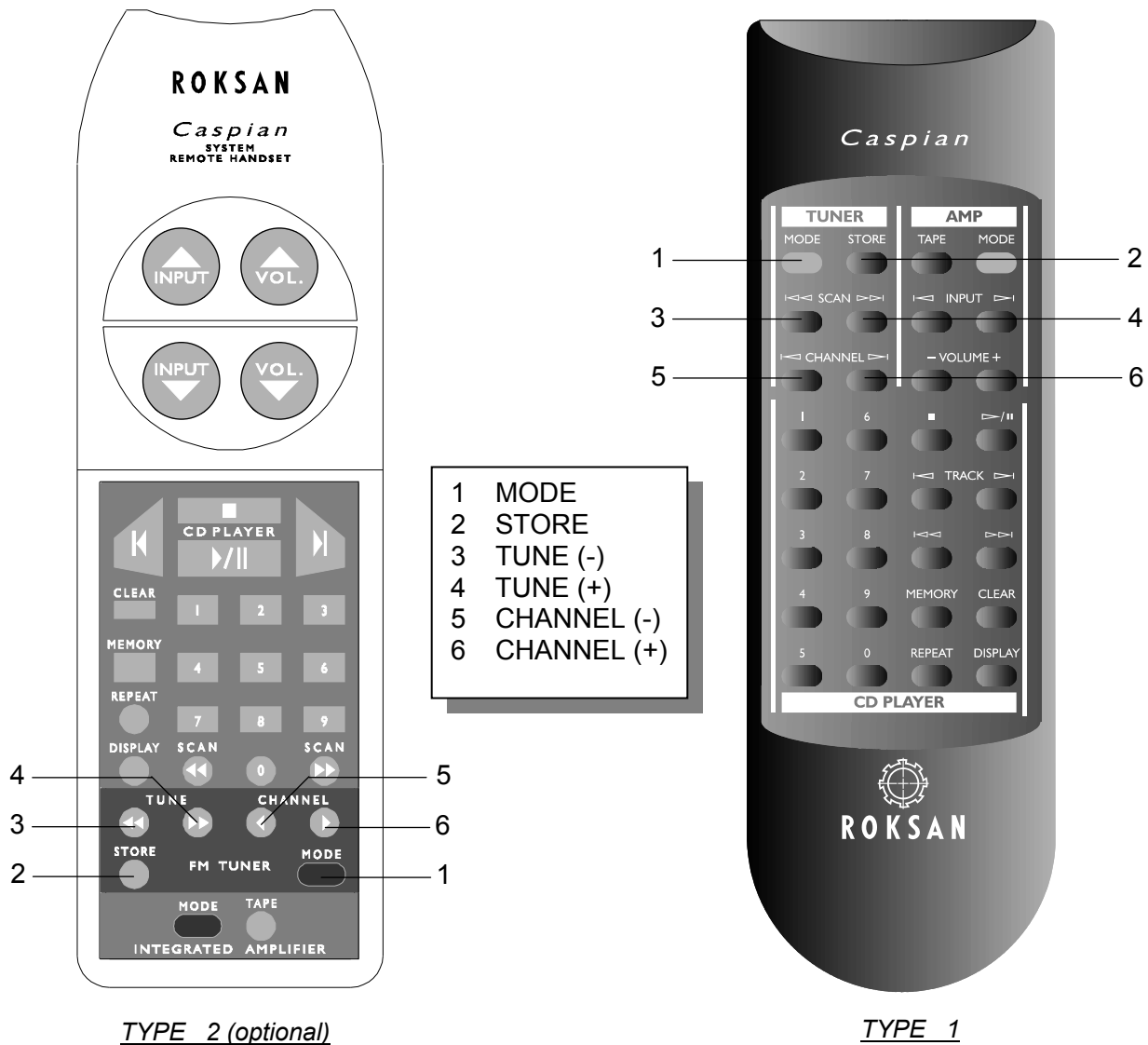
Information in the *Caspian* tuner is held in non-volatile memory. You can leave the tuner switched off at the mains indefinitely without losing any information.

Use channels 1-25 to store favourite stations as these are unaffected when the tuner is in auto-store mode.

When scanning, if a station is detected that is already preset in the channel memory, that number will indicate. If the same station is held in more than one preset, the indicator will default to the lowest number.



The Caspian System Remote Handset uses two AAA size 1.5V batteries. These are housed in the battery compartment on the underside of the handset.  
 Carefully remove the battery compartment cover and insert the supplied batteries in place observing **polarity**.  
 Replace the cover. The handset is now ready for use.  
 The front panel controls of the Caspian FM Tuner are replicated on the remote handset.



The TUNER functions on the System Remote Handset operate exactly as the front panel controls.

- MODE:** A sustained press on this button will put the Tuner into and out of STANDBY.  
A short press will put the Tuner into and out of Forced Mono.
- TUNE:** Press ► and the Tuner will scan up the band, stop when it sees a usable signal, and automatically tune it in.  
Press ◀ and the Tuner will auto seek by decreasing frequency.
- CHANNEL:** Use this key to select a channel with a previously stored station, or for storing a new one.  
Press ► to increase channel number.  
Press ◀ to decrease channel number.
- STORE:** When you want to store a station:  
Press STORE and the Channel Indicator will flash. Choose a channel using the CHANNEL keys and press the STORE key again. The indicator will stop flashing and the station is now stored.

If you suspect that your ROKSAN Caspian FM Tuner is not operating properly, you should check all the connections carefully. Pay particular attention to input and output connections. Phono plugs should be fully inserted- a frequent cause of problems is that Phono plug surrounds do not make proper contact. Check the FM station setup and ensure the aerial is connected. 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 lights or display Mains ON, no operation	Tuner off at the Mains or rear panel Tuner in STANDBY mode	Connect, switch Mains power ON Bring Tuner out of STANDBY
Auto scan fails to select any station or most stations	Aerial not connected Aerial faulty or inadequate	Check aerial and connections to Tuner are up to standard
All stations have high background noise	Aerial inadequate; faulty down lead	Rectify. If your aerial is OK, consult your dealer or an aerial erector
Mono reception is OK, Stereo is noisy or distorted	Aerial is inadequate or misaligned Multi-path reception effects	Rectify. If your aerial is OK, consult your dealer or an aerial erector
Broadcast should be stereo but appears to be mono	Tuner is in Forced Mono	Indicator is RED. Remove Forced Mono, and light will go GREEN. If no indication, station is mono
Auto Store function does not work	Incorrect operation procedure	Press AND hold down STORE button whilst switching Tuner ON at the rear panel
Remote control not responding	Programming accidentally erased	Replace, check polarity of batteries Re-position handset or Tuner location

## GUARANTEE

## Caspian FM Tuner

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

Your ROKSAN Caspian FM Tuner 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, 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.

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

# Caspian FM Tuner

Audio Output (@ 75kHz Dev. Mono 1kHz)	775mV
Aerial Input	75Ω Coaxial
S/N Ratio (CCIR – ARM)	Mono >82dB Stereo >76dB
THD+N @ 1kHz (400Hz HPF, 22kHz LPF)	Mono, 50kHz Deviation <0.03% Mono, 75kHz Deviation <0.05% Stereo, 50kHz Deviation <0.07% Stereo, 75kHz Deviation <0.08%
Stereo Separation	>50dB
Capture Ratio	1dB
IF Suppression	>90dB
Image Frequency Suppression	>80dB
Pilot Tone Suppression	>70dB
Tuning Range (Europe & USA)	87.5 – 108 MHz
Fine Tuning	10kHz Steps
Power Source	100V – 240V 50Hz / 60Hz
Power Consumption	Operational <12 W Standby <5W
Dimension	432 x 330 x 70 (W x D x H) mm 432 x 330 x 80 (including feet)
Weight	7Kg

# NOTES

# Caspian FM Tuner

Caspian FM Tuner M series-1

Serial Number: .....

Purchase Date

Year ..... Month ..... Day .....

ROKSAN Retailer

Name: .....

Location: .....

*Please keep a record for future reference*

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