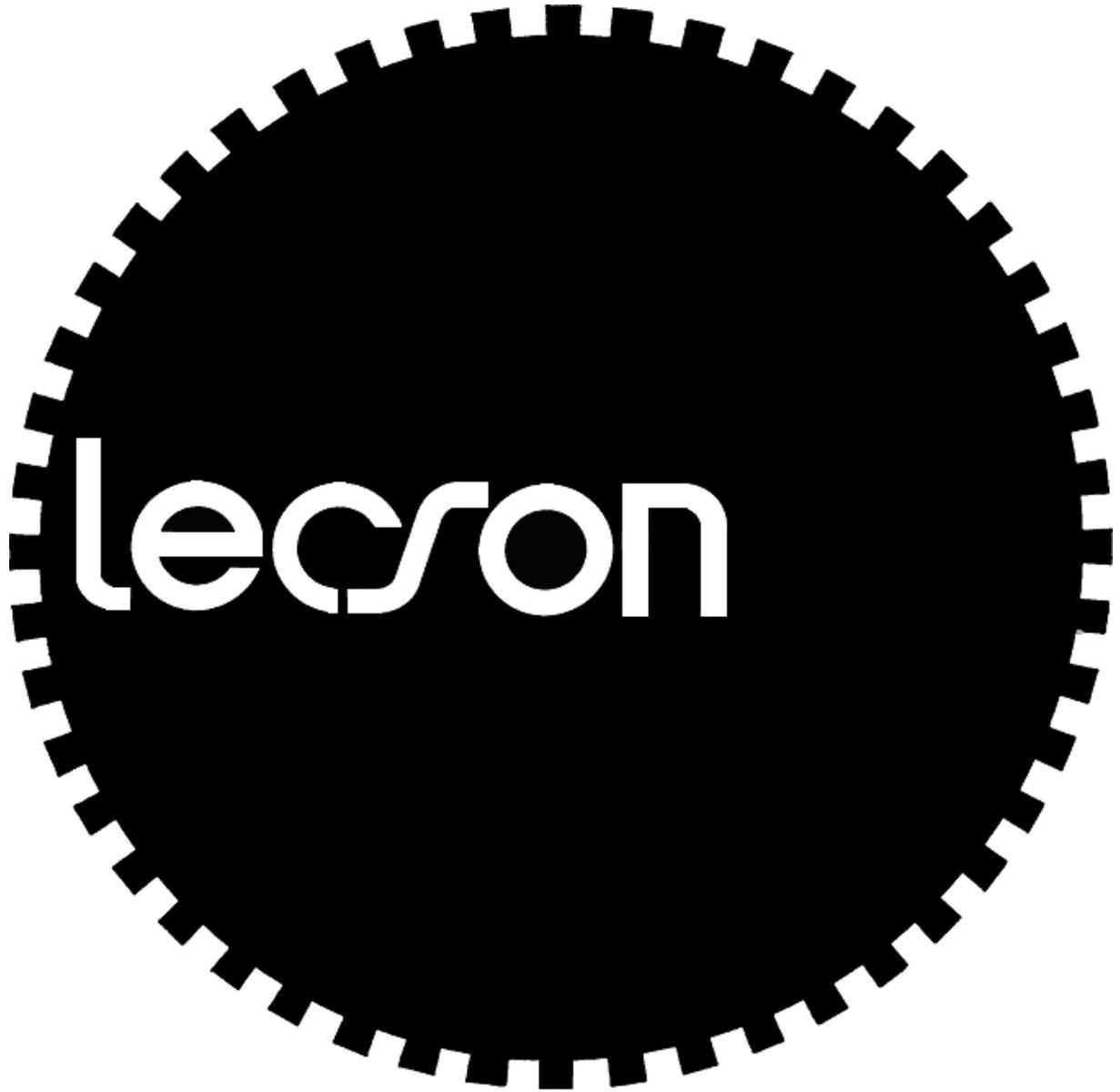


# INSTRUCTION MANUAL



*s*fm.2

1. INTRODUCTION

Your Lecson SFM2 Tuner is a superbly engineered instrument designed to give the best quality reproduction of stereophonic VHF/FM radio programmes. The SFM2 has been elegantly designed to match the existing Lecson range of Hi-fi equipment and to blend aesthetically with domestic surroundings. The SFM2 may be operated in conjunction with any good quality amplifiers and tape recorders. It has been built with high quality components to ensure reliable operation under normal conditions. We would particularly recommend that the SFM2 Tuner be used with the matching range of Lecson Amplifiers and Loudspeakers.

Please read this Handbook carefully as it is provided so that you may take full advantage of the facilities of the Tuner and thus obtain the very best performance from it. Your dealer is there to advise and help you should any difficulties arise.

2. BEFORE SWITCHING ON

The SFM2 Tuner is fitted with a 3-core double insulated mains cable. This cable should be wired as follows:

Brown ..... to Live line  
Blue ..... to Neutral line  
Green/Yellow ..... to Earth (Ground)

THE TUNER MUST NOT BE CONNECTED TO A TWO WIRE MAINS SYSTEM, OR THE EARTH LEAD CUT BACK. This wire forms an integral part of the SFM2 internal circuitry and screening; a loud hum will therefore result if the unit is incorrectly earthed.

When used with the AC1 pre-amplifier the two units should be wired separately to the mains supply. They should only be linked using the recommended type of audio lead.

Under no circumstances should the SFM2 be opened unless the mains supply is disconnected.

3. INTERCONNECTIONS

Facilities are provided to enable the SFM2 to be connected to a VHF/FM aerial having an impedance of 75 ohms (Co-axial cable) or 300 ohms (Balanced Twin Feeder).

The audio output is via a 5 pin DIN socket which should be connected to an audio input on an amplifier or tape recorder having a flat frequency response and an input impedance greater than 50 ohms. When a 'straight' DIN lead (pin 1 connected to pin 1 etc.) is used, the output level can be varied from zero to 1V by adjustment of the preset volume controls adjacent to the output socket. (See fig. 1). Connection to the Lecson AC1 is shown in the AC1 instruction manual, fig.4

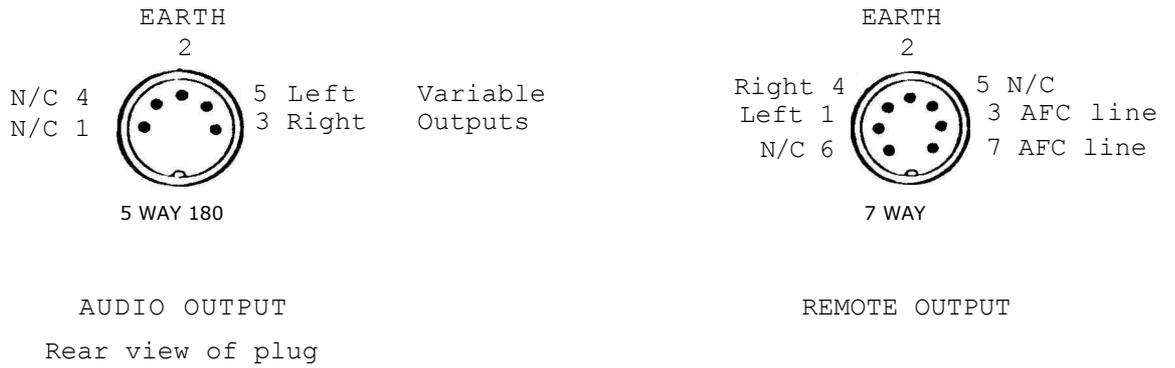


Figure 1

NOTE: If connection is made to the accessory socket in error, no damage will result but only one channel will be connected to the pre-amplifier.

The accessory output can be used to drive a centre-zero tuning meter after removal of an internal link connected across the socket. Please note that once this link is removed, the tuner will not operate unless the two AFC pins are connected externally.

Do not push in or pull out DIN plugs while the tuner is switched on.

The SFM2 is protected by a fuse located adjacent to the mains lead entry. Replacement fuses must be of the correct type: 20mm 1 amp anti-surge.

Mains supply (220-240V only) to the system is made through the 3 core lead supplied with the SFM2. It should be connected as shown in Figure 2. The SFM2 can be adjusted for operation on 110-120V at the factory if required.

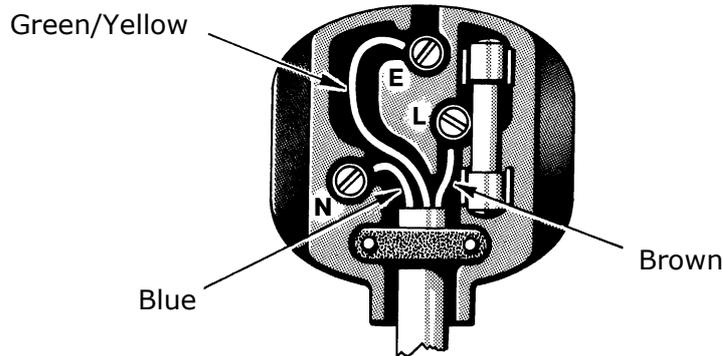


Figure 2

#### 4. CONTROL FUNCTIONS

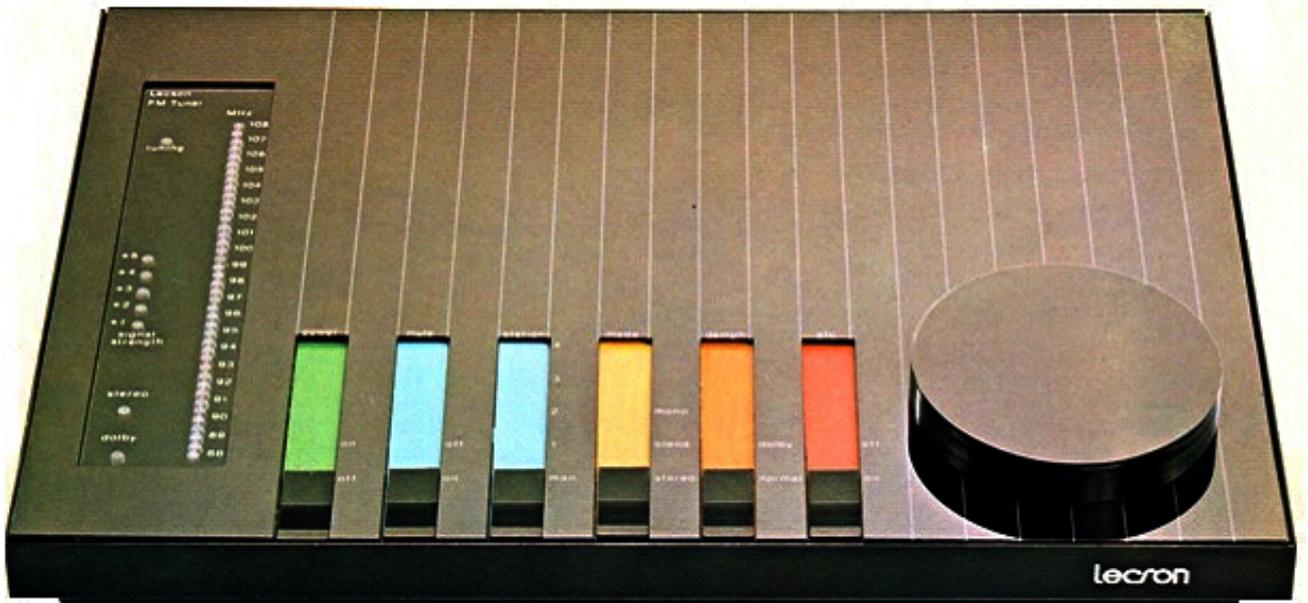


Fig 3 shows the top face of the SFM2, and the control functions are described below.

##### 4.1. Indicator Lamps.

- 4.1.1. Tuning Scale. The tuning scale consists of a line array of Light Emitting Diodes. Usually one of these diodes is lit to indicate the tuning frequency selected by the tuning control. Occasionally two diodes will be lit where the frequency selected overlaps between two discrete steps. Naturally where only a finite number of steps are possible, the display cannot be absolutely accurate, but serves as a straightforward easy-to-use indication of the tuning frequency selected.
- 4.1.2. Tuning Indicator. This LED indicates the accuracy of the setting of the tuning control. When the station is correctly tuned, the LED glows. If the Tuner is more than 40KHz from a station centre frequency, the lamp will extinguish. NOTE: In 'Mute' mode this lamp also indicates output Muted when extinguished.
- 4.1.3. Signal Strength Indicator. The signal strength indicator is composed of an array of 5 light emitting diodes that are progressively lit up as the signal strength increases. When all 5 lamps are lit, the incoming signal strength is in excess of 10mV.
- 4.1.4. De-emphasis Indicator. This indicator is lit whenever the 25 micro-seconds de-emphasis is selected, for instance whenever a Dolby\* encoded signal is received. It does not in any way indicate that the received signal is encoded, only that the de-emphasis of this tuner has been changed.
- 4.1.5. Stereo Indicator. This indicator is lit whenever a stereo signal is received and the mono/stereo switch is set to Stereo or to Stereo blend.

\* Trademark of Dolby Laboratories Inc.

## 4.2 CONTROLS

- 4.2.1. Power Control Switch. This switch controls mains power to all the circuits in the tuner when turned ON. When turned OFF it disconnects all mains power from all tuner circuits.
- 4.2.2. Preset Switch. In the normal position, this switch enables the manual tuning control knob for selection of stations. The remaining four positions of the switch enable the four pre-set stations. As the switch is moved to each position it uncovers the associated pre-set. These pre-sets can be turned to particular stations by turning them with a small screwdriver or trimmer.
- 4.2.3. Muting Switch. This switch enables the muting circuit, which mutes the tuner output for very weak signals so that inter-station hiss is not heard. When it is set to OFF all signals are fed to the output regardless of their quality. If the switch is set to ON when the SFM2 is tuned more than 40KHz from a station centre frequency the output will be muted in this mode. The Tuner is muted at any time that the 'ON Channel' LED is extinguished. Due to the narrow tuning window for each station with Mute ON, we recommend that tuning is carried out very slowly to avoid over shooting station centres.
- 4.2.4. Stereo/Mono Switch. This switch is normally set to STEREO position which enables stereo stations to be received if they are of a suitable signal strength; during reception of MONO signals (having no 19KHz Stereo Pilot Tone) the tuner automatically reverts to the mono mode. The centre position is STEREO BLEND which reduces the noise level when a stereo signal is received but at the expense of some stereo separation. The third position is MONO. When the switch is set at MONO it is not possible to receive any programmes in stereo. Note that adequate reception of stereo programmes requires a much larger signal than that necessary for good mono reception.
- 4.2.5. De-emphasis Switch. In the normal position of this switch the de-emphasis time constant is set to that suitable for the area in which the tuner is used. In the second position the de-emphasis is recommended whenever Dolby\* encoded signals are received and enables the signal of the correct frequency content to be fed to an external Dolby type B decoder.
- 4.2.6. AFC Switch. This switch, the automatic frequency control switch, is normally set to OFF when the tune control is operated. Once the station has been selected, setting the switch to ON activates the circuit which automatically holds the tuner onto the selected station and compensates for slight manual mis-tuning or any tendency for the tuner to drift off the station.
- 4.2.7. Tuning Control. This manual tuning control is a ten-turn rotary potentiometer which sets the tuner to receive any frequency on the VHF band from 88 Megahertz to 108 Megahertz.
- 4.2.8. Preset Volume Controls. (Located on the rear panel). These are used to match the audio output of the tuner to the inputs of ancillary equipment such as amplifiers or tape recorders.

\* Trademark of Dolby Laboratories Inc.

5. TECHNICAL SPECIFICATIONS

Tuning Range:	88 to 108 MHz
Aerial Inputs:	72 Ohm unbalanced, 300 Ohm balanced
Sensitivity:	1.2uV for 30 dB Quieting IHF
IF Rejection:	>85 dB
Capture Ratio:	1.2 dB
Frequency Response:	20Hz to 15KHz $\pm$ 1 dB
T.H.D. (Mono):	0.1% (Typically)
Signal to Noise Ratio (Mono):	70 dB
Pilot Tone Rejection:	60 dB
Stereo Separation:	40 dB at 1KHz
Audio Output:	a) Up to 600mV RMS (Variable) b) Up to 500mV RMS (Fixed)
De-emphasis:	50uS or 25uS switchable (75uS for North America)
Pre-set Stations:	4 front panel adjustable pre-sets with visual station indication on LED Tuning Array
Other Facilities:	Automatic Frequency Control. Blend Facility. Switchable Mute Facility. Signal Strength Level Indicator. Tuning Indicator
Accessory Outputs:	Local Oscillator Feed to DR1. Discriminator DC Output to DR1
Overall Dimensions:	363mm wide 250mm deep 38mm high.