

LECSON

Stereo F M Tuner

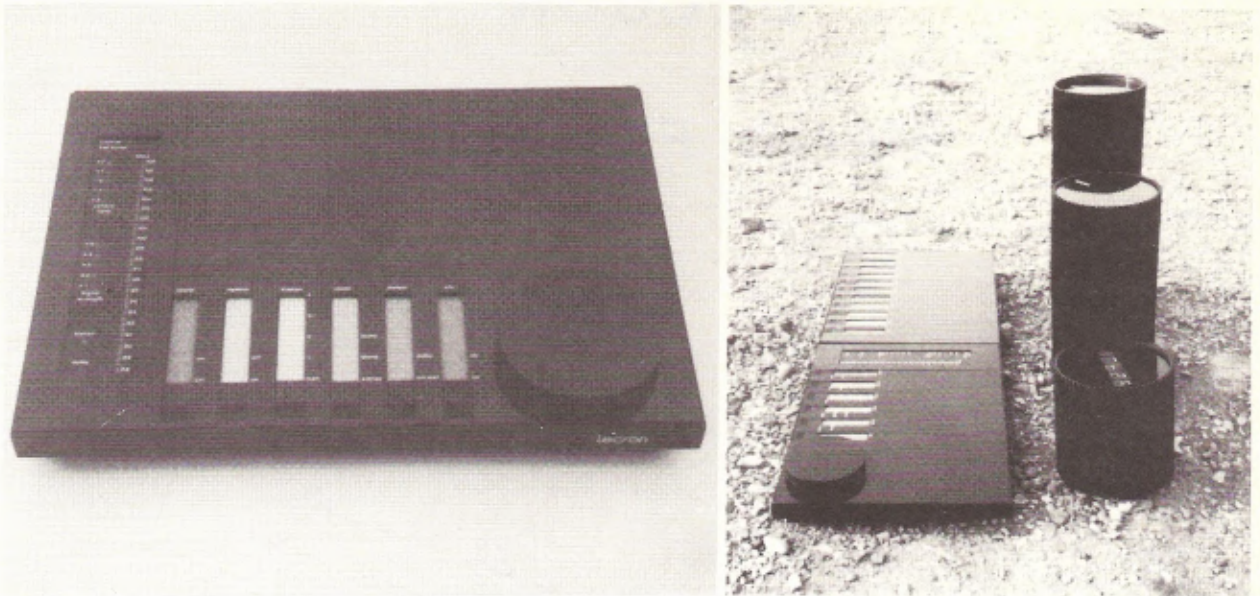
**ADVANCE
INFORMATION
NEW PRODUCT**

lecson

Lecson Systems Limited
Burrel Road Stives Huntingdon Cambridgeshire
England PE17 4LE Telephone 0480 64124
TELEX 32562 A/B Lecson
Cables Lecson Stives Huntingdon

The Lecson FM1 Stereo FM Tuner has been designed to match the appearance and performance of the AC1 Control Unit.

Great emphasis was placed upon ease of operation as well as on technical specification.



The front-end uses Dual-gate MOSFET devices and has four stages of varicap tuning. Intermediate stages are double tuned and careful attention to layout and screening has ensured excellent selectivity and immunity to spurious responses. An antenna Balun provides for either $300\ \Omega$ or $75\ \Omega$ connections.

The IF strip uses two double ceramic filters (for good selectivity) separated by active gain stages. Correction is made to ensure a maximally flat phase response. The four stage IF limiting amplifier is followed by an extremely linear discriminator. The whole IF stage is screened in its own metal can.

Stereo decoding is controlled by a Phase-Locked Loop system. Unlike many lesser tuners the Lecson does not use an Integrated Circuit Decoder. The entire PLL and demultiplexer circuits are fabricated from discrete components. The benefits show in lower noise; lower distortion; and better stereo separation. Good separation is further ensured by the use of FET demultiplexing circuits.

Accurate de-emphasis (switchable to $25\ \mu\text{S}$ Dolby) and Pilot-Tone filtering is achieved by the use of cascaded active filters notable for their sharp responses and low distortion. The audio output level is variable to suit other ancillary equipment.

Station Tuning is voltage controlled and 4 preset stations are provided plus normal manual tuning. The presets are front panel adjusted; each preset being revealed in turn when the station selector slider is moved. The tuning voltage is ultra-stable and temperature compensated using C-MOS technology. AFC uses an integrating analogue computer technique to lock the tuner exactly to the desired station.

The Lecson tuner incorporates a new solid-state display system. Station frequency is indicated on a line array of 41 LEDs (Light Emitting Diodes.) Only one LED is illuminated at any one time and thus the overall effect is that of a moving spot of red light. This display is used to give an approximate readout of station frequency.

For those requiring greater accuracy, a Digital Readout is available as an add-on extra (Lecson DR1). Two meter systems each using five red and green LEDs are used to indicate Signal Strength and Centre Tuning.

Additional facilities are:-

- i) Squelch (Muting) control
- ii) Stereo Blend facility for particularly noisy signals.
- iii) LED indicators for Stereo Pilot tone and for Dolby de-emphasis.

CONSTRUCTION.

The exterior construction of the FM1 continues the unique Lecson blend of acrylic and aluminium - each material being used to enhance the other.

Internal construction is to a high order. A one piece double-sided through-plated mother board is used virtually eliminating the need for any cable-forms. Small plug-in PCBs are used to isolate the various circuit functions and hence greatly simplify fault-finding operations should they eventually be required.

Top quality components are used in the places where quality counts e.g. Tuning control is professional 10 turn potentiometer; toroidal mains transformer; and all switching by gold plated reeds.

PROVISIONAL SPECIFICATION.

| | | |
|---------------------------------|---|---|
| Tuning Range | : | 88 to 108 MHz |
| Sensitivity | : | 1.5 μ V for 30db Quieting |
| IF Rejection | : | 85 db |
| Capture Ratio | : | 1.2 db |
| Frequency Response | : | 20Hz to 15KHz \pm 1 db |
| T.H.D. (Mono) | : | 0.1% |
| Signal for Noise Ratio(Mono) | : | 70 db |
| Pilot Tone Rejection | : | 60 db |
| Stereo Separation | : | 40 db at 1KHz |
| Audio Output Level | : | Up to 1 volt RMS (Variable) |
| Spurious Radiation from Antenna | : | Less than 500 μ V |
| Overall Dimensions | : | 14 $\frac{1}{2}$ inches wide 10 inches deep 1 $\frac{1}{2}$ inches high |
