PARK AIR ELECTRONICS LTD.
RED LION SQUARE, STAMFORD, LINCOLNSHIRE Telephone Stamford 2187

DOUBLE S LINE MONITORS, SERIES 2

OPERATING INSTRUCTIONS

Six models are available, those prefixed "10" being battery operated and those prefixed "15" for mains operation. A Mains Power Supply Unit is available for mains operation of a prefix "10" model if required.

Export models use DH76E fibre glass printed circuit boards; the battery operated models use two 7.5V batteries series connected, EveReady type 707, or similar.

Home and European models use E60 laminate boards, and use two series connected PP1 6V batteries. These batteries are available in the United Kingdom and Europe only.

The basic models, 10SS or 15SS, have the following controls:

Volume:	Clockwise rotation for most sound
Squelch:	Clockwise rotation for maximum quieting
Tuning:	Clockwise rotation for increased frequency
Front panel on/off:	Down is "on".
Telescopic Aerial:	For vertical case operation screw into hole on front panel, do not over-tighten. For horizontal operation screw into hole adjacent to loudspeaker grille.
Rear Panel:	Headset Socket Jack, for 8 ohm headsets or Extention Loudspeaker systems.
Tape Recorder Socket:	3.5 mm socket jack, impedance 600 ohm nominal + 10 dBm.

The aerial socket matches standard car whip aerial plugs, and may be used with an external Park Air dipole system if desired.

PAE

Battery Replacement:

Remove the back panel of the Monitor by inserting the edge of a small coin or screw driver and turn each fastener through 90°, a quarter turn.

Insert the two new batteries by series connecting the two cells, making sure that the black wire goes to the negative terminal and the red wire to the positive terminal. The linking wire goes to the two unused terminals and links the two cells in series.

Replace the battery cover and fasteners.

When using a mains power unit on prefix "10" models, connect the connectors Red to Red and Black to Black; store the unused battery cover and link connector safely. Note the on/off switch on the front panel now only disconnects the set from the power supply.

NEVER ATTEMPT TO REMOVE THE MAINS POWER MODULE FROM THE SET WITHOUT FIRST WITHDRAWING THE POWER CORD FROM THE WALL SOCKET OR POWER OUTLET.

On series "15" models the power is controlled by the front panel switch.

Tuning the Monitor:

Two scales are provided, one calibrated in MHz is used to identify the section in which the wanted channel is located, the second scale, which is the logging scale calibrated 0 - 100, allows fine adjustments between the one MHz calibration points; the wanted channel can always be relocated by referring to the number of the logging scale. Great care is needed to tune in a station, since the ability of the 10SS to separate two signals closely spaced in frequency, without overlap, means that stations will come in much more sharply on the tuning knob, which has a 6:1 reduction drive.

Squelch Control:

Always tune the receiver with the squelch control fully anti-clockwise, and set this control when no signal is being received to the point where the background noise is just quiet; further rotation of the control past this point will require an increase in the strength of the received signals to overcome the squelch. Thus it may be seen that at full rotation only the strongest signals will be received.

Telescopic Aerial:

The telescopic aerial system may be used in two mounting planes protruding from the position adjacent to the loudspeaker grille for desk top operation, or from the left hand edge of the scale for portable use.

The telescopic aerial should always be unscrewed with great care since damage may be done to the printed circuit if any undue pressure is brought to bear on the aerial.

An external or car aerial may be connected to the socket on the rear of the case adjacent to the battery container. Park Air Electronics recommend the use of their window mounted car aerials, or their ANT kits for external fixed use.

10/A and 15/A models use a selectable 50 KHz crystal filter for the purpose of separating an adjacent channel from interfering with the wanted signal.

On selecting the filter "in" it will be noticed that the signals become much more difficult to tune, and great accuracy is required to achieve the best results. Always use the lowest possible setting of the volume control, excessive volume will cause an acoustic howl on strong signals. In those cases where this is unacceptable a pair of headphones or extention loudspeaker should be used, and these accessories are strongly recommended.

10W - 15W Series:

These models use crystal controlled local oscillators, and it is necessary for the best results to set the tuning scale roughly to the area of the crystal controlled channel, ± 1 MHz is sufficiently accurate. The 50 KHz filter may be selected in or out as required, and there is no restriction on the setting of the volume control when using crystal control.

The crystals are fitted to the switch in ascending order of frequency, the highest frequency crystal fitted being in position F, and the lowest in position A.

Calibration:

The accuracy of the calibration is in the main governed by the manufacturing tolerances of the tuning circuit components, therefore the set calibration is only as good as these components. Best accuracy is in the range 118 to 130 MHz, with errors tending to assume greater importance outside these limits, up to a level of ± 250 KHz at the edges of the scale.

Under no circumstances should any attempt be made to recalibrate the set unless adequate accurate test equipment is available.

Service Facilities:

These are available at our Service Department, and any sets returned for modification or service must enclose details of the work to be done, and the name and address of the sender.

Packings:

The original packings should be retained for transit back to our Service Department. No responsibility will be accepted for goods damaged in transit.

Accessories available:

Carrying case and shoulder strap;
Power supply modules;
External aerial systems;
Car whip aerials, window mounted;
Headphones

Range:

On ground stations line of sight ground to ground ranges are dependent on the local terrain and the height of both the receiving and transmitting aerials.

On air to ground, using external aerial systems in unobstructed sites, up to 300 miles for aircraft flying at FL300, 30,000 ft. approx., are theoretically possible. On a good outside aerial, 200 miles would be normal, with a restriction on range for the telescopic aerial of the set; but in any case better than 100 miles, indoors.

Aircraft flying in the lower airspace will have progressively shorter range as the aircraft descends.

For circuit traffic 30 miles is about normal range, with aircraft flying from FL40 - FL100 giving ranges of 100 miles. Aircraft above this height will give ranges of greater than this.

This information is not to be taken as completely correct, but only as a guide to the expected performance which could be obtained under average conditions.

For best results and to avoid overloading the monitor when used on or near airport locations, use only sufficient aerial extended for the results required. In areas of strong signals only a few inches of aerial will be required.

Use in a vehicle:

The Monitor can only receive signals which are above the locally generated noise. A good check is to set the squelch control to the just quiet position, with the vehicle whip aerial extended, and plug in; then start the vehicle motor. The ignition and dynamo noise will override the squelch setting and this will have to be advanced to quiet the monitor in the new local noise condition. Adequate suppression of the vehicle is necessary to ensure a reasonable signal performance. When travelling adjacent to buildings it will be noted that the signal will "chop", this is due to multi path reflections from various surrounding objects, and does not indicate a fault condition in the receiver.