

OWNERS MANUAL FOR AR-22

SLIMSIZER

1. GENERAL DESCRIPTION

The model AR-22 is 1,800 channel PLL frequency synthesized VHF FM communications receiver which covers entire 141.000MHz to 149.995MHz or 151.000MHz to 159.995MHz band in 5kHz steps. The AR-22 is designed primarily for 2 meter amateur band reception (141.000-149.995MHz type) and for commercial band reception (151.000-159.995MHz type).

The AR-22 design is based on the advanced PLL synthesizer technology which generates the local oscillator signal for dual-conversion receiver system with an outstandingly clear signal reception. The AR-22 receiver is the equal of many full size base station; sample measuring out at 12dB SINAD for less than 0.2 microvolts for all frequencies.

The AR-22 has many advanced features including:

- * Direct frequency reading in 5kHz steps by digital push switch and slide switch
- * Its slim size and lightweight design permit it to be carried in the shirt or coat pocket. It measures 5½"(H) x 2½"(W) x 1"(D) and weights only 7.1 oz. with NiCd battery pack.

- * The original automatic tuning circuit gives even sensitivity over the entire frequency range.
- * Rugged and reliable double side glass-epoxy printed circuit board.
- * Powered by a rechargeable NiCd battery pack for cost-free operation.

2. SPECIFICATIONS

Frequency coverage	141.000MHz to 149.995MHz OR 151.000MHz TO 15
Receiving mode	Frequency modulation, ±5KHz narrow band.
Receiver system	PLL Frequency synthesized dual conversion superheterodyne
Sensitivity	0.2 microvolts at 12dB SINAD
Squelch sensitivity	0.2 microvolts at threshold, manual adjustable.
Selectivity	Less than 60dB at ±12KHz
Spurious & Image rejection	Less than 50dB (60dB optional)
Frequency stability	±0.001%
IF frequencies	1st 10.7MHz, 2nd 455KHz
Audio output power	100mW into 8-ohm load at 10% distortion.
Power consumption	Receive squelched, 25mA approx.
Power consumption	100mW audio output, 100mA approx.
Antenna system	Wire lead or optional "Mini helical" antenna.
Operating temperature	-10° C to +60° C
Battery compartment	4.8 Volts NiCd battery pack. 225mAH

OPERATIONAL PRECAUTION

Reception of excessively strong signal (over 1V/meter) may cause damage to the receiver transistors. Therefore, care must be made not receive in the neighborhood of a large power transmitting antenna.

RECEPTION

- (1) Connect an external wire lead antenna or mini-helical antenna to an ANT jack of the receiver.
- (2) Slide the switch(A) to ON or +5K position.
- (3) Turn SQL knob to counter clockwise position.
- (4) Adjust the VOL knob for the desired audio level when a signal or noise is received.
- (5) To eliminate the noise, turn SQL knob to clockwise until noise dies out. However, if the SQL knob is turned to its fully clockwise position, the receiver sensitivity may be reduced.
- (6) Set the desired frequency by pushing the digital push switch(G) and Slide the switch(A).
- (7) To turn the receiver off, slide the switch(A) to its OFF position.

STORAGE

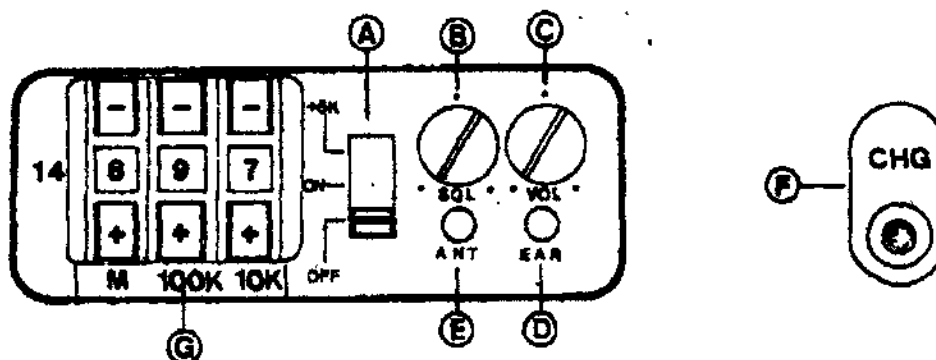
Avoid storing the set in a place exposed to direct sun or in a high temperature (+60°C or more) and high humidity(95% or more) environment.

MAINTENANCE

The cabinet of the AR-22 should not be opened except when adjustment and check out become necessary. If no measuring instruments are available, do not attempt servicing or any adjustments as the unit may become inoperative.

Servicing or necessary alignment should be performed by a qualified licenced technician only.

Figure 1. Top pannel controls



3. OPERATION

CONTROL LOCATION

Refer to figure 1, Top pannel controls, for a description of the function of each controls.

A. POWER ON/OFF AND 5kHz FREQUENCY ADDITIONAL SWITCH

Slide this switch to 0 or 5kHz position, the unit operates under receiving condition. This switch also works as the 5kHz frequency additional switch.

B. SQ(SQUELCH) LEVEL CONTROL

Clockwise rotation increase signal level required to defeat the squelch circuit and allow reception.

C. AF(AUDIO) LEVEL CONTROL

Clockwise rotation increase receiver audio gain.

D. EAR(EARPHONE) JACK

While the earphona is plugged into this jack, the audio from an internal speaker will be muted.

E. ANT(ANTENNA) JACK

Provide for an external wire lead or mini-helical antenna.

F. CHG(CHARGER) JACK back cover

For charging the NiCd battery pack of the AR-22.

G. FREQUENCY SELECTION SWITCHES

The two significant degits are already programmed at 140.000MHz(141.000-149.995MHz type) or 150.000MHz(151.000-159.995MHz type) and do not require a setting. The 3rd, 4th and 5th degits are to be set by digital push switch (G) on the panel. The least significant digit is set by the slide switch (A) for either ON or +5K. Simply flip up the switch and push it either (+) or (-) for proper frequency. Examples are shown below.

