



GILFER Associates, Inc.

RADIO MONITORING EQUIPMENT / SERVICES / PUBLISHERS / BOOKSELLERS

SHORT WAVE PRESELECTOR

Tunes 3.9 to 22.5 MHz in single band

Improves image rejection ratio of most receivers

Continuously variable gain from -40 dB to +20 dB

Wired for 117-volts a.c. -- power transformer isolation

Passband about 100 kHz (average at -3.0 dB points)

Vernier drive slo-motion calibrated dial scale

Uses two Fairchild 2N3564 npn r.f. transistors

Usable with any antenna -- any feedline

Not a kit -- ready to go when unpacked

RCA-type phono input (2) and output (1) jacks

One tuning range -- no band switching

PreSelector in-or-out bypass switch

Antenna (two possible) selector switch

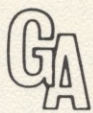
All solid-state -- very long life

Very low noise figure

Mounted in attractive metal cabinet

The GILFER A-20 PreSelector is a joint design project by Robert B. Cooper (CADCO) and Oliver P. Ferrell (GILFER). Final panel layout had not been selected at the time of this initial offering and a photo is not available. However, the A-20 will measure 3 1/2" H x 4" D x 8" W. This pre-production offering is made on a first-come first-served basis -- initial quantities will be limited. Shipped via UPS wherever possible. UPS COD \$10.00 down. Use your MasterCharge. All foreign and Canadian orders via International Money Order, please. Each A-20 PreSelector will be tested and is guaranteed for 90 days against manufacturing defects.

AVAILABLE FEBRUARY 18, 1972 SPECIAL PRE-PRODUCTION PRICE - \$48.00



PreSelector

MODEL A-20

GILFER Associates, Inc.

P.O. Box 239 Park Ridge, N.J. 07656



TECHNICAL SPECIFICATIONS

The Model A-20 PreSelector is an active radio frequency amplifying device tuned manually through the frequency range 4.0 to 22.0 MHz. The device is coupled to the input of a short wave receiver of comparable tuning range. One or two receiving antennas are coupled to the input of the device.

Radio signal amplification by the device is of the order of 18 to 20 dB with a noise figure of not more than 1.8 dB at any frequency. Amplification by the device may be adjusted manually within the range of -40 dB to the maximum of the device at the frequency to which it is tuned. The -3 dB points in the tuned pass-band are not less than 200 kHz apart at 4.0 MHz and 300 kHz apart at 22.0 MHz.

The electronic circuit of the device is contained on an epoxy-glass PC board. Two r.f. transistors (Fairchild 2N3564 or equivalent npn type) amplify the radio signals in a tuned emitter configuration. Bias to the first transistor has been optimized to virtually eliminate cross modulation under most operating conditions. The device will accept signals from any antenna feedline impedance without prior matching. The impedance of the output of the device is of the order of 60 ohms.

An ON-OFF power switch and a PREAMP IN-OUT switch are provided as operating conveniences. Power to operate the device is obtained from the 117-volt a.c. line at a current drain under 6 watts. The device is protected by a fuse and has power transformer isolation from the a.c. line. The device measures 8"

wide, 3 1/8" high and 5 1/2" (overall) deep. Weight of the device is 2 lbs.

CONNECTING THE A-20 PRESELECTOR

The A-20 PreSelector has three (3) RCA-type phono jacks mounted on the rear panel. Jacks labeled "A" and "B" are for two different receiving antennas. The jack labeled "AMPLIFIED OUTPUT" is used to couple the A-20 PreSelector to your short wave receiver. The RCA-type phono connection system is commonplace and -- when required -- a variety of special adapters are available to permit coupling the A-20 PreSelector to any antenna feedline termination or receiver input.

COUPLING TO SCREW TERMINAL STRIP: Prepare your own cable, or buy a Switchcraft Part No. 25AF84 hi-fi cable measuring 36" long. This cable has a molded RCA phono pin plug on one end and tinned wire leads on the other. Attach the tinned lead from the cable braid to the receiver "G" screw terminal and the center wire from the cable to the receiver "A" screw terminal. If a shorter cable is desired, substitute Switchcraft Part No. 25AC84 measuring 18" long. Plug the other end of the cable into the A-20 PreSelector "AMPLIFIED OUTPUT" jack.

COUPLING TO UHF COAX PANEL RECEPTACLE: For maximum efficiency a coax cable should be prepared from RG-58/U with a cable plug (JAN PL-259 or Amphenol 83-1SP) attached and soldered to one end and a Switchcraft No. 3502 shielded phono plug attached and soldered to the other end. Antenna feedlines now terminating in a PL-259 should use an Antenna Specialist adapter Type M-44 to couple to the RCA-type phono jack.

COUPLING TO BNC PANEL RECEPTACLE: For maximum efficiency a coax cable should be prepared from RG-58/U with a cable plug (JAN UG-88/U or Amphenol Type 31-002) attached and soldered to one end and a Switchcraft No. 3502 shielded phono plug attached and soldered to the other end. Antenna feedlines now terminating in a BNC connector should use a Pomona Electronics Model 2957 BNC to RCA phono pin plug adapter.

COUPLING TO MINI-PHONE PLUG: Buy a Switchcraft Part No. 40DF25 hi-fi cable measuring 36" long. Plug the mini-phone cable end into the receiver and the RCA-type phono pin plug into the "AMPLIFIED OUTPUT" jack on the PreSelector.

HOW TO USE THE A-20 PRESELECTOR

The A-20 PreSelector has three design objectives of interest to short wave listeners:

1. The PreSelector amplifies signals by at least 3 S-units.
2. The PreSelector improves the signal+noise to noise ratio of most receivers enabling reception of weak signals.
3. The PreSelector substantially reduces the strength of images in single conversion receivers (such as the Hammarlund HQ-200, Eddystone EC-10 MkII, Realistic DX-150A and Hallicrafters SX-133).

Operating the A-20 PreSelector is very simple, but perform the following test to double-check initial operation.

After coupling the A-20 PreSelector to your receiver and antenna(s), flip the "PREAMP IN-OUT" switch on the rear of the cabinet to "OUT" and tune your short wave receiver to WWV on 15.0, 10.0 or 5.0 MHz. Select a signal frequency that registers about S6 on your receiver S-meter.

Turn "ON" the A-20 PreSelector power switch -- also mounted on the back of the cabinet. Note that the power switch moves up and down ("ON" is up) and that the "PREAMP IN-OUT" switch moves left to right ("IN" is to the left as the PreSelector faces the operator). Rotate the front panel "GAIN" control to about a 2 o'clock position and adjust the main tuning dial on the PreSelector to peak the received signal according to frequency.

If the receiver S-meter read S6 with the A-20 PreSelector out of the circuit, the S-meter should now register S9, or better. This increase indicates that the PreSelector is amplifying the signal. Comparable gain should be observed at other frequencies within the range of the PreSelector.

Rotate the "GAIN" control to maximum clockwise for maximum gain and counter clockwise to attenuate signal input to the receiver. Choose a "GAIN" control setting that improves the signal+noise-to-noise ratio on weak signals. It is rarely necessary to use the maximum gain of the PreSelector.

Tune your receiver about 200 kHz above or below the WWV signal. Note that there is a decrease in receiver sensitivity. Carefully tune the PreSelector to the new frequency and observe the rise in background noise level or increase in received signal strength (if one is present) on the new frequency.

Tracking (i.e., simultaneous manual tuning of the PreSelector in step with your receiver to the same frequency) is not required. The PreSelector has a slightly broad passband. This passband has been selected to ensure operator convenience without deterioration of the noise figure and image rejection features. If your receiver has images, the PreSelector should decrease their strength by 4 to 6 S-units.

Use the "ANT" selection switch to choose the best antenna for the frequency and station being tuned.

During periods of the year when thunderstorms are prevalent in your locality, leave the "GAIN" control on the PreSelector at the maximum counter-clockwise position when the PreSelector is not in use. This setting will protect the transistors and simultaneously bleed off static electricity from the receiving antenna.

The "PREAMP IN-OUT" switch by-passes the PreSelector when the receiver is tuned outside the 4.0 - 22.0 MHz range. This switch also permits a quick check (or demonstration) on the A-20 PreSelector operation.

MAINTENANCE AND SERVICING

The A-20 PreSelector has a ninety day warranty from date of sale. GILFER Associates, Inc. agrees to remedy any defect in material or workmanship, provided the unit is delivered to us for our examination with all shipping charges prepaid.

This warranty does not extend to damage caused by misuse, neglect, alteration of wiring, accidents, or failure to follow the instructions outlined above.

GILFER Associates, Inc. reserves the right to make such changes in this product as deemed necessary without obligating itself to effect such changes in previously manufactured models.

The A-20 PreSelector should never require servicing. At any time that a malfunction occurs the user should contact GILFER Associates, Inc. detailing the nature of the fault. DO NOT return an A-20 PreSelector to GILFER without prior authorization.