

# AUDIO PROCESSOR MODEL AP-1D

## What is an Audio Processor !

AP-1D picks up the desired signals only from reproduced receiving sounds by voice processing through connection to the head phone terminal of your radio receiver or transceiver. It improves SN at the same time by narrowing the bandwidth. For the reason this machine is called an audio processor. AM and BCL fans, to say nothing of SSB and CW fans, all agree that the results which this machine bring are outstanding.

## Functions of Each Section

### (1) Band-pass Filter (BAND PASS)

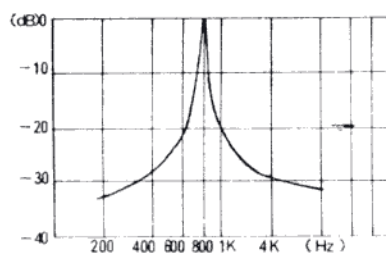
Based on the NBVM(Narrow Band Voice Modulation) a hot topic recently, this machine reproduces voice with a bandwidth of only 900Hz between 600 and 1500Hz. Even a conventional SSB requires 300-3000Hz. The difference in carry point and that ear-offending noise of radio interference experienced in the QSO of SSB can be cut flat by using this machine. Noise over 1500Hz can also be eliminated for clear sound which can be listened to for a long time without feeling tired.

### (2) Notch Filter (NOTCH)

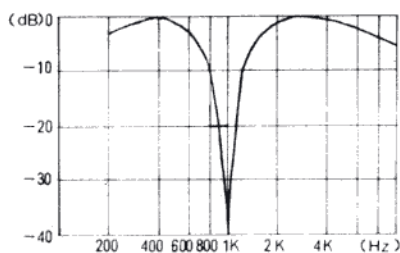
This filter removes single frequency interference contained in receiving signals. It removes beat which mixes while receiving, or interference at specific locations. The frequency and dip point can be adjusted freely.

### (3) Peak Filter for CW (PEAK)

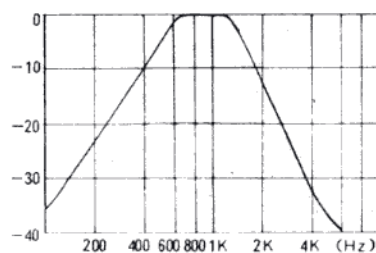
This filter is especially for CW, and is a band-pass filter with an amazingly narrow band of 40 - 50Hz at -6dB. Just imagine that desired and long awaited station coming in strong with that awful QRM toned out. The tuning range at the peak point can be changed between 500Hz and 1000KHz. The machine demonstrates its power when catching signals heard very slightly on the side of a powerful station when trying DX QSO. AP-1D incorporates a low-frequency amplifier with a speaker to make the desired signal audible after it has passed this filter. It also contains a constant-voltage regulated power supply for long trouble-free operation. Enjoy fine QSO free from interference, best, high-frequency noise, and tiredness. Once you use it, you won't want to give it up.



Peak Filter Characteristics



Notch Filter Characteristics



Band-pass Filter Characteristics

- 1) AF GAIN
- 2) NOTCH FREQUENCY
- 3) NOTCH DIP
- 4) PEAK FREQUENCY
- 5) HEADPHONE -- JACK
- 6) POWER SUPPLY SWITCH
- 7) INPUT CHANGEOVER SWITCH
- 8) FUNCTION SWITCH
- 9) TRANSCEIVER PHONE - JACK

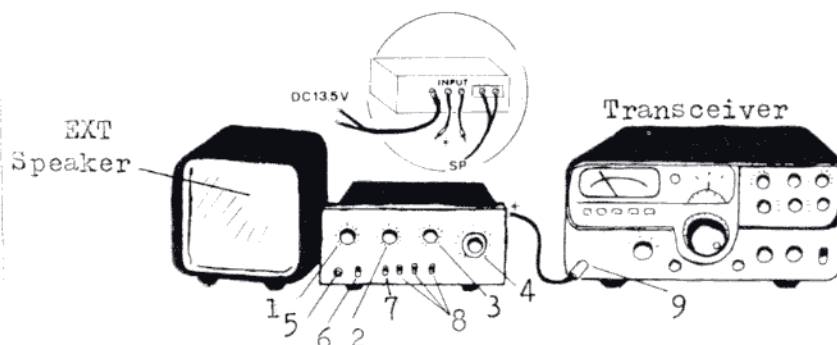


Fig.1 AP-1D Connections and Functions of Knobs

### Operating Instructions

Make connections as shown in Fig.1. Use a cord with plugs at both ends which has been supplied as an accessory between the transceiver and AP-1D. Some rigs require a 6 $\phi$  jack as the head phone terminal. Use a double 6 $\phi$  plug or a convertible plug.

#### (1) When Receiving SSB (Same for AM and FM)

Turn off the function switches (PEAK, NOTCH and BAND PASS) and listen to the SSB station. Do not turn the AF GAIN volume of the receiver (transceiver) too high; otherwise the machine saturates or its tone quality deteriorates. Turn 1/3 - 1/2, then select a suitable sound volume with the AF GAIN of the AP-1D. From here turn on the BAND PASS switch.

High-frequency sound is cut flat and the noise level is lowered. This unit is particularly powerful in eliminating interference.

When offending beat or interference, even in the BAND PASS mode, is present, turn on the NOTCH filter switch and tune in to the frequency of the disturbing wave with the FREQ and DIP knobs, and the interference is cleanly removed. For SSB, AM, or FM, the PEAK and BAND PASS filter switches only can be turned off while turning the NOTCH switch.

The knack for adjusting the NOTCH switch is to tune the FREQ knob to the frequency (beat, for example) that is desired to be removed first. Seek points that can be further erased with the DIP knob. Repeat this process 2 - 3 times to perfect the process.

#### (2) When Receiving CW

Use the BAND PASS knob when there is less interference. Use the NOTCH knob when required. Turn on the PEAK switch, while turning off all the other function switches when interference is band.

Turn the PEAK FREQ knob slowly. When tuned in to the desired signal, the signal suddenly becomes strong. Once this operation has been tried and experienced, its easy.

Combining a speaker larger than 10cm will give you a tone which is easy to hear and which demonstrates the excellence of the AP-1D.

An 8 ohm head phone for would be most suitable communication purposes. When using stereo head phones, use both right and left ones serially, or in parallel.

## Specifications

- (1) Filter
  - (A) Narrow band-pass filter (PEAK)  
500 - 1000Hz variable
  - (B) Band-pass filter (BAND PASS)  
600 - 1500Hz fixed
  - (C) Narrow band attenuator (NOTCH)  
600 - 3000Hz variable
- (2) Selection functions  
Single and serial use possible
- (3) Input impedance and level 2.5K ohm  
-30dB (RX 8 ohm SP terminal can be connected)
- (4) Output impedance and power supply 8 ohm 0.5W
- (5) Power Supply  
DC 13.5V 150mA
- (6) Selectivity
  - (A) Narrow band-pass filter  
Over 25dB at 1 oct relative to the center frequency
  - (B) Band-Pass filter  
Out-band attenuation 1 oct, over 10dB
- (7) Dimensions  
W200 x H66 x D153mm
- (8) Weight 1.1Kg
- (9) Accessory  
Cord with plugs on both end  
Adapter (6 $\phi$  - 3.5 $\phi$ )

## AP-1D Blok Diagram

