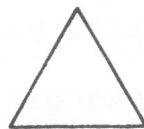


904C FILTER COUPLER



NOTATIONAL SYMBOL:



V.C.B.P.
V.C.B.R.

ELECTRONIC SPECIFICATIONS

All specifications for input and output impedances, rolloff curves, regeneration performance bandwidth, gain, clipping, noise, etc., are set by the 904A and 904B filters themselves. The 904C filter complement acts only as a coupling instrument for the other two filter modules.

Center Frequency Knob: Sets nominal center of passed or rejected band +/-6 octaves: -6 = 5Hz: 0 = 320Hz: +6 = 20kHz

Bandwidth knob: Sets bandwidth or width of band reject nominally one octave per volt. Width of passed band = 0 to +3 volts. Width of rejected band = 0 to -3 volts.

Response to Center Frequency Control Inputs: Algebraic sum of control input voltages moves center frequency one octave per volt, around the nominal control setting.

Response to Bandwidth Control Input: Control input sum expands or reduces the passed or rejected band by one octave per volt around the manual control setting.

PIN ASSIGNMENTS

1	+12.00 volts at 30mA
2	Gnd
3	-6.00 volts at 15mA
8	Signal Input 904A Lowpass Filter
10	Signal Input 904B Highpass Filter
14	Control Node 904B {pin 14}
15	Control Node 904A {pin 15}
19	Signal Output 904B
21	Signal Output 904A

FUNCTION DESCRIPTION

The 904C Filter Coupler is a connecting module which combines the functions of the 904A Lowpass and 904B Highpass Filters together. In the "off" position, the Highpass and Lowpass Filters are disconnected from the 904C and may be used independently. When switched to the "Bandpass" mode, Highpass and Lowpass Filters are coupled in parallel to process a central band of frequencies - deleting both bottom and top. The bandreject mode presents the inverse relationship, rejecting a central frequency band, AND PASSING ONLY THE LOWEST AND HIGHEST FREQUENCY COMPONENTS. Voltage controlled bandwidth and center frequency controls are included on the coupler. Bandwidth can be extended to three octaves with manual settings or control voltage. Center Frequency ranges from 5Hz to 20kHz, via manual or voltage controlled settings.

When using the 904C for Bandpass or Bandreject filtering, the following standard settings should be observed:

904A Fixed Control Voltage	=	+6
904A Frequency Range	=	2
904B Fixed Control Voltage	=	-1
904B Frequency Range	=	Low

NOTE: Passband settings = Bandwidth knob plus control voltage.
Notchwidth = Minus bandwidth knob minus control voltage.

MUSICAL APPLICATION

The 904C Filter Coupler has a broad variety of applications. It simplifies the combined use of the high and lowpass filters by placing all controls within one module. Original timbres useful for both conventional and non-standard performance techniques are achieved with both Bandpass and Bandreject modes. In either mode the amplitude relationships of a standard harmonic series can be radically altered to depart substantially from any acoustically generated sound or electronic simulation. Some instrumental simulations, like full string section sounds, are more effective when bandpass filtering deletes the fundamental strength as well as the "buzziness" of upper harmonics. Utilizing the bandreject mode for percussive rhythm tracks can prove much more interesting than standard "rhythm boxes" if low frequency controls are put on the bandwidth input, with pink noise as the signal.

The signal processing capabilities of the Filter Coupler present a wide variety of possibilities from rumble and hiss deletion, to a very clean "phasing" effect, obtained by creating a notch in the audio signal, which can be moved in creative and predictable patterns using low frequency control voltages.