



15385 Carrie Drive
 Grass Valley, CA 95949
 Office: (530) 477-8400
 Tech. Support: (530) 477-8402
 FAX: (530) 477-8403
 Sales: (800) 874-8663
 Email: tech@norcommcorp.com
 Web: www.norcommcorp.com

MODEL NC110 BAND-PASS FILTER INSTRUCTION MANUAL

INTRODUCTION

The Model NC110 is a high stability, field tunable audio Band-Pass Filter designed to pass a narrow band of frequencies and reject all others. The NC110 is generally used when it is necessary to isolate a single tone for decoding during the presence of other tones and/or voice, such as a tone plus voice control system. There are three versions: The NC110-A, field tunable from 800Hz-3000Hz, the NC110-B, field tunable from 250Hz-1500Hz and the NC110-C, field tunable from 67Hz-250Hz.

SPECIFICATIONS

	<u>NC110-A</u>	<u>NC110-B</u>	<u>NC110-C</u>
SIGNAL FORMAT:	Single tone	Same	Same
FREQUENCY RANGE:	800 to 3000 Hertz	280 to 1500 Hertz	67 to 250 Hertz
FREQUENCY STABILITY:	±0.2% OVER		
TEMPERATURE RANGE		Same	Same
INPUT SIGNAL LEVEL:	No greater than 1VRMS	Same	Same
INPUT IMPEDANCE:	1 Meg ohm unbalanced	Same	Same
INSERTION LOSS:	0dB nominal @ center Freq.	Same	Same
BANDWIDTHS:			
@ 3dB:	B.W. = ±1.5% nomina	Same	Same
@ 6dB:	B.W. = ±2.5% nominal	Same	Same
@ 10dB:	B.W. = ±4.5% nominal	Same	Same
@ 20dB:	B.W. = ±15% nominal	Same	Same
FILTER DISTORTION:	< 1% @ 1VRMS	Same	Same
OUTPUT LEVEL:	Dependent on impedance selected	Same	Same
OUTPUT IMPEDANCE:	Selectable 1K or 56K ohms	Same	Same
OPERATING TEMPERATURE:	-20°C to +80°C	Same	Same
OPERATING VOLTAGE:	5.5 to 24VDC	Same	Same
OPERATING CURRENT:	<10mA	Same	Same
SIZE: 1.12"W x 0.92"L x 0.185"H	Same	Same	
MOUNTING:	Double sided adhesive tape	Same	Same
INTERFACING:	12" Flying color coded leads	Same	Same

--SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE--

WARRANTY POLICY

NorComm products are unconditionally guaranteed for two (2) years on materials and labor from date of purchase. All Warranty repairs must be performed at NorComm's Customer Service Department in Grass Valley, CA. Units under warranty can be returned for repair or replacement without prior authorization, however, a letter explaining the defect should be enclosed with the unit. Out of warranty units returned constitute Purchaser's authorization for NorComm to repair or replace equipment and to invoice Purchaser for any and all reasonable costs of repair labor, parts and freight.

NorComm shall not be obligated to repair or replace equipment rendered defective, in whole or in part, by causes external to the equipment, such as, but not limited to, catastrophe, power failure, or transients, environmental extremes, improper use, and maintenance or interfacing applications. NorComm further assumes no liability for any incidental or consequential damages which may result from the applications of its products by the Purchaser or any other party.

INTERFACING

The Model NC110 is supplied with a piece of double sided adhesive tape to eliminate the need for mounting hardware. Remove the protective covering from one side of the tape and apply to bottom side of P.C. Board. Now remove protective cover from remaining side of tape and adhere unit to desired location making sure that mounting surface is clean and dry to insure positive mounting. For maximum operational reliability the decoder should be located away from intensive R.F. or magnetic fields and all leads should be kept to minimum lengths.

NOTE: **DO NOT** connect band-pass filter in series with speaker output leads or exceed 1VRMS input to filter as the output signal level will flatten resulting in filter distortion and reduction of unwanted signal attenuation. Recommended installation would be to interface band-pass filter in series with low level, high impedance circuitry of pre-amp audio stage not exceeding 1VRMS.

FREQUENCY ADJUSTMENT

- [1] RED (+) Connect to 5.5 to 24VDC.
- [2] BLACK (-) Connect to system ground.
- [3] Apply tone frequency to [GREEN] input lead. (Note: Audio input not to exceed 1VRMS.)
- [4] Connect scope or A.C. voltmeter to the [YELLOW] lead.
- [5] Adjust "Center Frequency" potentiometer (R1) for maximum tone level.

NOTES: 1) For balanced audio system applications, use matching transformers on input and output.
 2) If a limiter or compressor stage is used in the audio circuitry, install the NC110 Band-Pass filter following the output of this circuitry to avoid negating the performance of the filter.

