



**TONE SIGNALLING PRODUCTS**  
**NORCOMM**<sup>TM</sup>  
CORPORATION

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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 two versions: The NC110-A, field tunable from 800Hz-3000Hz, and the NC110-B, field tunable from 250Hz-1500Hz.

**GENERAL:**

Although the Model NC110 Band-Pass Filter has been engineered for maximum reliability and ease in interfacing, should you require technical assistance or detailed information for a specific application, i.e., interfacing special timing or frequency formats, please contact our Customer Service Department at (916) 477-8400.

**SPECIFICATIONS**

<u>MODEL:</u>	<u>NC110-A</u>	<u>NC110-B</u>
■Signal Format:	Single tone	Same
■Frequency Range:	(800Hz to 3000Hz)	(250Hz to 1500Hz)
■Freq. Stability:	Better than $\pm 0.5\%$	Same
■Input Sensitivity:	10mVRMS to 2VRMS	Same
■Bandwidth	$\pm 2.5\%$ Nominal @ 6dB $\pm 4.5\%$ Nominal @ 10dB	Same
■Insertion Loss:	0dB Nominal @ Center Freq.	Same
■Input Impedance	1 MegaOhm D.C. Blocked to 50V	Same
■Filter Distortion:	Output Nominally 1% @ 1VRMS or less	Same
■Output Level:	2VRMS (no load)	Same
■Output Impedance:	Selectable D.C. Blocked to 50V	Same
■Operating Voltage	10 to 25VDC	Same
■Operating Current	5mA Nominal	Same
■Operating Temp.:	-30°C to +70°C	Same
■Size:	1.0"W x 1.15"L x .4"H	Same
■Mounting:	Double sided adhesive tape	Same
■Interfacing:	18" flying colored leads	Same

---SPECIFICATIONS ARE NOMINAL AND SUBJECT TO CHANGE WITHOUT NOTICE---

# INTERFACING

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The Model NC110 comes with a piece of double sided adhesive tape to eliminate the need for mounting hardware. When tuning of the filter is completed, remove the protective covering from one side of the tape and apply to bottom side of P.C. Board. Make sure that location of mounting surface is clean and dry to insure positive mounting. Now remove protective cover from remaining side of tape and mount unit to desired locations. To insure maximum operations reliability the filter should be mounted away from intensive R.F. and magnetic fields, and all leads should be kept to minimum lengths to avoid hum pick up on audio lines.

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## FREQUENCY ADJUSTMENTS

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- 1) Apply +10VDC to 25VDC to [RED] lead.
  - 2) Apply - Ground to [BLACK] lead.
  - 3) Apply tone frequency to [GREEN] input lead.  
[Note: Audio input not to exceed 1VRMs]
  - 4) Connect scope or A.C. volt meter to [YELLOW] output lead.
  - 5) Now adjust "center frequency" Pot R12 for maximum output level.
  - 6) Note: DO NOT OVERDRIVE the input stage to the filter [2VRMs Max.], as the output signal level will flatten above 2VRMs resulting in an incorrect center frequency and signal distortion.
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## WARRANTY POLICY

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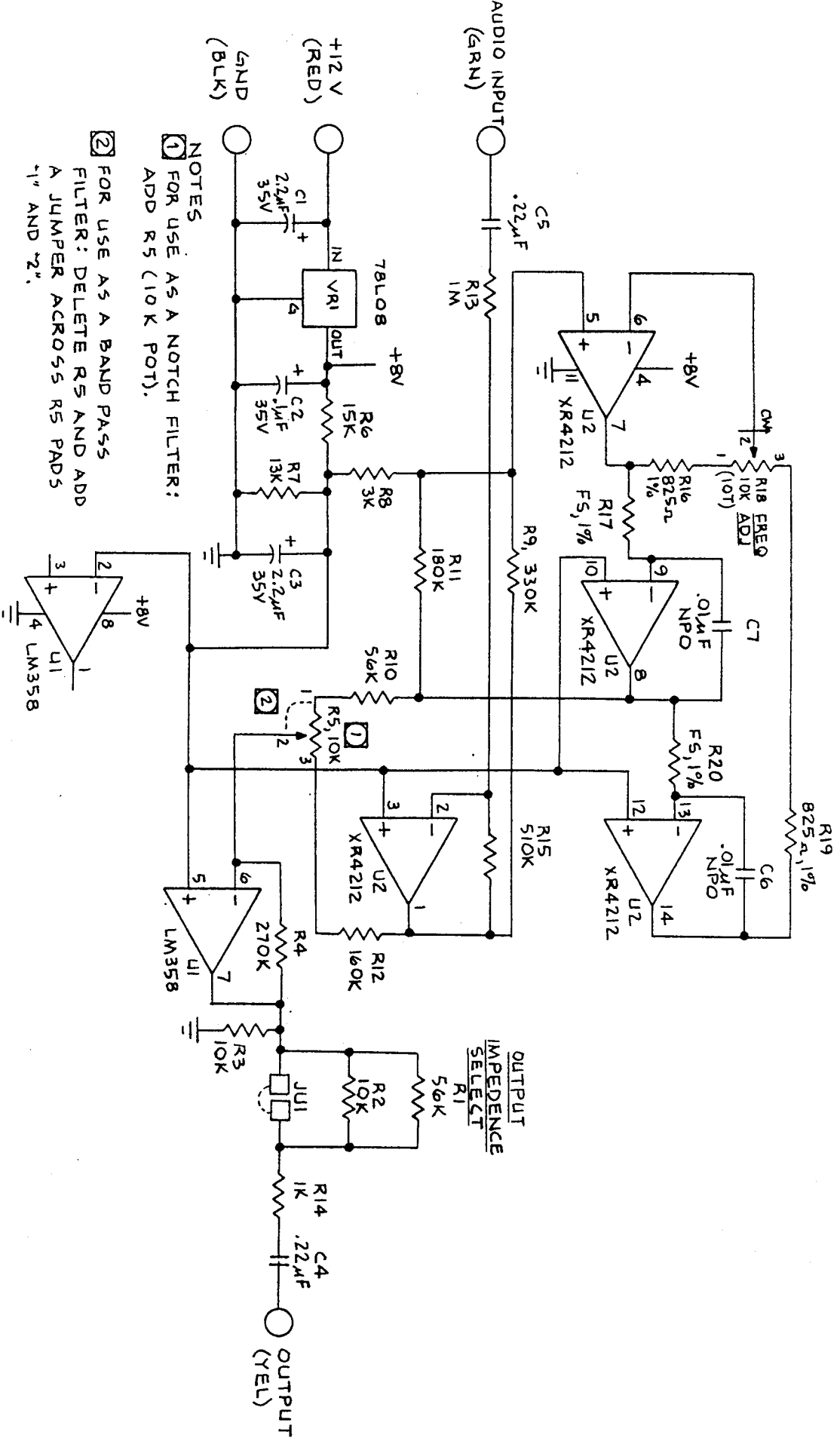
NorComm products are unconditionally guaranteed for two (2) years on materials and labor from date of purchase.

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.

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# SCHEMATIC



# COMPONENT LOCATOR

