

# ANR572



## AUTOMATIC NOISE REDUCER

INSTRUCTION MANUAL  
IB 631503

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## SHIPPING INSPECTION

Remove from shipping container and inspect for shipping damage. If any damage is detected contact the shipping carrier for further instructions. The ANR572 is normally shipped fully tested and ready for use in the PMS500 Power Supply & Mainframe. If you ordered only the ANR572 Card, please refer to the (MODULE CONFIGURATION) section of this manual for instructions on assembly into your existing PMS500 mainframe.

## MODULE CONFIGURATION

The ANR572 Noise Reducer has three user configurable features. The unit when shipped is configured for 600 Ohm input termination, Dot Mode VU Meter Display, and 0dBm audio output.

To select High Impedance Input for audio bridging applications, see the Program Jumpers at the rear of the PC Board near the input connector. Jumper ON equals 600 Ohm termination, Jumper OFF equals Hi-Z input for bridging audio applications.

Next you may select the Average Program Level (APL) output. See the Program Jumpers at the rear of the PC Board near the output connector. Jumper OFF equals 0dBm, +4 equals +4dBm, and +8 equals +8dBm.

Next you can select the display mode of the Bar Graph VU Meter. Locate the Program Jumper near the front of the PC Board marked J-3. Jumper OFF equals Dot Mode, jumper ON equals Bar Mode display. CAUTION: DO NOT ADJUST ANY OTHER CONTROLS OR THE UNIT CALIBRATION WILL BE LOST.

## INSTALLING MODULES

The PMS500 is a mainframe power supply for mounting FM SYSTEMS 500 series equipment cards. Up to three circuit board modules may be accommodated. These modules may be readily installed in the field with common hand tools; no soldering is required.

### CIRCUIT BOARD MODULE INSTALLATION

Select which of the three positions will be occupied by the new circuit board module. Disconnect the power and remove the mainframe from the rack. Remove the bottom cover and the 4-40 x 1/4" mounting studs where you wish to mount the circuit card. Next remove the rear metal panel in preparation to mounting the new card. Then remove the old Nameplate by carefully lifting one corner and slowly peel the nameplate from the aluminum panel.

Install the new circuit board module with the components toward the top cover. Take care to avoid moving any of the pre-set controls. Slip the connectors through the holes in the rear panel and drop the front edge of the circuit board onto the brackets attached to the front panel.

## INSTALLING MODULES (cont).

Next install two 3/8" -32 nuts and lock washers on the outermost "RCA" connector barrels. Gently tighten the nuts while holding the circuit board against the front mounting brackets. Install two 4-40 x 1/4" studs (without the lock washers) to secure the front of the board to the mounting brackets.

Next remove the top cover from the mainframe and connect the power supply and the circuit card with the power wire harness that is supplied. The power to multiple cards is wired as a "daisy chain". Push any L.E.D. (Light Emitting Diodes) straight into the appropriate mounting holes. Mount switches according to the panel graphics.

Temporarily set the new nameplate in place and check that all necessary cutouts are clear. Remove the paper peel coat from the adhesive backing of the nameplate then slide the name plate down around the L.E.D.'s onto the panel. Press gently to set the adhesive. Mount any additional panel components (switches, meters, potentiometer, etc.) with the hardware supplied. Gently tighten the fasteners to secure the components: DO NOT OVER TIGHTEN. Mount the new rear panel connector identification stripes on the rear of the mainframe. Connect input, output, and power cables. The green "power-on" indicator should be illuminated.

### CAUTION

Most circuit board modules have several adjustments which are carefully factory set with precision instruments for optimum performance. Change only those which must be adjusted. Some controls when mis-adjusted produce little change under "normal" operating conditions, but can seriously reduce the ability of the unit to function correctly under other conditions which may be encountered. Therefore, if you must adjust a control, place a mark on it before moving it, so that it may be returned to its original setting with reasonable accuracy.

Disconnect power. Replace top and bottom covers and mount mainframe to rack. Reconnect power and check for normal operation of each module.

## CABLING

Audio connections to the unit are made to a removable connector block at the rear of the unit. For ease of connection, unplug the connector block, connect wiring, and plug block back into unit. Connect wiring by inserting stripped wires into the appropriate holes in block, and secure by tightening the screws on top. **PUSH FIRMLY ON THE CONNECTOR BLOCK TO SNAP IT INTO PLACE.**

From a BALANCED output source to ANR572 input:

Refer to the rear panel for connector markings. Connect both Right and Left audio input as follows.

SOURCE TIP or HI - to input T  
SOURCE RING or LO - to input R

From a BALANCED output source to ANR572 input: (cont.)

Connect shield to GND at one end only, grounding at the signal source end is preferable. Connecting shield at only one end prevents current flow in the shield due to differences in AC ground potential between equipment, thus preventing ground loop-induced hum. The ANR572 input amplifier is active, balanced 600 Ohm or Hi-Z (programmable).

From an UNBALANCED output source to ANR572 input:

CENTER (SIGNAL) CONDUCTOR - to T  
SHIELD - to R

From ANR572 output to a BALANCED input:

Connect both Right and Left audio Outputs as follows.  
OUTPUT T - to TIP or HI  
OUTPUT R - to RING or LO  
GND - Connect shield at ANR572 only.

From ANR572 output to an UNBALANCED input:

OUTPUT T - to center conductor  
OUTPUT R - no connection  
GND - to shield

The output is balanced, capable of driving loads of 600 Ohms and higher with low distortion. Multiple output loads can driven but they must be high impedance.

MONO AUDIO SET-UP

For MONO operation, the inputs to the ANR572 MUST be paralleled, so that both left and right inputs have equal levels. It is important that the polarity is correct. Connect the left T to right T, and the left R to right R at the input side of the ANR572 connector block.

With this mono connection, either or both left and /or right OUTPUTS can be used. (Do not parallel the left and right audio OUTPUTS of the ANR572).

OPERATION

The ANR572 Stereo Audio Noise Reduction processor is an advanced audio noise reduction system based on the proprietary HUSH circuitry that provides a 4 to 1 reduction in noise (up to 25 dB) on any noisy audio programming.

The HUSH process combines a Dynamic Filter and a Downward Expander to provide a high level of noise reduction effectiveness without the sonic artifacts normally associated with other noise reduction systems. The Adaptive Threshold circuitry detects signal level changes and dynamically adjusts both the Dynamic Filter and Downward Expander thresholds as needed, providing optimal noise reduction.

## OPERATION (cont.)

Noise Reduction level is indicated by a nine-segment color LED display. The display indicates the level of noise reduction being exerted on the audio at all times. It reads from 0dB to 22dB of noise improvement.

The audio outputs are balanced and low impedance to minimize the frequency response roll-off characteristics of twisted pair audio cable. The output level is field selectable to 0dBm, +4dBm, and +8dBm APL (Average Program Level)

A front panel switch is available to check the noise reduction system by ear on live program material. This switch makes it easy to do listening tests for proof of performance.

## INPUT AUDIO LEVEL SET-UP

We recommend that the Noise Reduction mode be switched OFF for setting the input level. This makes the display easier to read.

Feed audio program material at normal level and locate the input level control on the front right hand side of the unit. Adjust the Input Control until the lower LED display indicates frequent peaks on the highest green LED. Occasional peaks into the red LED's are OK. This display responds like a VU meter, so set your level as you would using a VU meter.

If a test tone is used to set the input level, be sure that the tone is at the normal "0 VU" level of the source.

The ANR572 has an overload protection function that activates at 14dB above the "0" VU level indication (with sine wave tone input). The purpose of this is to avoid clipping distortion and makes the unit very forgiving of the occasional over-levels that are hard to avoid in the real world. The "peak" LED above the Input Level control will light when 1dB of protection is activated. It is OK for infrequent peaks to flash the "peak" LED, since the overload protection action creates negligible audible degradation. Avoid setting the input so high that the "Peak" LED is constantly lit. If more conservative operation is desired just back off the input level so that the "Peak" LED is almost never lit. Optimum noise reduction is achieved with program level at a normal 0 VU level.

## NOISE REDUCTION DISPLAY AND MODE SWITCH

The Noise Reduction display indicates the amount of noise reduction, in Decibels, applied to the audio. If the display reads "0", then no noise reduction is being applied to the signal, either because the signal has very little noise to remove, or the Noise Reduction switch is OFF.

To make a listening test to confirm performance, switch the Noise Reduction switch ON and OFF while listening to a noisy source. Remember that the lower LED display is a VU meter showing the relative input level, and the upper LED display shows the amount of noise reduction.

## CARE AND MAINTENANCE

There are no periodic calibration or maintenance adjustments required and no user adjustable controls inside the unit. If the unit fails, it should be returned to the factory for repair. Call the factory at 800-235-6960 and ask for an RMA number for repair return if the unit requires repair.