

### OPERATING INSTRUCTIONS



#### DESCRIPTION

The ALTEC 1588C Microphone Preamplifier is a sealed, plug-in, solid-state module with a transformer-isolated input and superb noise characteristics. The built-in transformer provides the preamplifier with a balanced and isolated input for protection from RF and other stray fields normally induced on low-level microphone lines, and may be strapped to supply a phantom voltage for condenser microphones.

The 1588C may be used with power supply voltages ranging from +12V dc to +20V dc. The 1588C draws a maximum of 13 mA dc from a 12V supply and 20 mA dc from a 20V supply. Figure 1 illustrates typical 1588C performance.

The 1588C is used with an input from a microphone. Wiring to the intended mounting socket for the 1588C should be in accordance with Figure 2.

#### SPECIFICATIONS

Type:	Plug-in solid-state preamplifier with transformer-isolated input and current limited phantom supply to input transformer center tap
Gain:	34 dB, switchable to 20 dB
Power Output:	+12 dBm into 600 ohms with 12V dc applied at less than 0.3% THD from 30 Hz to 20 kHz; less than 0.05% THD from 50 Hz to 20 kHz +17 dBm into 600 ohms with +20V dc applied at less than 0.4% THD from 30 Hz to 20 kHz; less than 0.06% THD from 50 Hz to 20 kHz

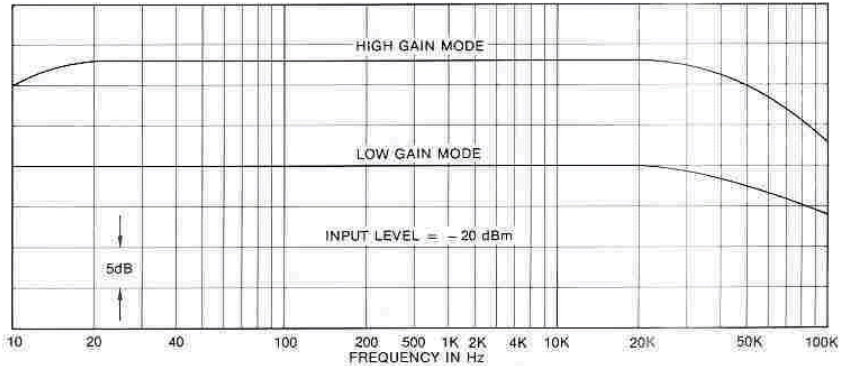


Figure 1a. 1588C Frequency Response

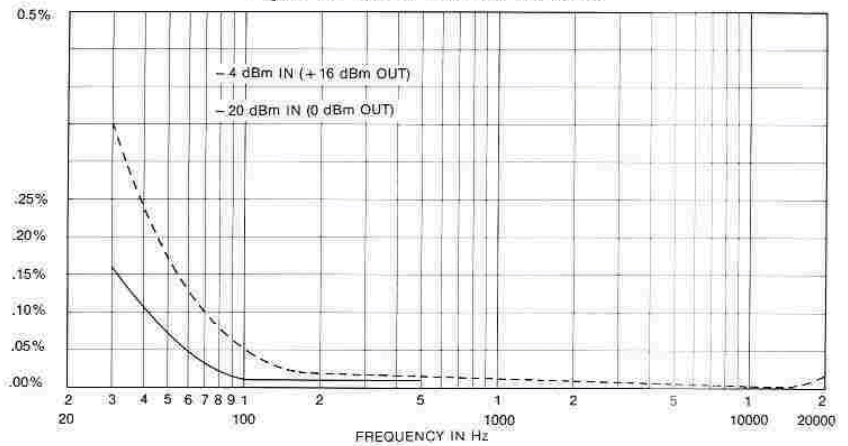


Figure 1b. 1588C Distortion vs. Frequency  
(Low Gain Mode)  
150Ω Source Impedance  
600Ω Load Impedance

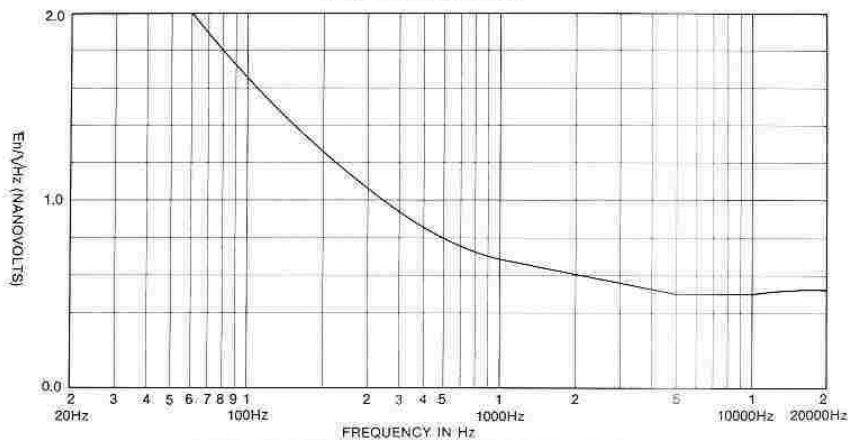


Figure 1c. 1588C Typical Input Noise Spectrum

Frequency Response:  $\pm 0.15$  dB from 20 Hz to 20 kHz  
 $\pm 1$  dB from 10 Hz to 30 kHz

Equivalent Input Noise Level: Equal to or greater than  $-129$  dBm

Source Impedance: 150 ohms

Load Impedance: 600 ohms

Output Impedance: Less than 10 ohms

Operating Temperature Range: Up to  $55^{\circ}\text{C}$  ( $131^{\circ}\text{F}$ )

Power Requirements: From +12V dc at 13 mA  
to +20V dc at 20 mA

Shielding: Greater than 105 dB

Termination: Octal plug (mates with standard octal socket)

Dimensions: 1-5/16" diameter  $\times$  1-13/16" seated height

Weight: 2.4 oz.

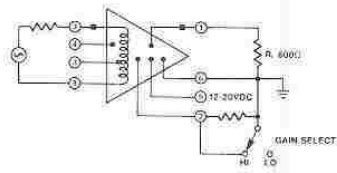


FIGURE 2. 1588C CONNECTION DIAGRAM

1) ■ INDICATE POLARITY 1 ON POSITIVE GOING SIGNAL  
2) TO PROVIDE CURRENT LIMITED (25MA) PHANTOM VOLTAGE TO PRIMARY CENTER TAP OF INPUT TRANSFORMER; STRAP 3, 4 ON OCTAL SOCKET  
3) SOURCE GENERATOR IMPEDANCE SHOULD BE 150 OHMS TO MAINTAIN FREQUENCY RESPONSE

Figure 2. 1588C Connection Diagram

### INTERCHANGEABILITY

The 1588C is interchangeable with the 1588B if pins 2 and 6 of the mounting socket are strapped. All applicable ALTEC equipment of current manufacture, in which the preamplifier may be used, have pins 2 and 6 connected, but certain older units may require addition of this strap.

The gain and subsequent overload characteristics of the ALTEC 1588C Microphone Preamplifier may be externally con-

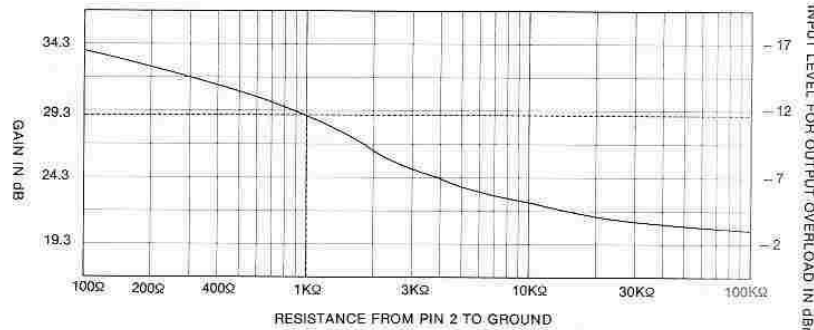


Figure 3. Overload and Gain Versus Gain Control Resistance

trolled by an external resistor. The range of gain obtainable and the resultant overload characteristics are shown in Figure 3. To use the graph for determination of the external resistance value, either the desired gain may be selected from the left side of the graph, or the overload point (in dBm) may be selected from the right side of the graph. A horizontal line is drawn from the selected point to the intersection with the curve. A vertical line from this intersection to the base of the graph provides the resistance value for operation at the selected conditions.

The following example is typical. Assume an input level for overload of  $-11.5$  dBm on the right side of the graph and draw a horizontal line to the intersection of the curve. A line from this point to the base line shows a resistance value of 1K ohms is required. For this value a gain of 29 dB is obtained from the 1588C.

The external resistor is connected between pins 2 and 6 of the octal mounting socket. The resistor may be mounted directly on the socket. If it is desired to include a switch on the control panel, the resistor should be placed on the switch and then connected from the switch to the socket by either a twisted pair or a shielded pair.

### INSTALLATION

Each preamplifier should be carefully inserted in its mounting socket to prevent possible damage to the locating key or connector pins of the plug and/or socket.

When driving the 1588C from an unbalanced source, it is recommended that

the phantom supply be decoupled, as up to 25 mA will otherwise appear across the primary of the input transformer. Either of the following methods will suffice:

1. Clip the jumper between pins 3 and 4 on the octal socket

— or —

2. Install two 100-microfarad capacitors between the source and the 1588C as shown in Figure 4.

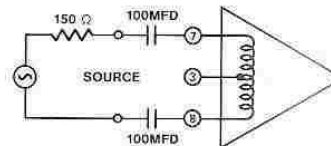


Figure 4. Decoupling Phantom Supply