Model 7600(M)/7602(M)

Wideband Power Amplifier
DC to 1MHz
141V/282V rms
17/34 Watts

Operating and Maintenance Manual

KROHN-HITE CORPORATION

Service and Warranty

Krohn-Hite Instruments are designed and manufactured in accordance with sound engineering practices and should give long trouble-free service under normal operating conditions. If your instrument fails to provide satisfactory service and you are unable to locate the source of trouble, contact our Service Department at (508) 580-1660, giving all the information available concerning the failure.

DO NOT return the instrument without our written or verbal authorization to do so. After contacting us, we will issue a Return Authorization Number which should be referenced on the packing slip and purchase order. In most cases, we will be able to supply you with the information necessary to repair the instrument, avoiding any transportation problems and costs. When it becomes necessary to return the instrument to the factory, kindly pack it carefully and ship it to us prepaid.

All Krohn-Hite products are warranted against defective materials and workmanship. This warranty applies for a period of one year from the date of delivery to the Original Purchaser. Any instrument that is found within the one year warranty period not to meet these standards, will be repaired or replaced. This warranty does not apply to electron tubes, fuses or batteries. No other warranty is expressed or implied.

Krohn-Hite Corporation reserves the right to make design changes at any time without incurring any obligation to incorporate these changes in instruments previously purchased.

Modifications to this instrument must not be made without the written consent of an authorized employee of Krohn-Hite Corporation.

Model 7600(M) and 7602(M)

Wideband Power Amplifier
DC to 1MHz, 17W and 34W

Serial No. _____

Operating and Maintenance Manual

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Model 7600

Model 7602

Model 7600M ("M" is the Meter Option Package)

Model 7602M ("M" is the Meter Option Package)

Table of Contents

SECTION 1
GENERAL DESCRIPTION

1.1 INTRODUCTION

The Model 7600 and 7602 are 17 watt and 34 watt wideband power amplifiers that offer extended output power and voltage capabilities, low distortion, versatility and the latest in hybrid CMOS power operational amplifier technology, with performance features not available in other power amplifiers.

The unit provides 17 watts of continuous power (34 watts at dc) and 141V rms from dc to 500kHz. The frequency response is ±0.1dB to 10kHz, and the distortion contributed by the amplifier is <0.01% to 5kHz and <0.3% to 100kHz. The voltage gain can be either inverting or non-inverting and has selectable ranges from 0dB to 14dB, 14dB to 28dB and 28dB to 42dB (a voltage gain step of 5), and is continuously variable between the ranges.

Other features include: modes of A, A–B and –B; common mode rejection of 80dB; input coupling of ac or dc; a meter that is selectable to display heat sink temperatures in °C, output peak voltage and average output current. A dc offset control is also provided that is variable from 0V to ±200V.

The Model 7602 provides the same capabilities as the Model 7600 but also provides a balanced output and is able to deliver 34 watts of continuous power (68 watts at dc), and 282V rms (800V p-p). It can also provide plus and minus voltages simultaneously.

Claim for Damage in Shipment to Purchaser

The Model 7600 and 7602 are carefully inspected, tested and aged before shipment to ensure that it is working properly. The unit should be thoroughly inspected immediately upon arrival to purchaser. All items shipped should be checked against the enclosed packing list. Krohn-Hite will not be responsible for shortages against the packing list unless notified immediately. If for some reason the instrument is not working properly, or appears to have been damaged in shipment, inform the freight carrier and file a claim for the damage, then notify Krohn-Hite or its nearest sales office immediately (to obtain a quotation to repair the shipment damage). The final claim and negotiations with the carrier must be completed by the customer.

1.1.1 Shipping to Krohn-Hite for Repair or Calibration

All shipments of Krohn-Hite instruments should be made via United Parcel Service or “Best Way” prepaid. The instrument should be shipped in the original shipping container; or if not available, use any suitable container that is rigid and of adequate size. If a substitute container is used, the unit should be wrapped in paper and surrounded with at least four inches of shock-absorbing material.

1.2 SPECIFICATIONS

1.2.1 OUTPUT (All rms values are for sinewave signals)

For the Model 7602, specifications apply to each output to ground.

Frequency Range: dc to 1MHz.

Power

1k Ohm Load: 17W rms, 34W dc and peak, dc to 500kHz; 5W rms to 1MHz.

600 Ohm Load: 10W rms, 100Hz to 1MHz; 5W rms, 10W dc and peak, dc to 100Hz.

Voltage

No Load: ±200V dc and peak, 141V rms.

1k Ohm Load: ±184V dc and peak, 130V rms, dc to 500kHz; ±113V peak, 80V rms at 1MHz.

600 Ohm Load: ±113V peak, 80V rms, 100Hz to 1MHz; ±78V dc and peak, 55V rms, dc to 100Hz.

Current: 910 ohm load, ±200mA peak, 141mA rms, dc to 500kHz.

Frequency Response: ±0.1dB, dc to 10kHz; ±0.25dB to 200kHz; ±0.5dB to 500kHz, 0-130V rms; ±0.5dB to 1MHz 0-80V rms.

Harmonic Distortion: <0.01% to 5kHz and 175V peak output; <0.05% to 200V peak; <0.3% to 100kHz.

Voltage Gain: 0dB to 42dB in three ranges; 0dB to 14dB, 0dB to 28dB, 0dB to 42dB; continuously variable between ranges.

Step Accuracy: ±0.1dB plus frequency response specification. Gain steps are 14dB at max variable gain control setting or a voltage gain of 5.

Stability: <0.001dB change for a 10% change in line voltage.

Dynamic Range: >80dB.

Hum and Noise (2MHz bandwidth): referred to output, <10mV rms; <20mV rms on the 0dB to 42dB gain range.

Phase Shift: A input 0° ±1°, B input, 180° ±1° dc to 10kHz increasing linearly 60° lagging at 1MHz. Model 7602: (Inverted output relative to non-inverted) 180°, –0.3° at 10kHz; 180°, –3° at 100kHz; 180°, –20° at 1MHz.

Squarewave Response

Rise/Fall Times: 120ns to 50Vp-p.

Slew Rate: >600V/ms, 400Vp-p.

Aberrations: <5%.

Regulation: <0.1%, No load to 1k ohm load, dc to 10kHz, rising to 2% at 1MHz.

Coupling: DC.

DC Level: Nominal zero volts; vs. temperature, 2mV/°C.

DC Offset Control (no load): 0V to ±200V.

DC Level Stability

Vs. Line: <1mV for a 10% change in line voltage.

Vs. Temperature: <0.01%/°C or 2mV/°C whichever is greater.

Internal Impedance: <0.5 ohms, dc to 10kHz; 5 ohms at 100kHz; 20 ohms at 1MHz.

Output Protection: Protected from overloads with a unique foldback limiter which keeps the output current within safe operating regions. Kickback diodes clamp kickback voltages to the supply.

1.3 INPUT

Modes: A, A–B, –B.

Maximum Voltage (without damage): ±200V dc referred to ground.

Maximum Common Mode: 0dB to 14dB range, ±200V peak; 14dB to 28dB range, ±40V peak; 28dB to 42dB range, ±8V peak.

Common Mode Rejection: 80dB, dc to 200Hz; 60dB to 1kHz; 40dB to 10kHz; rising to 20dB at 1MHz.

Sensitivity: ±1.6V peak.

Coupling: Direct (dc) or capacitive (ac) with low frequency cutoff of approximately 1Hz.

Impedance: 1 Megohm in parallel with 30pF with front inputs only; 65pF with front and optional rear inputs, independent of input gain setting.

1.4 GENERAL

Load Impedance: Capable of driving any resistive load within the current and voltage limitations of the amplifiers foldback limiter. Capable of driving reactive loads within voltage and current limitations.

Temperature Range: 0°C to 45°C.

Controls

Front panel: Power switch, 5-position input MODE switch, 2-position INPUT COUPLING switch, 3-position GAIN control switch, variable GAIN dB potentiometer, 10-turn variable DC OFFSET potentiometer, 3-position offset RANGE switch, 4-position METER SELECT switch, output CONNECT/DISCONNECT switch.

Rear panel: CHASSIS/FLOAT GROUND switch.

Front Panel Warning LED Indicators: Over TEMP, CLIPPING, output H.V. (high voltage).

Terminals: BNC A input, BNC B input, binding post output.

Rear Panel: Power receptacle, optional BNC A input, B input and binding post output.

Power Requirements: 90-132/198-264 volts, 50Hz-400Hz, 200 watts.

Dimensions and Weights: 3½“ (9cm) high, 8½” (21.8cm) wide, 18" (46ttttttttt.2cm) deep; 12 lbs (5.4kg) net, 14 lbs (6.3kg) shipping.

Accessories: 3-terminal line cord, operating manual.

1.5 OPTIONS

7600M/7602M Meter - Option Package

Heat Sink Temp °C: Measures the heat sink temperature in the vicinity of the output power amplifier IC. Used as an indicator of operating conditions and air flow to the unit.

Output Peak Voltage: Measures the largest peak voltage independent of polarity with a 1 second time constant.

Accuracy (at 1kHz): ±0.5V.

Frequency Response: ±2%, 10Hz to 100kHz; 5% to 1MHz.

Average Output Current: Measures average dc supply current delivered to the output amplifier as an indicator of output amplifier load. Quiescent current is nulled out. Can be used to find resonances in a load.

Accuracy: ±5% ±1 digit.

Rack Mounting Kit: Part No. RK-37, permits installation of the Models 7600/7602 into a standard 19" rack spacing.

Option 003: Rear panel input and output connectors.

SECTION 2
OPERATION

2.1 INTRODUCTION

This section describes the operation of the Model 7600 and 7602. It includes the proper ac requirements, the recommended turn-on procedure and a detailed explanation of all the operating controls.

2.2 POWER REQUIREMENTS

The Model 7600 and 7602 Power Amplifier is designed to operate from a single-phase, 50Hz to 400Hz ac power source of 90 to 110, 108 to 132, 198 to 242 or 216 to 264 volts. The LINE SWITCH located on the rear panel allows the unit to be powered from one of the four voltage ranges above. The ac power receptacle is a standard 3-pin connector and complies with the European I.E.C. standard. A detachable 3-wire line cord is provided with the unit.

2.3 TURN-ON PROCEDURE

1. Set the LINE SWITCHES for the desired range.

   For the 90 to 110 volt range, set the voltage range switch to 120V and the NORM/LOW switch to LOW.

   For the 108 to 132 volt range, set the voltage range switch to 120V and the NORM/LOW switch to NORM.

   For the 198 to 242 volt range, set the voltage range switch to 240V and the NORM/LOW switch to LOW.

   For the 216 to 264 volt range, set the voltage range switch to 240V and the NORM/LOW switch to NORM.

2. Observe that the POWER switch is in the off position.

3. To select the desired grounding, switch the CHASSIS/FLOATING GROUND slide switch located on the rear panel to the proper setting.

WARNING
The chassis of the Model 7600 and 7602 can be connected to signal ground via the CHASSIS/FLOATING GROUND switch. For safety purposes, connect the line cord to a 3-terminal ac outlet.

4. Plug the line cord into the unit and then into the ac outlet.
5. Turn the POWER switch on and allow the unit to warm-up for several minutes.

CAUTION

Because of potentially dangerous voltage within the Model 7600 and 7602, the covers should not be removed when the unit is connected to an ac outlet, unless it is by qualified personnel.

The Model 7600 and 7602 is now ready to amplify.

2.4 OPERATION

To operate the Model 7600 and 7602 Power Amplifier, proceed as follows:

1. Make the appropriate power connections (refer to TURN-ON Procedure).
2. Set the DC OFFSET switch to the OFF position.
3. Set the GAIN dB switch to 0dB.
4. Set the MODE switch to OFF.
5. Set the Input Coupling switch to the desired mode (AC or DC).
6. Set the METER SELECT switch to the PEAK VOLTS position.
7. Connect a voltmeter to the OUTPUT terminals and check for 0V dc.

Allow the unit to warm-up for 30 minutes to obtain rated performance specifications.

CAUTION

The Model 7600 and 7602 is capable of as much as 200V peak (7600) and 400V peak (7602) on its OUTPUT terminals. To prevent the possibility of electrical shock, set the OUTPUT connect switch to DISCONNECT when connecting or disconnecting any cable or load from the amplifier's OUTPUT terminals.

2.4.1 Front Panel

Figure 2.1 Model 7600M with Meter Option Package

Figure 2.2 Model 7602M with Meter Option Package

2.4.1.1 Power Switch

"I" is the ON position, "0" is the OFF position.

2.4.1.2 Mode

The MODE selector switch consists of a 5-position, rotary switch that selects the Mode of operation. The following are a description of each position:

OFF: When selected, there will be no signal at the OUTPUT terminals.

A: When selected, the input signal will be non-inverted (in-phase) at the (sinewave) OUTPUT terminal and inverted at the (inverted sinewave) OUTPUT terminal.

–B: When selected, the input signal will be inverted at the (sinewave) OUTPUT terminal and non-inverted at the (inverted sinewave) OUTPUT terminal.

A–B: When selected, the output signal will be the mathematical difference between each input signal.

2.4.1.3 AC/DC Coupling

The AC/DC switch is a 2-position rotary switch with two selectable setting: AC (capacitive coupling) or DC (direct coupling). In the AC position, the low-cutoff frequency is approximately 1Hz.

2.4.1.4 Gain dB

The GAIN dB switch consists of a 3-position rotary switch with three ranges. A minimum signal of 1.6V peak must be applied to the input in order to obtain the maximum output voltage of 200V peak. When used with the variable GAIN control, each position can be varied as follows:

0dB: 0dB to 14dB

14dB: 0dB to 28dB

28dB: 0dB to 42dB

2.4.1.5 Variable Gain dB Control

The Variable Gain dB Control is a single-turn potentiometer that has an overall gain of 5 at each range of the GAIN dB range switch described in paragraph 2.4.1.2 above.

Note

When the Variable Gain dB Control is in the maximum CCW position, the amplifier's output terminals will still have a voltage or signal on them. In order to not have this condition occur, the MODE switch must be set in the OFF position, the Output DISCONNECT/CONNECT switch must be set to the DISCONNECT position, or the input signal must be removed.

2.4.1.6 DC Offset

The DC OFFSET switch consists of a 3-position rotary switch with three selectable settings: –200, OFF and +200. When used with the variable DC OFFSET control, the dc offset can be varied from 0V to –200V dc and 0V to +200V dc.

2.4.1.7 Variable DC Offset Control

The Variable DC OFFSET Control consists of a 10-turn potentiometer that infinitely controls the Output DC Offset 0V to –200V peak or 0V to +200V peak.

2.4.1.8 Meter Select Switch (Meter Option)

The Meter Select Switch is a 4-position rotary switch that allows the LED panel meter to indicate the following:

Heat Sink Temp °C:	Indicates the temperature of the heat sink at the output amplifiers. It gives the user a monitoring device when the amplifier is in an environment that is not well ventilated.
Peak Volts:	Indicates the output peak voltage.
Average (I) +Supply:	Indicates the average current of the plus supply.
Average (I) –Supply:	Indicates the average current of the minus supply.

2.4.1.9 Connectors

BNC connectors are provided for the Input signal, and Binding Posts are provided for the Output signal.

A Input BNC: Sensitivity is 1.6V peak. A signal of ±1.6V peak is needed to achieve maximum output. Active when the MODE switch is selected to the A or A–B positions.

B Input BNC: Sensitivity is 1.6V peak. A signal of ±1.6V peak is needed to achieve maximum output. Active when the MODE switch is selected to the –B or A–B positions.

2.4.1.10 Output Disconnect/ Connect Switch

“I” is the ON position, “0” is the OFF position.

2.4.1.11 LED Indicators

Temp: Indicates the heat sink temperature has exceeded 57°C (with Meter option Package only).
Clipping: Indicates when the output is beginning or actually clipping.
>15V: Indicates when the output voltage is >15V (with Meter Option Package only).

2.4.2 Rear Panel

2.4.2.1 Option 002 Connectors

BNC connectors are provided for the Input signal, and Binding Posts are provided for the Output signal.

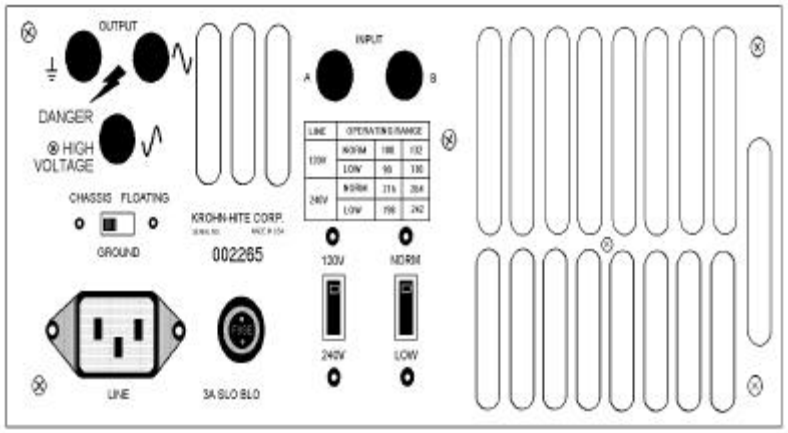

Figure 2.1 Rear Panel Panel

2.4.2.2 Chassis/Floating Ground Switch

The CHASSIS/FLOATING GROUND switch is a 2-position slide switch that disconnects the amplifier's signal ground from its chassis ground when used in the FLOATING mode.

2.4.2.3 Fuse Receptacle

The amplifier's fuse rating is a 3A slow-blow for both 120V and 230V operation.

2.4.2.4 AC Power Receptacle

The AC power receptacle is a standard 3-wire AC connector.

2.4.2.5 Line Switches

A description of the AC line switches are in paragraph 2.3.

SECTION 3
INCOMING ACCEPTANCE

3.1 INTRODUCTION

The following procedure should be used to verify that the Model 7600 and 7602 is operating within specifications., both for incoming inspection and routine servicing. Tests should be made with the covers in place, and the procedure given below should be followed in sequence.

3.2 TEST EQUIPMENT REQUIRED

a. DC volt meter capable of measuring 1mV to 200V with 0.1% accuracy at 200V. Fluke Model 8010A or equivalent.

b. AC Voltmeter capable of measuring 100mV to 150V rms with a 1MHz bandwidth. Fluke Model 8920A rms volt meter or equivalent.

c. Dual Channel Oscilloscope with X10 probes and a 50MHz bandwidth. Tektronix Model 2245A or equivalent.

d. 1000 ohm dummy load capable of dissipating 40 Watts.

e. Sinewave source from 10Hz to 1MHz. Krohn-Hite Model 4200B/4300B or equivalent.

f. Sinewave source with <0.01% distortion at 1kHz. Krohn-Hite Model 4400A or equivalent.

g. Squarewave source from 1kHz to 200kHz with 40ns rise and fall time and 5% aberrations. Krohn-Hite Model 4300 or equivalent.

h. Distortion analyzer that can measure down to 0.005%. Krohn-Hite Model 6900B or equivalent.

In the following procedure the main output is marked with a sinewave and the inverted output is marked with an inverted sinewave on the front panel.

3.3 INCOMING PROCEDURE

3.3.1 DC Offset and Peak Volts Meter Calibration Check

Set the MODE to OFF.

Set METER SELECT to PEAK VOLTS.

Connect the DVM to the main output.

Set the DC OFFSET control to +200 position.

Adjust the offset control pot for a +199.0V reading on the DVM.

The 7600/7602 meter should read 199.0V ±0.5V.

For the 7602 measure the inverted output for –199.0V ±0.4V.

Set the DC OFFSET to –200 position.

Adjust the offset control pot for a –199.0V reading on the DVM.

The 7600/7602 meter should read 199.0V ±0.5V.

The High Voltage LED should be lit and the CLIPPING LED out for both polarities of output offset.

Reduce the DC offset using the offset control pot until the HV LED goes out.

The voltage it goes out at should be 12V to 15V.

Disconnect the DVM from the 7600/7602.

3.3.2 Squarewave Broad Banding Check

The CLIPPING LED should not come on during steps 2 and 3.

Connect a 1kHz, 2.0V p-p (1.0V peak) squarewave to the A and B inputs.

Set the oscilloscope gain for 0.5V/cm with probes on both channels.

Connect both oscilloscope channels one and two through X10 probes (probe must be broad banded) to the input signal and adjust them to give an optimum matched waveform.

Connect oscilloscope channel two to the main output.

Set scope gain on channel two to 10V/cm, DC coupled.

Set the 7600/7602 for AC coupling and a gain of 28dB (GAIN dB to 28, gain pot to 0 end stop), MODE to A.

The waveform on the oscilloscope should be 50V p-p (5 cm).

Waveform aberrations such as droop, slant or overshoot should be less than 2.5V or 0.25cm. Adjust the oscilloscope variable gain control knob so that the output amplitude displayed matches the input amplitude. The two waveforms should look the same within 0.2cm.

Set the MODE to –B.

Set the oscilloscope channel two invert on.

The two waveforms should look the same within 0.2cm.

Set the GAIN dB for 14.

Set the channel one gain to 2V/cm.

Set the 1kHz square waveform amplitude to 10.0V p-p (5.0V peak).

Readjust the oscilloscope channel two variable gain control so that the output amplitude displayed matches the input amplitude.

The two waveforms should look the same within 0.2cm.

Set the MODE to A.

Set the oscilloscope channel two invert off.

The two waveforms should look the same within 0.2cm.

Set the GAIN dB for 0, gain control pot to 0 end stop.

The two waveforms should look the same within 0.2cm.

Set the MODE to –B.

Set the oscilloscope channel two invert on.

The two waveforms should look the same within 0.2cm.

For the 7602 connect the scope to the inverted output.

Set the oscilloscope channel two invert off.

The two waveforms should look the same within 0.2cm.

Reconnect the scope to the main output.

3.3.3 Squarewave Rise And Fall Time Check

Connect the scope probe to the main output and set it's gain for 10V/cm, variable gain control pot to cal. position.

Set the input squarewave frequency to 200kHz.

Set the input amplitude to 2.0V p-p (1.0V peak).

Set the 7600/7602 GAIN dB for 14, amplitude control pot to 14 end stop.

Set the scope sweep time to 0.5mS/cm.

Set the scope for negative slope trigger.

One full cycle of a 50V p-p square wave should be on the screen with the rising edge in the center of the screen. The waveform aberrations should be <5% or 2.5V (¼cm).

Set the sweep X10 magnifier on and recenter the rising edge using the horizontal position control.

Measure the rise time from the 10% to the 90% points on the rising edge.

It should be <120ns (2.4cm).

Set the scope trigger to positive slope.

Locate the falling edge using the horizontal position control.

Measure the fall time from the 90% to the 10% points on the falling edge.

It should be <120nsec (2.4cm).

For the 7602 repeat the step for the inverted output.

3.3.4 Slew Rate Check

Set the MODE to A.

Set the GAIN dB for 28, gain control pot for 0 end stop.

Set the scope sweep X10 magnifier to off.

Set the scope gain to 50V/cm.

Set the sweep time to 1mS/cm.

Set the input squarewave frequency to 200kHz.

Set the input amplitude to 3.0V p-p.

The output amplitude should be 375V p-p.

Set the sweep X10 Mag on.

Measure the rising edge slew time from the –150V point on the scope (3rd cm below center line) to the +150V point (3rd cm above center line).

It should be mS (5cm).

Set the scope trigger slope to negative.

Measure the falling edge slew time from the +150V point on the scope (3rd cm above center line) to the –150V point (3rd cm below center line).

It should be <0.5mS (5cm).

For the 7602 repeat the step for the inverted output.

3.3.5 Gain Calibration Check

Set the input waveform to sine wave and connect it to both A and B inputs using two T adapters.

Set the input signal to a 1kHz.

Set the input amplitude to 1V p-p.

Connect the scope to the output(s) set for a gain of 20V/cm.

Connect the Fluke model 8920A true RMS voltmeter to the input via a T adapter.

Set it for dB relative operation.

Zero reference the meter.

Set the 7600/7602 for:

MODE –B and AC.

GAIN dB to 28 and gain control pot to 0 end stop.

DC OFFSET OFF.

METER SELECT to PEAK VOLTS.

The waveform on the scope should be a clean sinewave.

With the Fluke zero referenced on the input connect the Fluke to the main output.

Measure the gain. It should be 42dB ±0.1dB.

For the 7602 measure the gain to the inverted output.

It should be 42dB ±0.1dB.

The 7600/7602 meter should read 62.5 ±0.5.

Set the dB GAIN control to 14.

The Fluke meter should read 28dB ±0.1dB.

The 7600/7602 meter should read 12.5 ±0.5.

Set the dB GAIN control to 0.

The meter should read 14dB ±0.1dB.

The 7600/7602 meter should read 2.5 ±0.5.

Set the 7600/7602 gain control pot to the 0 end stop.

The meter should read 0dB ±0.1dB.

Repeat the step with the MODE switch set for A.

3.3.6 Frequency Response Check

Use a flat response signal source such as a Krohn-Hite Model 4200 oscillator for this test.

For the 7602 measure the inverted output for each step.

Connect a 1kHz signal source to both A and B inputs.

Set the input amplitude for 4.0V p-p (2.0V peak) or 1.5V rms (its not critical in how precise it is).

Connect the Fluke 8920A set to volts to the main output.

The 7600/7602 should be set for:

MODE to –B and AC.

Set dB GAIN to 28.

Gain control pot to 0 end stop.

DC OFFSET to OFF.

METER SELECT to PEAK VOLTS.

Adjust the 7600/7602 gain control pot for a 130V ±1V rms reading on the Fluke.

Set the Fluke to dB relative operation and zero reference the reading.

Set the frequency to 10kHz and measure the change in output amplitude on the Fluke.

Should be <±0.1dB.

Set the frequency to 100Hz.

The change in output amplitude should be <±0.1dB.

Set the frequency to 200kHz.

The change in output amplitude should be <±0.25dB.

Set the frequency to 500kHz.

The change in output amplitude should be <±0.5dB.

Repeat the step with the MODE switch set for A.

3.3.7 1K Load Maximum Power

Set the input sinewave amplitude to 4V p-p (2V peak or 1.5V rms, not critical) frequency to 1kHz.

Connect the 1000 ohm dummy load to the main output.

Connect the oscilloscope to the main output.

The 7600/7602 should be set for:

MODE to A and AC.

Set dB GAIN to 28.

Gain control pot to 0 end stop.

DC OFFSET to OFF.

METER SELECT to PEAK VOLTS.

Increase the 7600/7602 gain control pot to the point of observable clipping on the output.

With the Fluke measure the rms voltage at which clipping occurs.

It should be >130V rms.

Set the frequency to 500kHz.

Increase the 7600/7602 gain control pot to the point of observable clipping.

With the Fluke measure the rms voltage at which clipping occurs. It should be >130V rms.

For the 7602 repeat the step for the inverted output except the dummy load must be connected to the inverted output.

3.3.8 Distortion Check

Connect a low distortion sine wave source such as the Krohn-Hite model 4400 oscillator to the A input.

Set the frequency to 5KHz.

Set the input amplitude for approximately 2V RMS.

Set the 7600/7602 for:

MODE to A and AC.

GAIN dB for 28, gain control pot to 0 end stop.

DC OFFSET to OFF.

METER SELECT to PEAK VOLTS.

Connect the distortion analyzer meter to the main output.

Adjust the gain control pot for a 175V reading on the 7600/7602 meter. The distortion analyzer should read <0.01% distortion.

Set the frequency to 100kHz.

Distortion reading should be <0.1%.

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