

## GPIB Wideband Power Amplifier DC to 1MHz

- GPIB/Optional LAN/USB Remote Control
- Output Power: 17 Watts/34Watts
- Output Voltage: 141V/282Vrms
- Frequency Range: DC to 1MHz
- Coupling: AC or DC
- Gain: up to 42dB
- Distortion: <0.01%
- DC Offset:  $\pm 200V$
- Load Impedance: Reactive and Resistive



Krohn-Hite's new Model 7620 is a manual or GPIB remote controlled 17/34 watt, wideband power amplifier that offers extended output power and voltage capabilities, low distortion, and versatility; all at a reasonable cost.

The 7620 provides input modes of A, A-B and -B, common mode rejection of 80dB, input coupling of ac or dc, dc offset control that is variable from 0V to  $\pm 200V$ . A 2-line/20-character display indicates all amplifier settings as well as the status of the heat sink temperature in  $^{\circ}C$ , the output peak voltage, and average output current.

In the non-inverted or inverted mode or operation, the 7620 provides 17 watts of continuous power (34 watts at dc) and 141Vrms from dc to 200kHz. In the balanced mode, the unit provides 34 watts and 800Vp-p. The frequency response is  $\pm 0.1dB$  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 with selectable gain ranges of x5, x25 and x125. Each range is continuously variable between ranges. An AGA (Automatic Gain Adjust) mode is provided to protect the unit from damage when a clipping occurs at the output. In this mode the gain will automatically change the output gain until the clipping condition is removed.

The Model 7620 offers a combination of power, performance and versatility over the range of dc to 1MHz. With the ability to drive either resistive or reactive loads, together with its power and voltage capability, low distortion, and flat response make the 7620 ideally suited for applications such as driving piezo electric transducers, ion beam deflection, vacuum tube driver, meter calibration, ink jet testing and design; and even as a bipolar high voltage power supply.

**SPECIFICATIONS** (All values are measured from each output to ground)

**Frequency Range:** DC to 1MHz.

**Frequency Response:**  $\pm 0.5$ dB DC to 1MHz.

**Power:**

Frequency Range	Load	Watts DC	Watts Rms
DC to 500kHz	1k Ohm	34	17
>500kHz to 1MHz			5
>800kHz to 900kHz	600 Ohm	9	4
>900kHz to 1MHz			9

**Voltage:**

Frequency Range	Load	Volts Peak	Volts rms
DC to 200kHz	No Load to 10k Ohm	$\pm 200$	141
>200kHz to 500kHz		$\pm 180$	127
>500kHz to 800kHz		$\pm 120$	85
>800kHz to 900kHz		$\pm 100$	71
>900kHz to 1MHz		$\pm 92$	65

Frequency Range	Load	Volts Peak	Volts rms
DC to 200kHz	1k Ohm	$\pm 188$	132
>200kHz to 500kHz		$\pm 170$	120
>500kHz to 900kHz		$\pm 120$	71
>900kHz to 1MHz		$\pm 90$	64

Frequency Range	Load	Volts Peak	Volts Rms
DC to 200Hz	600 Ohm	$\pm 85$	60
>200Hz to 100kHz		$\pm 100$	71
>100kHz to 700kHz		$\pm 115$	82
>700kHz to 1MHz		$\pm 85$	60

**Current:** 910 $\Omega$  load  $\pm 200$ mA<sub>peak</sub> (141mA<sub>rms</sub>) (DC to 500kHz).

**Harmonic Distortion:** 0.02% (typical), 0.1% (max).

**Voltage Gain Ranges:**

Range		Steps
x5	x0.0 to x5.0	x0.1
x25	x0.0 to x25.0	x0.5
x125	x0.0 to x125	x1.0

**Step Accuracy:**  $\pm 0.1$ dB plus frequency response specification

**Stability:**  $< 0.001$ dB change for each 10% change in line voltage.

**Dynamic Range:**  $> 70$ dB

**Hum and Noise (2MHz bandwidth):** referred to output,  $< 20$ mV<sub>rms</sub>

**Phase Shift:**

Input	Frequency Range	Specification
A	DC to 1MHz	$0^\circ \pm 1^\circ$
-B	DC to 10kHz	$180^\circ \pm 1^\circ$ , increasing linearly $60^\circ$ lagging at 1MHz.
Inverted Relative to Non-Inverted	DC to 100kHz	$180^\circ, -3^\circ$ at 100kHz
	$> 10$ kHz to 1MHz	$180^\circ, -20^\circ$ at 1MHz

**Square wave Response:**

Rise/Fall Time:  $< 250$ ns to 50Vp-p,  $< 600$ ns to 200Vp-p

Slew Rate:  $> 500$ V/ $\mu$ s, 400Vp-p

Abberations:  $\leq 10\%$

**Regulation:**  $< 0.1\%$  with no load to 1k $\Omega$  (DC to 10kHz), rising to 2% at 1MHz.

**DC Coupling:** Selectable ac and dc.

**DC Level:** Nominal zero volts; vs. temperature, 2mV/ $^\circ$ C.

**DC Offset Control (no load):** 0V to  $\pm 200$ V.

Accuracy: 0V to  $\pm 10$ V,  $\pm 2.5\%$ ; 10V to  $\pm 200$ V,  $\pm 1.5\%$

**DC Level Stability:**

vs. Line:  $< 1$ mV for each 10% change in line voltage.

vs. Temperature:  $< 0.01\%/^\circ$ C or 2mV/ $^\circ$ C (whichever is greater).

**Internal Impedance:**

Frequency Range	Ohms
DC to 10kHz	$< 0.5$
10kHz to 100kHz	5
100kHz to 1MHz	20

**Configurations:**

A (Single-Ended, Non-Inverted).

-B (Single-Ended, Inverted).

A-B (Differential).

**Maximum Voltage:**  $\pm 200$ VDC (referenced to ground)

**Maximum Common Mode:**

Gain Range		VPeak
x5	x0.0 to x5.0	±200
x25	x0.0 to x25.0	±40
x125	x0.0 to x125	±8

**Common Mode Rejection (at Maximum Gain Setting, x125):**

Frequency Range	Rejection
DC to 200Hz	70dB
200Hz to 1kHz	60dB
1kHz to 10kHz	40dB
10kHz to 1MHz	20dB
Improves to <80dB at lower gain settings.	

**Sensitivity:** ±1.6V peak.**Coupling:** Direct (DC) or capacitive (AC) with low frequency cutoff of approximately 1Hz.**Impedance:** 1 MΩ in parallel with 30pF.**GENERAL****Temperature Range:** 0°C to 45°C.**Power Requirements:** 120V or 240V, 50Hz-400Hz, 200W.**Dimensions:** 14" W (35.6cm) x 13.64" L (34.6cm) x 3.5" H (8.9 cm) 4" H (10.2 cm) with feet installed.**Weight:** 12.8 lbs. (5.81 kg.).**REMOTE CONTROL OPTIONS (specify when ordering)****IEEE-Com:** (standard) - 24-Pin, Female Connector.**LAN-Com:** RJ45 Connector.**USB-Com:** Mini Type B 5-Pin Connector.**OPTIONAL ACCESSORIES****RK-314:** Rack Mount Kit (for mounting the 7620 into a standard 19" rack).**CAB-10:** GPIB Cable with Connectors (2 meters).**CAB-11:** GPIB Cable with Connectors (1 meter).**CAB-018:** Cable, Multi-Stacking Double Banana Plug.**CAB-025:** BNC Cable (3 Feet).**7620EXT:** One Year Extended Warranty

## STATUS DISPLAY

A 2-line/20-character display displays the status of the instrument.

Default displays are:

1. **Input Config:** Input Configuration
2. **HS Temp (°C):** Heat Sink Temperature in °C
3. **Power Supply:** +Ave Current/-Ave Current
4. **Output (Vpeak + DC):** Output peak voltage + dc offset
5. **Input Coupling:** Either AC or DC
6. **DC Offset:** Indicates from 0 to  $\pm 200$ Vdc
7. **Gain Range:** 3 ranges are x5, x25 and x125
8. **Output Gain:** Indicates from 0.0 to 125

## DISPLAY MENU SYSTEM (for selecting other features)

1. **INPUT CONFIG:** Options are OFF, A, -B, A-B (differential)
2. **INPUT COUPLING:** Options are AC or DC
3. **AGA:** (Automatic Gain Adjustment), FLASH (LED Indicator) - Options are AGA OFF FLASH OFF, AGA ON FLASH ON, AGA ON FLASH OFF
4. **SAVE SETUP:** Options are 1 to 5
5. **RECALL:** Options are 1 to 5 and Default
6. **GPIB:** Options are 0 to 31
7. **SN AAXXXX SW VERS X.X:** Displays serial number and firmware version information
8. **SOUND:** Options are ON and OFF
9. **EXIT:** Exits menu system and returns to the Default Display

Specifications subject to change without notice.

**Krohn-Hite Model 7620 Power Amplifier**  
Capacitive Loading Effects from 1Hz to 1MHz

