



## HF Linear Amplifier

Manufactured/Price:

SB-220 70-78 \$369.95

SB-221 78-83 \$599.95

**Comments:** The SB-220 is probably the second most popular amplifier on the planet, right behind the SB-200 and 201. Larger and heavier than the SB-200, the 220 is pretty much the same amplifier. The SB-220(221) is rated at 2000 watts input PEP and 1000 watts CW using a pair of fan-cooled, instant-on, 3-500Z tubes running in parallel, and operated close to ground potential in class B. The 220(221) can be driven with as little as 65 watts, but to realize a full 1000 watts of output power requires at least 100 watts of drive. A double shielded RF deck keeps the TVI potential to a minimum. The amp features a built-in, solid-state power supply with a circuit breaker (on the rear panel), safety interlocks, full metering, ALC output, pre-tuned broadband Pi-input, and Zener diode regulated bias to reduce plate idle current and help reduce operating temperature. The input impedance is about 50 ohms. There is no built-in SWR bridge, as in the SB-200. The only difference between the SB-220 and the SB-221 is frequency coverage. The 220 covers 80-10 meters. The 221 covers only 80-15 meters. This change was dictated by a change in the laws governing the manufacture of linear amplifiers. Front panel controls include rocker type switches for main power and mode (SSB/CW); tune,

load, and bandswitch controls; relative power sensitivity; and meter function. There are two illuminated meters. One reads plate current and the other can be switched between grid current, relative power, and high voltage. Rear panel connections include a ground post, phono jacks for antenna relay, ALC, and SO-239s for both RF input and output. The SB-220(221) is designed for use with 50 ohm loads. The 220 is not quite as reliable as the 200(201) as far as the power supply is concerned—and low high-

voltage due to blown diodes in the stack are common. A simple test: when run from 240 VAC in the SSB mode, the SB-220 high-voltage should push the meter right up to the end of the scale and perhaps right to the peg. A reading much less than full scale may indicate one or more bad diodes. Also, the Zener diode regulating the bias is easy to blow up with any significant arcing in and around the coils and caps. Plate idle current should be around 75 ma. A higher reading may indicate a bad Zener. The 220 was prone to a little arcing, and Heath eventually came out with a modification kit to fix the problem. This mod is hard to spot but is most obvious in the loading capacitor. The original loading cap has narrow spacing between the plates, while the new cap has a much wider spacing. The power supply and capacitor problems have been fixed in the 221. The SB-220 and 221 can be wired for either 120 VAC (20 amp max) or 240 VAC (10 amp max) operation. 240 VAC is highly recommended. The SB-220 and 221 are styled to match the other SB-series gear and wear the classic two-tone green wrinkle finish paint. The SB-220 remains as good a value today as when it was last sold in 1983. The SB-220 is in greater demand by virtue of its 10 meter coverage. SB-220s and 221s are not rare, but watch for modifications.

**Weight/Size:** 50 lbs; 15" wide x 6.75" high x 14" deep

**Related Products:** SB-200, SB-201,

see related products listed for SB-100