

Irving Hiverter 50

Sideband is a real comer on six meters and you seldom lack for a contact on SSB these days. As more and more converting transmitters and complete sideband rigs become available commercially it is obvious that sideband will become as popular on six meters as it has on the lower frequencies for it gives the same benefits. You can work out over much greater distances per given watt of input . . . it is simpler to build high power output stages when you don't have to worry about getting all that plate modulation power together . . . there is much less QRM, which has become quite a problem on six lately . . . and you can work through aurora with it.

A new piece of gear on the VHF market today is the Irving Electronics Hiverter 50. The Hiverter will convert any twenty meter AM, CW or SSB exciter into an efficient six meter transmitter with no trouble at all. A small company has to be especially careful of the quality of their product, or pfft goes its entire income. "Pappy" Irving has been scrupulously careful with his products, and believe me . . . it shows on the Hiverter 50.

The unit can be used with any transmitter that is capable of producing from 10 to 100 watts of 14 mc rf. About six watts are needed to drive the unit, so transmitters with more than a twenty watt maximum must have some sort of carrier insertion control or attenuating device between their output and the Hiverter input. The instruction manual has a number of diagrams for simple resistive pads in case the user finds he has no way to control his driving transmitter output. With twenty watts input, the Hiverter will deliver 20 watts on AM, 35 watts on CW and 30 watts pep on SSB.

There are no unusual circuits involved in the Hiverter; a 6CL6 functions as a grid-plate harmonic oscillator, and uses an 18 mc crystal that doubles in its output section. So, if the twenty meter exciter is operating at 14.2 mc, the six meter output from the Hiverter will be 14.2 plus 36 which equals 50.2 mc.

The output of the harmonic oscillator is capacity coupled to the cathode of the 5763 mixer. The output of the mixer is tuned to the sum frequency of the Hiverter oscillator and the 20 meter exciter to produce output in the

50 mc range.

The amplifier circuit uses a 6146 that operates class AB1 or AB2. An rf choke and a capacitor form a series resonant circuit at 14 mc to eliminate the chances of having a 14 mc signal appear at the output of the Hiverter. The amplifier output tunes through a pi network, so any antenna with 50 to 100 ohm impedance should work out just dandy.

The internal wiring is all done on printed circuits, and everything is easily accessible for maintenance. The only maintenance that the user will be running into will be the periodic tube checks that are recommended in the manual.

An external power supply is needed to power the Hiverter, and most modern transmitters should be able to provide the voltages required. Four voltages are needed: 6.3 vac, 600 vdc, 300 vdc, and -130 vdc for bias. If the driving transmitter can't supply these voltages, a supply such as the Heath HP20 can be used or a supply can easily be built.

Tuning up is pretty simple with only three controls: mixer, amplifier, and antenna. Of course the driving transmitter must be pre-tuned on twenty meters before its output is fed into the Hiverter.

We drove the Hiverter on all three modes with a 200-V that was adjusted to produce 20 watts of rf on 14 mc. We got the maximum output claimed for the unit with no trouble at all. On SSB, the output, measured with a Gavin bridge was thirty watts on voice peaks. We also got the full 35 watts on CW, and 20 watts on AM. In the course of testing the unit many stations were worked on all three modes on six meters. All the reports we got ranged from five by sixes to five by nines. Modulation reports were excellent. We experienced no trouble at all even when we overloaded the Hiverter input for short periods.

The Hiverter 50 is a heckuva lot of fun to use, and it is a simple way to get a good SSB signal on six without having to buy a mess of new equipment. The Hiverter should make quite a Christmas present . . . it's inexpensive (\$99.50 complete), efficient, and fun to hook up and use. We sure enjoyed it.

73 Staff.