

We ran the Standard Horizon CPV350 through the same sequence of VHF radio bench tests we've used in the past. We assessed the transmitter power output. FCC regulations prohibit more than 25 watts of power output from a marine VHF transmitter as well as requiring a low-power setting, typically 1 watt, for harbor use. All power output measurements were taken directly off the radio antenna port.

To power the CPV350, we used an Astron VS-70M variable voltage power supply to produce 13.8 volts DC, simulating a boat with the engine running and the alternator powering the boat's electrical system. Radio frequency (RF) power output, frequency accuracy, and power usage were recorded using a Ramsey COM3010 communications service monitor and a Fluke 336 ammeter. On channel 16 at room temperature (75 F) the CPV350 put out 24.1 watts while drawing 5.2 amps, quite good compared to VHF's we've tested in the past. A quick press of the H/L button shifted the transmitter to low power, where we measured only .52 watts at 1.5 amps. We stepped down the voltage to 11 volts DC to simulate transmitting with a weak battery. The CPV350 still pushed out 23.7 watts while drawing 5.4 amps.

Temperature extremes were next: We put the radio in our bait freezer (at 0 F) for four hours and then used our fish smoker and warmed things up (122 F) for two hours. After each extreme, we accomplished another transmitter power output test. Performance on these two tests was good.

Frequency accuracy is defined as the ability of the transmitter to send output signals exactly on the selected frequency. Regulations mandate an accuracy of 10 parts per million (about 1550 Hz off frequency in the marine band). Industry groups typically call for half that error, which is the specification on the CPV350. We measured the frequency accuracy during every transmitter test. Our frequency stability rating, which is transmitter frequency accuracy over its entire temperature operating range, was well within specifications, though not perfect. Things like substandard boat wiring, corroded electrical connections, long antenna cable runs, and numerous other factors could limit the actual radio frequency (RF) power emitted from the antenna.

Receiver sensitivity is the ability of the radio's receiver to hear a weak signal. Typical marine VHF receiver sensitivity ratings run from .22 to .35 microvolts with industry groups recommending a minimum .50. The CPV350's sensitivity specification is .25 microvolts. We tested for sensitivity using the minimum signal the radio would receive at a specific industry standard setting between background noise and generated signal (12 dB SINAD). In laymen's terms, that is approximately half static and half recognizable signal. The CPV350 tested as advertised and has more than enough sensitivity to pick up very weak incoming signals.

Another receiver standard is selectivity, the ability of the receiver to repro-

duce only the signals transmitting on your selected channel. Our equipment did not allow us to test for this. Instead, the manufacturer provided us with a selectivity specification of 80 dB—a very high number ranked with the best radios we've reviewed.

To rate the audio system, we measured the sound pressure levels at max volume while inputting a 1 kHz tone with our COM3010. The sound level measurement was taken at a distance of 1 meter using a Radio Shack decibel meter set to record dBA. The CPV350 hit 93.