

Alinco DX-70 HF/6m Transceiver Surprises Everyone

Elegant and wide functioning with many conveniences for a good price.

Alinco Electronics, Inc., located in Torrance, California, is best known for its single- and dual-band VHF/UHF handheld and mobile transceiver equipment, sold by over 80 amateur radio dealers throughout the United States. Certain Alinco radios have achieved "fan club" status because of their unique design and relatively low cost.

Some Alinco Products

For instance, there are the Alinco 1200TH2 9,600 baud packet radio made popular by Buck Rogers packet column; the Alinco DJ-G1T, the first handheld ever with spectral channel-occupancy bar graph; and the Alinco DR-599 dual-band mobile with "secret" antenna jack for public safety

800–950 MHz.

While Alinco Electronics, Inc., does not possess the sales volume and market share that Kenwood, Yaesu, and ICOM have, the company does enjoy a reputation for well-performing VHF/ UHF equipment at prices slightly lower than the big three, and a small but efficient service team who can turn around most repairs at the Torrance facility within 10 working days. Alinco's technician/engineer Taka Nakayama AB6VE, is extremely active on the ham bands, and knows the equipment inside and out. "I love operating ham radio," comments Taka. "When it comes to 9,600 baud packet, cross-band duplexing, or driving in downtown areas where intermodulation is a problem, I

know how well our Alinco radios work because I'm active on the air," says Nakayama with a smile. He holds an Extra class United States amateur license and a Japanese license, too.

But Alinco Electronics really surprised the amateur radio community by coming out with a high-frequency transceiver for the 1995 Dayton HamVention debut. "First we have VHF/UHF, and now we have high frequency, too," comments Alinco Electronics USA President Mark Morisato KC6OCX. "And our new high-frequency DX-70 does more!" adds Morisato. No doubt Mark is speaking of the built-in, all-mode, 6 meter, 50–54 MHz capabilities with 10 watts output that is included in the high-frequency package and is the same size as the very popular and successful Kenwood TS-50 mobile HF transceiver.

DX-70 Features

The new Alinco DX-70 HF plus 50 MHz all-mode transceiver runs 100 watts out from 1.8 MHz to 28 MHz on ham bands, and tunes 150 kHz to 30 MHz continuously from its excellent general coverage receiver. Plus, it covers 50–54 MHz, with all modes, and 10 watts out. That's plenty of soup to kick a 6 meter power amplifier into "QRO".

Most unique is the detachable control head that allows the new Alinco DX-70 to be separated so the head could go on the dash, and the transceiver under the seat. The mike still plugs into the transceiver body, so separating the two won't be a trunk-and-dash affair. But I don't recommend trunk mounting of any remote-control transceiver because of the long run of the DC power cable. This is just asking for trouble. If you want a longer mike cord, they have an EDS-5 microphone extension cable that will handle the job nicely. Keep in mind that the extension cable will cost extra—probably about \$40—so if you plan to run it remote, factor this in to the transceiver's street price, which will probably



Photo A. The Alinco DX-70 and the matching Alinco Antenna Tuner combine to form a compact "field" radio.

be around \$1,250.

Yes, 6 meter fans, there is a separate output SO-239 antenna jack. When you switch to the 6 meter mode, you can hear several relays "go klink," which sound tells you they are running an independent receiver and transmitter section for best performance on the 6 meter band.

I hooked the DX-70 to a three-element HF beam and regulated 12-volt power source, with the 6 meter side over to a three-element 6 meter beam to see how the radio would perform in the real world. The display popped up with a bold numerical readout of frequency: MHz, kHz, and hundredths. The numbers are slightly smaller than the Kenwood TS-50, but are much bolder, wider, and darker. And like the Kenwood TS-50, there is a "busy" icon when the squelch is open, along with an amber jewel LED that also lights up with receive activity. The mode indicator appears in the upper right-hand corner, and AGC fast or slow appears above the frequency display. Finally, the DX-70 has more than enough to drive the top-mounted speaker.

The Receiver

As soon as I hooked into the three-element tribander, there was no mistaking that the Alinco DX-70 has a wonderful receiver. It is dual conversion, with sensitivity and selectivity numbers identical to what you might find on everyone's sales brochures for a \$1,000 HF mobile SSB transceiver. But unique with the Alinco DX-70 is the bottom left RF button that lets you switch in the 10 dB pre-amp, switch it out, or switch in -10 dB and -20 dB attenuation. I found that the attenuator was a big help when operating on 40 meters, with a neighbor one block away just 75 kHz up the band. On 10 and 15 meters I switched the pre-amp on, which gave me a hot receiver.

The same button that controls the RF gain selection also has a subfunction: it turns the noise blanker on and off. While the noise blanker does not have any timing or sensitivity adjustments, it did a nice job of killing the clatter of our next door neighbor's old Ford Thunderbird when he fired up the engine. Furthermore, the noise blanker did not garble on extremely strong signals. On many HF transceivers, engaging the noise blanker on 40 and 80 meters causes most signals over S9 to become garbled. Not so with this noise blanker.

Selectivity on SSB is 2.4 kHz, and a convenient "filter" button next to the RF gain button allows you to kick in the 1-kHz SSB filter. The 1-kHz filter is already built in, and not an added option for tightening up on an incoming weak signal. You can further home in on an elusive signal by rotating the IF shift knob to dodge the QRM. This same filter network offers 1-kHz or 1/2-kHz CW passband. And if you're into shortwave listening, you can click in 2.4 kHz AM narrow, or 9 kHz AM wide—including FM—for full fi-

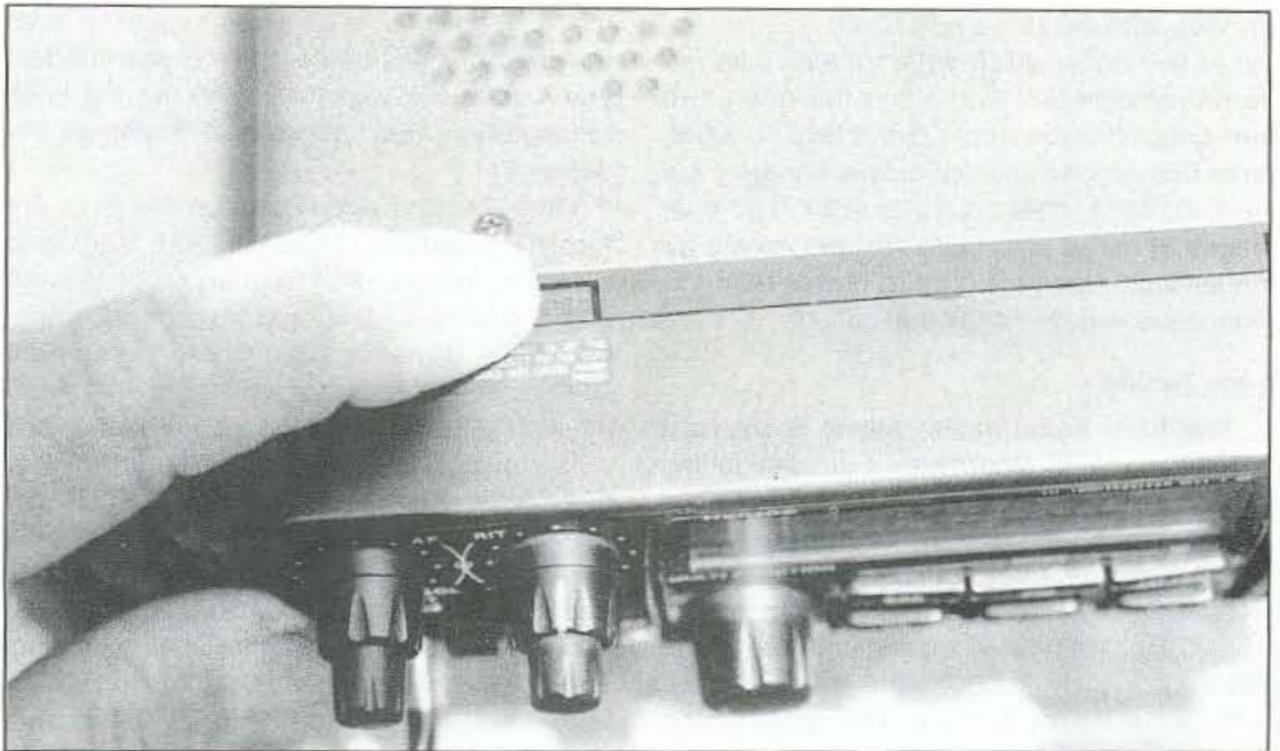


Photo B. Two "open" sliders clamp on the head.



Photo C. The head detaches in 3 seconds for purposes of security.

delity reception.

The first IF is at 71.75 MHz, the second IF at 455 kHz, and spurious/image rejection is listed as 70 dB. When I switched back and forth between several transceivers on the bench, the Alinco was more sensitive and just as selective as the higher-priced sets.

Everyone commented on the recovered audio on SSB as being "sharp." It's the

audio system with just a mid-range speaker. It's difficult to describe; try to listen for yourself.

The AGC is a function/AGC command on the same push button as the filter switch. The function button is conveniently located to the left of the set, a natural arrangement for depressing it with your thumb, while using your forefinger for the other button.

I switched up to 6 meters to confirm that all filters, noise blankers, AGC actions, and pre-amps weren't the same. I did notice on a big 6 meter antenna that 10 dB of pre-amp gain brought in a phantom sound of an FM or TV station way in the background that could never be tuned in, but didn't have that

problem with the pre-amp turned on when we tested the unit on the mobile 54-inch whip.

I also tested the Alinco 6 meter receiver performance against two other time-tested rigs and found the Alinco actually hotter on

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same-sounding audio I have heard from the Yaesu 900: impressive, full-fidelity treble without tightness or hiss. Listening to the DX-70, when tuned into a transmitting SSB station, is similar to hearing a hi-fi with bass, mid-range, and tweeters as opposed to an

receive with the pre-amp clicked on than the other two units, which were running with external amplifiers. And since the other two ran only 10 watts out, I didn't find 10 watts from this Alinco to be out of line. Mirage, now sold by MFJ, offers a 10-watt in, 150-watt output, 6 meter amp that I've seen selling for under \$350, so getting more power from the Alinco package is not all that difficult.

Fine Tuning

The front panel of the Alinco features a main tuning dial along with a smaller tuning dial. The smaller dial is rotated for both memory channel select and megahertz or ham band select, and to change frequencies in specific kilohertz steps like 2.5 kHz, 1 kHz, or 500 Hz. This sub-knob reminds me of the "click-click-click" knob on the Kenwood TS-140. It's a handy feature. The main tuning knob resolves frequency down to 100 Hz (.1 kHz) dial indication, in 25-Hz steps if you ever-so-carefully turn the big knob.

The multifunction knob lets you quickly rotate through 100 memory channel locations that hold a surprising amount of memo-channel information: Receive frequency, mode, any split TX, filter, AGC setting, RF-gain amps or attenuators, noise blanker on or off. This is a very smart memory that might allow you independently to select a CW frequency for fast AGC, narrow filter, no-noise blanker, and RF pre-amp. On an SSB channel, you could memorize slow AGC, noise blanker, -10 dB attenuator, and the normal filter. I considered this versatile memory capability as a definite plus for this very compact rig.

Another nice feature is the high/low power output button. Unlike a slide switch or no power option at all, you can quickly reduce power to local stations or reduce the current consumption of the radio on a dying storage battery.

A dial lock key prevents you from accidentally turning the big knob when tuning channels in from memory. As in Icom transceivers, memory positions allow for instant QSY from the big knob. This allows you to use the small memo knob to get you within a pre-set spot on the dial, and then use the big frequency knob. A quick flick of the small knob instantly puts you back to that original

memory position. And when operating from the memory position for the digital modes, you would lock (electronically) the big knob to insure you don't accidentally bump off frequency.

Other buttons and knobs on the front are the RIT capabilities; the "MF SEL" button to select memo, band, or frequency options; the little TX jewel LED that comes on for transmit; delta transmit; memory to permanent VFO selection; memory right, split, and priority—all the usual knobs on a HF transceiver.

If you press and hold the function key twice for longer than 2 seconds, "SE" will appear on the screen indicating you have set the Alinco DX-70 into the set mode. This procedure is similar to that of the Kenwood TS-50 in the "menu" mode. The small multifunction dial selects the many setup options.

The relatively large Alinco DX-70 instruction manual also describes procedures regarding simply resetting the mode settings, resetting all memory channels or VFOs, or performing a major reset of everything as if you had just purchased the equipment new from the dealer.

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Connections

On the back of the transceiver are the customary jacks for speaker or headphones, featuring the common miniature jack (not subminiature). There is the common CW jack for connecting a telegraph key or electronic keyer system. It lacks a built-in electronic keyer, but most hams prefer their own style of electronic keyer rather than any type of built-in keyer. The CW key-jack is also a miniature jack, not the big 1/4-inch jack you would find on larger equipment.

There are also RCA jacks for ALC as well as relay. When the equipment is new out of the box, the relay is out of circuit. Cutting an obvious internal jumper wire, detailed in the instruction manual, lets the relay close when the microphone or key is depressed. The ALC input voltage from the amp needs to be zero to -3 VDC.

There is a small screw for connecting a ground foil tab, two antenna jacks plainly marked for HF and 6 meters, the heat sink, and then the power connector. More good news: It's the common six-pin power plug that is used by Kenwood, Yaesu, and ICOM from a DC source.

There is an external antenna tuner connection that the manual fully describes as being compatible with a Kenwood AT-50, a Kenwood AT-300, an Icom AH-3, or even an SGC 230 automatic long-wire antenna tuner for field day/maritime mobile/mobile home applications.

While I didn't see an accessory jack for going digital, the microphone offers pin 6 as the detector output with associated pins for PTT, ground, mike ground, and 5 volts DC. Taka at Alinco, an avid HF digital operator, says this radio has full capabilities in the digital modes.

Power Output

Power output on high frequency was a good 100 watts, and I noticed the average modulation level around 60 watts, indicating only slight ALC action. This gave me a good punchy signal that everybody commented about as being "hefty" and sounding great. An SWR protection circuit throttles back output down to 25 watts with no antenna, and a momentary antenna short-out pulled the power down to a safe

5-watt level.

On 10 meters FM, power output was also 100 watts. This surprised me because throughout the bands AM was only 50 watts. On 6 meters, the power output was 15 watts SSB, 11 watts FM, and 6 watts AM.

I then tried operating on 10 meter and 6 meter repeaters, and everything was going along fine in entering the 10 meter 100-kHz offsets as well as the 6 meter 500-kHz offsets. But where, oh, where was the almost-always-necessary CTCSS selections out of menu? Not there! What? No subaudible tone encode? Oh yes, there is, but it uses dip-switch programming.

The CTCSS encode is on the bottom side of the transceiver, with no mention of it in the well-written and illustrated instruction manual. The tone board is already installed, included with the package, but you need your trusty toothpick and penlight to manipulate the eight different switches for any one of 38 possible subaudible tones. But besides that, I enjoyed operating the equipment. The only thing I couldn't figure out when running the unit and not reading the instruction manual was how to get it to go into the set mode. As soon as I cracked the books, it was right there.

It has been many years since I have seen the high-frequency transceiver manufactured with VHF and UHF bands included. When you get a chance, head on down to your local amateur radio dealer and take a listen to the sharp high-fidelity action on the new Alinco HF + 6 meter transceiver that has a very bright future.

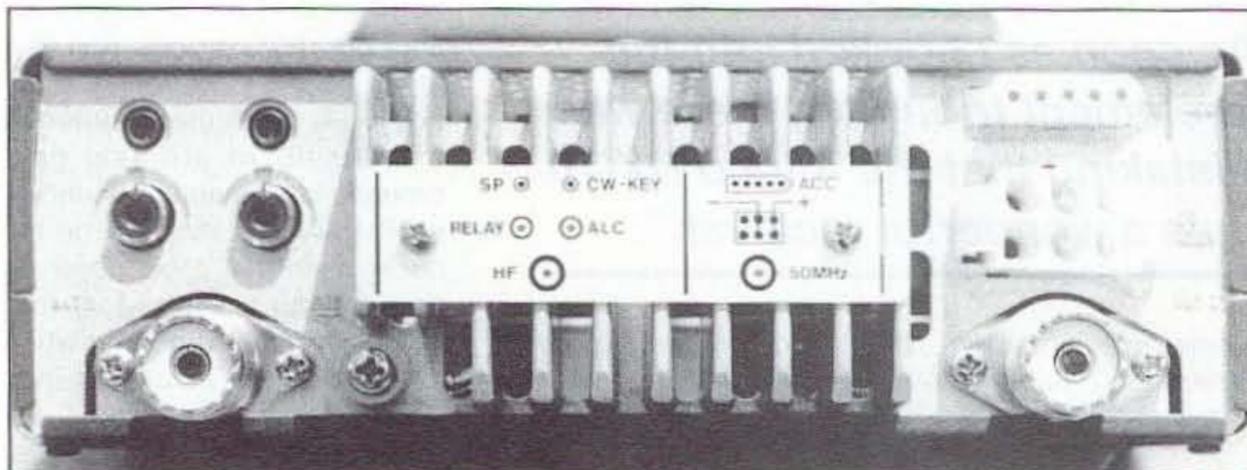


Photo D. On the rear of the DX-70 are two antenna jacks to the left for 3-30 MHz, and to the right for 50-54 MHz. It has the same power plug as all other brands of HF ham sets.