

Alinco DJ-X2000T Scanner

The Alinco DJ-X2000T is a handheld, wide coverage receiver made in Japan for the US market. It is a top tier model founded upon the DJ-X10T (November 1998 MT). The two models look alike, but the DJ-X2000T is supplied with a rapid charger and beefed up with more channels, more step sizes, a CTCSS decoder/finder, voice recorder, and a "Flash Tune" frequency counter which can tune the receiver.

Multimode frequency coverage extends from 0.1 to almost 2150 MHz (minus a few gaps) in 23 selectable step sizes and a user adjustable step size from 0.05 to 500 kHz (see Measurements). This US version skips the cell phone band inputs and outputs, but we discovered an undocumented gap at 1432.6 - 1504 MHz, too. A single knob atop the radio clicks when rotated and serves as a VFO knob, channel selector, menu navigation control, volume, and squelch control.

Our DJ-X2000T (serial no. T000530) came furnished with an EBP-37N 4.8 V, 700 mA NiCd pack and a 1 hour rapid charging stand, a step up from the 11 hour charger supplied with the DJ-X10T. Interesting options for both the DJ-X2000T and DJ-X10T include a soft carrying case, an EDC-36 automobile DC power cord, an EPB-34N 1200 mA battery pack, and a mobile bracket.

When used with the proper (optional) cables, the one can be cloned to another or connected to a personal computer. The instruction manual does not document the computer interface commands; however, we expect free software will be available at Alinco's web site <http://www.alinco.com>.

The DJ-X2000T is loaded with firmware features and is complicated to use. The 88-page instruction manual is helpful, though adding a menu navigation diagram would improve it.

Memory

The DJ-X2000T supports two VFOs and 2000 channels in 50 banks of 40 channels each. Memory banks are cryptically designated A0-A9, B0-B9, ..., E0-E9.

Each memory channel can be programmed with the frequency, an 8 character label, attenuator (off, low, high), CTCSS code, a skip (lockout) flag, and mode (WFM, NFM, AM, USB, LSB, CW, AUTO).

Scanning and Searching

The DJ-X2000T can scan more than one bank

at a time. Another type of scan, termed a PMR scan, permits you to define 10 scan lists of up to 20 channels each, regardless of bank. Think of the DJ-X2000T as having two ways to scan memory channels. You can program memory banks for different cities, and set up one PMR scan list to scan the police channels in all banks and a second PMR list to scan all the fire channels.

To measure scan speed, we locked out 25 of the 40 memory channels in a bank and programmed the remaining 15 with an assortment of VHF and UHF frequencies, CTCSS settings, and AM/NFM modes. Our DJ-X2000T plods slowly through the bank at only 3 channels per second in scan mode. It searches at about 29 steps/second, which is 8 steps faster than the AOR AR-8200 we tested (s/n 550004).

The global rescan delay is adjustable between 1 and 12 seconds, an improvement over the DJ-X10T's fixed 1 second delay.

The Auto Memory Write facility permits you to search between frequency limits and store up to 40 unique, active frequencies in any memory bank. This is a major improvement over the DJ-X10T which auto writes only in bank C9 and does not check for duplicate frequencies.

Both the DJ-X2000T and DJ-X10T support 20 search banks, designated P0-P9 and p0-p9, which you can program with frequency limits and labels. Search banks can be linked together, permitting you to search disjointed parts of the spectrum. You can also search between the frequencies in both VFOs. Up to 50 frequencies per search bank can be locked out using the Pass facility.

A priority feature lets you designate one channel to be checked for activity periodically (every 1 - 20 sec.) while scanning memory channels or searching, but chops up reception on non priority frequencies.

Other Features

The "Flash Tune" feature is amazing. Set the mode (e.g., AM, NFM, WFM), initiate the Flash Tune, and the DJ-X2000T sits quietly until it detects a strong signal (approx. -30 dBm, approx. 7100 uV) within the 50 - 1300 MHz

range. At that point, the display shows the approximate signal frequency and lets you hear the action. You must set the mode (e.g., AM, NFM) ahead of time. We used it to find and monitor 470 MHz transmissions from someone using a walkie-talkie 25 feet away, though it didn't detect a low power 170 MHz wireless microphone at 5 feet.

Our DJ-X2000T's Flash Tune also finds portable cellular phone transmissions, but it plays no audio and displays 823 MHz because the US version is cellular disabled.

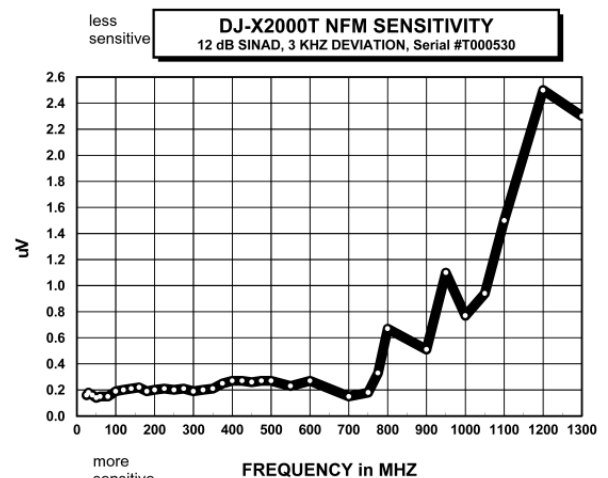
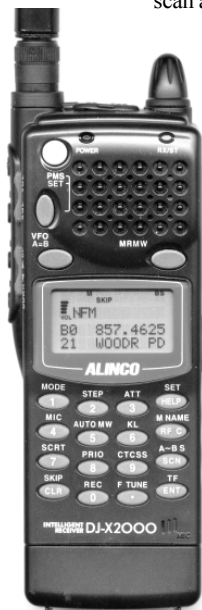
The DJ-X2000T contains other features which set it apart from simpler scanners:

1. a digital voltmeter which displays battery voltage
2. clock with on/off timer
3. a 160 second audio recorder
4. a built-in microphone which permits the radio to be used as a sort of hearing aid when fitted with an earphone
5. a two level attenuator
6. stereo WFM reception and stereo indicator lamp when using stereo headphones
7. a band scope which graphically portrays activity within a band of frequencies

Rugged Construction

Like the older DJ-X10T, the DJ-X2000T is ruggedly built. With its metal back and snap-on battery pack, the DJ-X2000T looks and feels like a 2 meter walkie talkie.

The single, multifunction knob is conical and difficult to grasp without your fingers slipping off. The squelch and volume are set by a pair of momentary contact rocker switches instead of simpler knobs, and we find this unhandy and time



consuming.

The Function, Search, Monitor, and Lamp keys are mounted under a black rubber boot on the side of the radio. The labels are not painted, making them difficult to read. The remaining keys are well labeled for daylight use and widely spaced. Key presses are confirmed by a selectable beep tone.

The dot matrix LCD screen features adjustable contrast via a keypad sequence. The display contains a 7 bar S-meter, and a separate green LED lights when the squelch is open – a nice touch. Both the display and numeric keypad are backlit in green when the Lamp key is pressed; however, the white key labels are difficult to see when lit.

◆ Performance

The stock antenna supplied with our DJ-X2000T looks like a 146/440 MHz base loaded rubber whip. Our Pryme RD-9 antenna receives better on VHF/UHF, but the Alinco antenna has the edge on shortwave and AM broadcast band signals.

Like the other handheld wide coverage receivers we tested, our DJ-X2000T overloads when connected to a full size, outdoor antenna. The low attenuation setting diminishes or eliminates the combination of pager and NOAA weather transmitter

intermod on the VHF-high band, but does not eliminate intermod from AM broadcasters on short or medium wave frequencies.

The single AM bandwidth is rather broad for shortwave reception in a crowded band. VFO and limit searches stop 5 or 10 kHz off center frequency when hunting NFM signals.

The DJ-X2000T instruction manual does not specify the IF (intermediate frequency) scheme. Our tests reveal a first IF of 724.4 or 304.3 MHz, depending on the frequency to which the DJ-X2000T is tuned. Other IFs include 45.04, 10.7, and 0.455 MHz.

The audio output is adequate, though not outstanding. A hiss noise is present when listening to our DJ-X2000T, even on the strongest sig-

nals. There are two audio fidelity settings available via menu choices. Our radio emits a 110-millisecond-long noise burst at the end of each transmission, regardless of the carrier or CTCSS squelch settings.

Our DJ-X2000T draws less battery current than the DJ-X10T we tested, and that's good news.

◆ Overall

The DJ-X2000T satisfies the need for a wide coverage, portable receiver. The Flash Tune feature is outstanding. The memory bank size is very good and there are more channels than you will probably ever need. The rapid charger is a godsend. The DJ-X2000T's main drawbacks are its slow scan speed and high price.

Measurements

DJ-X2000T Portable Scanner S/N T000530

Alinco, Inc.

438 Amapola Ave, Suite 130
Torrance, CA 90501-6201

List price: \$770, but sells around \$500

Frequency coverage (MHz):

0.1 - 2149.99995 MHz,
except 824 - 850, 869 - 895,
and 1432.6 - 1504 MHz

Step sizes (kHz):

0.05, 0.1, 0.2, 0.5, 1, 2, 5, 6.25, 8.33, 9, 10, 12.5, 15,
20, 25, 30, 50, 100, 125, 150, 200, 250, 500, and user program-
mable sizes between 0.05 and 499.95 kHz

Modes:

AM, WFM, NFM, USB, LSB, CW

Intermediate frequencies (MHz):

724.4 / 304.3, 45.04, 10.7, 0.455

FM modulation acceptance: 8.4 kHz

Squelch tail length (1uV @ 155 MHz): 110 ms.

Practical memory scan speed: 3 channels/sec.

Search speed: 29 steps/sec.

Current consumption at 4.8 VDC:

off - 391 uA
manual - 108 mA
scan - 108 mA
full volume - 256 mA
lamp - 38 mA additional

Low battery warning at 4.48 VDC or less.

Shutdown at 3.94 VDC or less.

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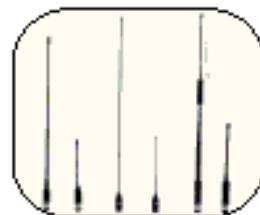
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