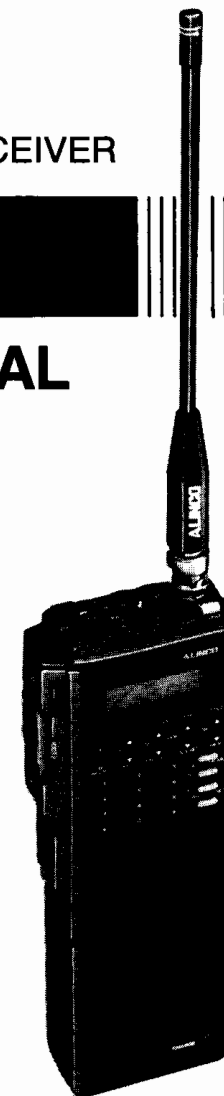


**ALINCO**

VHF/UHF DUAL BAND FM TRANSCEIVER

**DJ-500T/E**

**INSTRUCTION MANUAL**



**ALINCO ELECTRONICS INC.**

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# INTRODUCTION

Congratulations, now you are the owner of one of our many "ALINCO" products. Your DJ-500T/E has been manufactured and tested very carefully at the factory and will give you satisfactory operation for many years.

# ACCESSORIES AVAILABLE FOR THE DJ-500T/E

A. EBP-6NAZ	9.6 V, 450 mAH NiCd
B. EBP-7NAZ (Standard)	7.2 V, 700 mAH NiCd with DC/DC converter
C. EBP-8NAZ	12.0 V, 700 mAH NiCd with DC/DC converter
D. EDC-2	Cigarette lighter plug
E. EDC-8Z	Cigarette lighter plug with noise filter
F. EDC-10 (120 V)/EDC-6 (220 V)	Wall charger for 7.2 and 9.6 V NiCds
G. EDC-11 (120 V)/EDC-12 (220 V)	Wall charger for 12.0 V NiCd
H. EME-2	Earphone/microphone
I. EME-3Z	Earphone
J. EMS-1Z	Speaker microphone
K. ESC-9	Soft case
L. EBC-2Z	Mobile Bracket
M. EDC-7	Charging stand for EBP-6NAZ

# SPECIFICATIONS

## GENERAL

Frequency coverage:	144.0–148.0 MHz	DJ-500T
	440–450 MHz	
	144.0–146.0 MHz	DJ-500E
	430–440 MHz	
Emission type:	16F3 (FM)	
Antenna Impedance:	50 ohms, unbalanced	
Operating voltage:	5.5 to 12 vdc	
Operating Current:	Battery save	15 mA Transmit LO 0.4/0.6A
(typical at 7.2 vdc)	Squelched	50 mA Transmit HI 0.8/1.2A
	Max. audio out	130 mA
Battery charging time:	14–16 hours	
Dimensions:	58 mm (L) × 176 mm (H) × 30 mm (W) (2 <sup>5</sup> / <sub>16</sub> " × 6 <sup>15</sup> / <sub>16</sub> " × 1 <sup>1</sup> / <sub>4</sub> "	
Weight:	0.435 kgs. (0.958 lbs.)	

## RECEIVER

Type:	Dual conversion; 1st IF 55.05 MHz; 2nd IF 455 kHz
Sensitivity:	Less than 25 µV @ 12 dB SINAD
Spurious response	more than 60 dB
Rejection ratio:	
Selectivity:	More than ±7.5 kHz at –6 dB Less than ±15 kHz at –60 dB
Squelch sensitivity:	Less than –12 dB
Audio output:	more than 550 mW (10% THD), 8 ohms

## TRANSMITTER

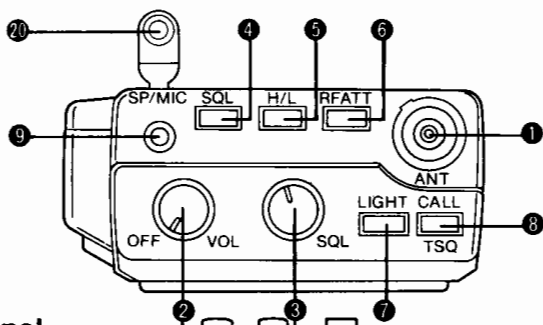
Output power:	See table
Modulation:	Variable reactance FM
Maximum deviation:	±5 kHz
Harmonic suppression:	–60 dB
Microphone:	Built-in electret condenser
Operating modes:	Simplex Shifted + or –600 kHz or 5 MHz from receive frequency (Odd offsets programmable)

RF POWER OUTPUT TABLE		
Battery	HI	LO
EBP-6NAZ	V/U: 4.5/4 W	600 mW (Approx.)
EBP-7NAZ	V/U: 2.5/2 W	450 mW ( " )
EBP-8NAZ	V/U: 6/5.5 W	850 mW ( " )
EBP-9NA	V/U: 2.5/2 W	450 mW ( " )

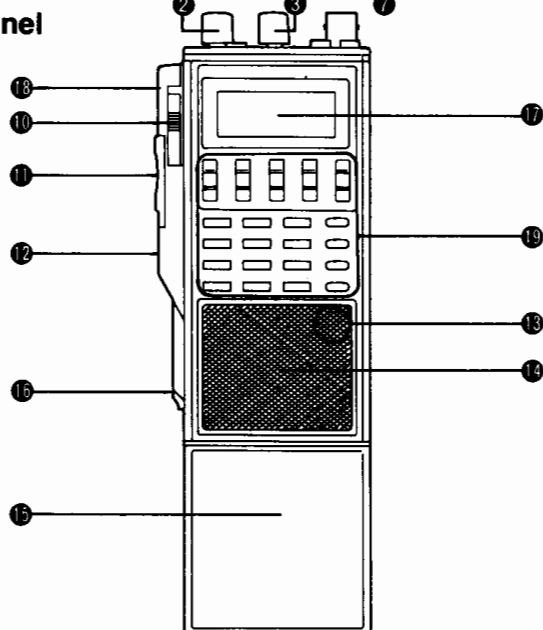
# OPERATION

## CONTROL FUNCTIONS

### Upper Panel



### Front Panel



#### 1 BNC Antenna Connector

Attach an antenna with an impedance of 50 ohms to this connector.

#### 2 ON/OFF Volume Control

When this control is turned completely counterclockwise, the power is OFF.

Rotate clockwise to turn the unit ON and increase audio.

#### 3 Squelch Control

When no signal is present in the receive mode, adjust this control clockwise until the noise threshold is reached.

#### 4 Squelch Button

In the locked down position, squelch will open regardless the position of the squelch control knob.

#### 5 H/L (High/Low) Power button

This button is used to set output power to High or Low.

In the up position, the output power is High. In the down position, the output power is Low.

#### 6 RF ATT (RF Attenuator) Button

When depressed, the received signal will be attenuated by 10 dB.

#### 7 Light Button

When pressed, light will illuminate the LCD for 5 seconds. If the PTT switch is pressed within the 5 seconds, the illumination will stay ON for another, 5 seconds.

#### 8 CALL/T.SQL (Call/Tone Squelch) Button (500E: TONE BURST/T.SQL)

This button is used to call Memory Channel "0" immediately to the LCD.

When used with the F key activates the Tone Squelch (CTCSS) feature. See Page 9.

#### 9 SP/MIC Jack

This jack is for connection of an external speaker, optional earphone microphone, earphone or speaker microphone.

#### 10 F. LOCK (Function Lock)

This switch is used to disable all function buttons except the PTT and Squelch. In the up position (orange color will appear), this switch is activated.

#### 11 PTT (Press to Talk)

For transmission, press this switch and speak into the microphone.

#### 12 Reset Button

This button is used to clear all frequencies stored in memories.

Simply press in the hole with a tooth pick or other non conductive object when power is ON. Once the transceiver has been reset, 145.00 MHz on VHF and 445 MHz (500E: 433 MHz) on UHF will be displayed for all memories.

#### 13 Microphone

An electret condenser microphone.

#### 14 Speaker

#### 15 Battery

#### 16 Battery Release Button

This button is used to release the battery pack for removal.

#### 17 LCD

#### 18 F (Function) Key

This key is used to access all secondary function modes.

To access function modes, press the F key and hold, then press command keys required.

This key is also used to activate the single memory, 16 digit and Auto Dialer.

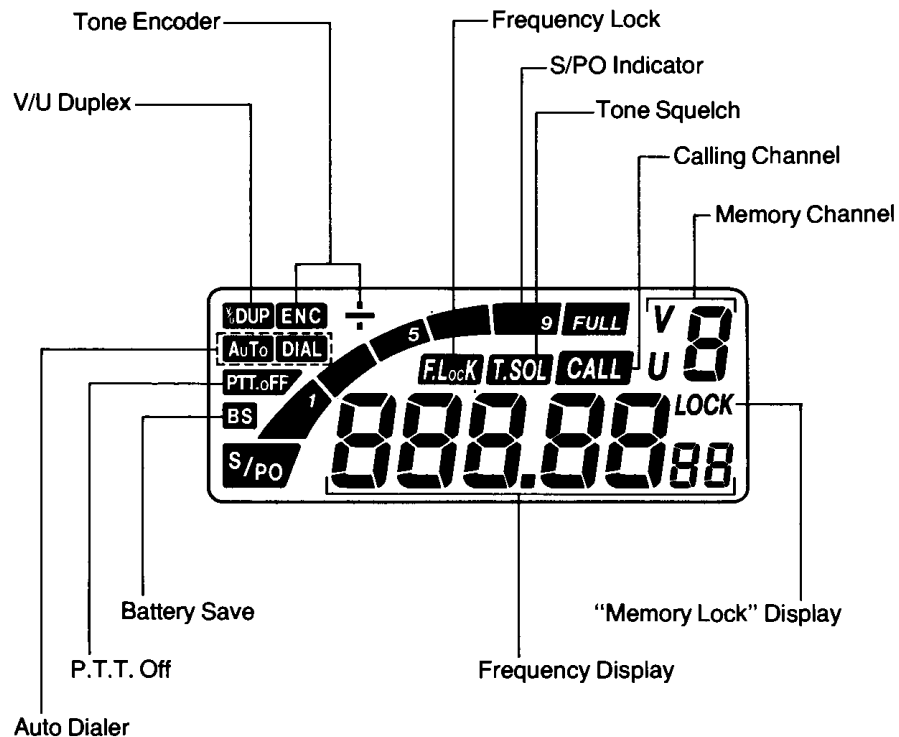
See Function.

#### 19 16 key DTMF Pad

#### 20 SP/MIC (Speaker/Microphone) Jack Cover

This cover is for SP/MIC jack.

## Display



## Functions and Operations

### 1. Selection of VHF or UHF

Press V on the V/U SC button, the transceiver is in VHF mode showing VHF frequency on the LCD. Press U on the V/U SC button, the transceiver is in UHF Mode showing UHF frequency on the LCD.

### 2. Frequency selection

You may enter a frequency in the VFO by simply pressing the required keys on the DTMF pad as you read the frequency from left to right, ie: 145.520 Press the 1, 4, 5, 5, 2 and 0. When pressing the digits on the DTMF pad, you must complete the desired action within 5 seconds between digits. If you take longer than 6 seconds, the display will reset to the last complete frequency shown.

### 3. Frequency Step Selection

This transceiver has 5 different frequency steps.

To set the desired step, press and hold the F key and press the STEP button.

Each time you press the key, the radio will advance from one frequency step to the other, i.e. "5" to "10" to "12.5" to "20" to "25".

## ■ MEMORY

This transceiver has 10 Memory Channels in each band, VHF and UHF.

### Memory Entry

1. Press the V or U on the V/U SC button to select the band.
2. Press the UP or DOWN on CH button to select the desired Memory Channel.

Make sure the memory channel selected is open for memory storage. If "LOCK" shows under the Memory number, you cannot store into the Memory Channel. To release memory "LOCK", press the F key and the MW button.

3. Select the desired operating frequency.
4. Press the F key and hold, then press the MW button. The frequency is now stored in the Memory Channel shown and "LOCK" has reappeared.

## ■ SCAN

The DJ-500T/E has the ability to scan between one memory in VHF and one memory in UHF.

1. Select the desired Memory Channel in VHF and UHF bands.
2. Press and hold the F key and press the V/U SC button. The decimal point will flash.
3. The transceiver will now scan for 3 seconds on each memory channel.
4. To clear scanning, press any buttons on the front panel or press the PTT switch.

## TRANSMISSION

### A. Simplex Operation

1. Select the desired band (VHF or UHF).
2. Select the desired operating frequency using any of the methods described above.
3. Press the PTT switch. The S/PO indicator will light.
4. Speak into the microphone. The recommended distance to the microphone is 2 inches ( 5 cm). Talking too far away may result in reports of weak audio.
5. Release the PTT switch to return to the receive mode.

### B. Cross Band Operation (Full Duplex)

1. Select the desired band (VHF or UHF) for transmitting.
2. Select the transmitting frequency in VFO.
3. Select the other band from the receiving band.
4. Select the desired frequency in VFO for the receiving frequency.
5. Press and hold the F key and press the V/U DUP button. The V/U indicates on the LCD.
6. Press the PTT, the frequency chosen in No. 2 above is transmitted while simultaneously receiving the frequency chosen in No. 4 above.
7. To cancel this operation, press and hold the F key and press the V/U DUP button.

## REPEATER

### A. Transmitter Offsets

This transceiver allows you to store the frequency, and offset direction in Memory.

#### 1. Transmitter Offset

This transceiver has been set from the factory at 600 kHz on VHF and 5 MHz on UHF.

To select an odd offset, press and hold the F key and press the OFFSET Button, then press the 1 MHz, 100 kHz and 10 kHz button to acquire desired offset.

#### 2. Offset Direction

To select the desired transmitter offset direction, press and hold the F key and press the ENC +/- button. Each time you press the button, the radio will advance from one offset to the other, i.e.

“ENC -” to “-” to “ENC +” to “+” to “No display” indicating simplex.

## ■ TONE FREQUENCY SELECTION (DJ-500T)

This transceiver has 37 tones as listed below.

Tone frequency is shown on the LCD by Tone number corresponding with the chart. To select the desired sub-audible tone, press and hold the F key, then press the “D” button on the DTMF pad. A tone number preceded by an “E” will show on the LCD. To change the Tone number, keep pressing the F key and press the UP/DOWN button of 1 MHz, 100 kHz or 10 kHz.

Release the F key to return to the receiver frequency display.

To activate the sub-audible tone, select the ENC + or ENC - on the LCD. The subaudible tone will be transmitted whenever the PTT switch is depressed.

## ■ TONE SQUELCH (DJ-500T)

This function allows you to remain squelched until the proper Tone frequency is received. If you are on a busy frequency, this can be quite an aid.

1. Press and hold the F key, then press the T.SQL SET button. Continue to depress the F key while using the UP/DOWN buttons to select the desired tone number.
2. To activate the Tone Squelch feature, press and hold the F key, then press the orange T.SQL button.
3. The T.SQL indicator will now show on the LCD.
4. To cancel T.SQL function, repeat the procedure No. 2 above.

Tone No.	Tone Freq. (Hz)	Tone No.	Tone Freq. (Hz)	Tone No.	Tone Freq. (Hz)
01	67.0	14	110.9	27	173.8
02	71.9	15	114.8	28	179.9
03	74.4	16	118.8	29	186.2
04	77.0	17	123.0	30	192.8
05	79.7	18	127.3	31	203.5
06	82.5	19	131.8	32	210.7
07	85.4	20	136.5	33	218.1
08	88.5	21	141.3	34	225.7
09	91.5	22	146.2	35	233.6
10	94.8	23	151.4	36	241.8
11	100.0	24	156.7	37	250.3
12	103.5	25	162.2		
13	107.2	26	167.9		

### ■ REV (Reverse) Function

This function allows monitoring of the input frequency when operating in repeater mode.

When operating with + or - offset, press and hold the F key, then press the REV button.

This will invert the frequencies you are operating. Transmit will become receive and receive will become transmit. Important Note: This function will only operate in VFO mode. If "LOCK" is showing below memory number, press and hold the F key, then press the MW button. This will unlock the Memory and allow access to the frequency.

### ■ AUTO DIALER Function

The DJ-500T/E has a single memory, 16 digit, auto dealer built in.

To load a number into the memory:

1. Press and hold the F key, then press "A" on the DTMF pad. The LCD will go blank, and this will also turn the function on.
2. Punch up the numbers on the DTMF pad you wanted the unit to transmit to the auto patch.  
You can include your "UP" code if the controller can handle the digits at the same speed and spacing as the phone number.
3. To transmit the numbers showed in memory, simply press the F key and the PTT switch at the same time. It is not necessary to hold the F key depressed once the sequence of numbers begin to transmit.
4. To cancel the Auto Dial Function, press and hold the F, then press the "A" and "C" buttons on the DTMF pad.

### ■ LIGHT Function

As described previously, the DJ-500T/E has a light to illuminate the LCD for low light viewing. If you press the LIGHT button, the light will stay on 5 seconds if the light button is not pressed again. If you find it necessary for the light to remain on, press and hold the F button then the light button. The light will now stay illuminated until turned off (The same way it was turned on) or the radio is turned off with the ON/OFF knob.

### ■ PTT Lock (Press to Talk Lock) Function

Press and hold the F key, then press the PTT.L button. The PTT OFF indicator will appear on the LCD. In this mode, the transceiver's functions all work except transmit.

To cancel this function, repeat the same procedure above.

### ■ BEEP ON/OFF

This function is used to enable the confirming that follows all keystrokes. Press and hold the F key, and press the BEEP button.

This function is not indicated by any indicator on the LCD.