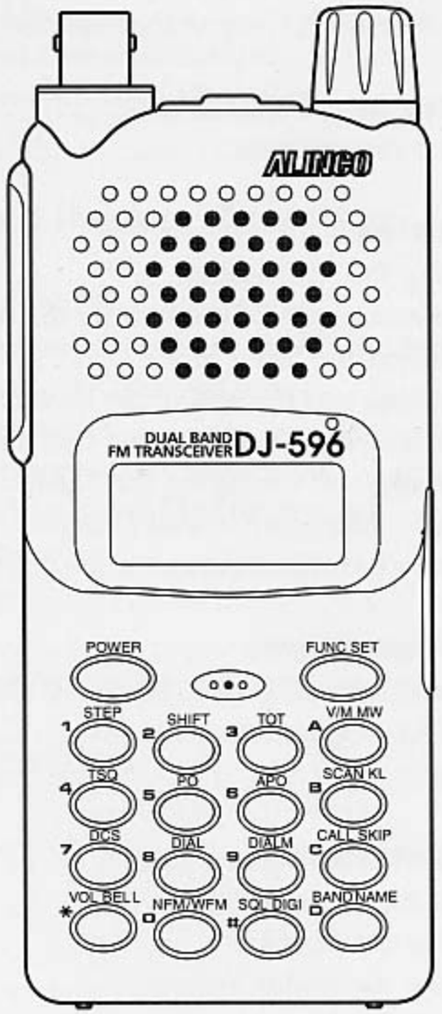
ALINCO

DUAL BAND FM TRANSCEIVER

DJ-596T/E

Instruction Manual



Thank you for purchasing this ALINCO transceiver. This instruction manual contains important safety and operation instructions. Please read it carefully before using the transceiver and be sure to keep it.

ALINCO INC.

Notice

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FC

Tested to Comply
With FCC Standards

FOR HOME OR OFFICE USE

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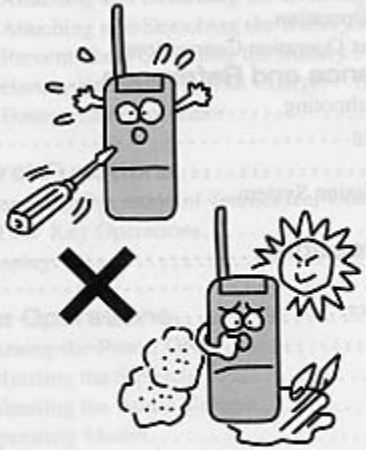
English Edition Printed in Japan.

Contents

Before Operating the Transceiver

■ Attention

- Do not open the case or touch the interior components. Tampering can cause equipment trouble.
- Do not expose the transceiver to direct sunlight, dusty places or place it near sources of heat.
- Keep the transceiver away from TVs, tuners or other equipment if it interferes with reception.
- Securely connect the antenna included with the transceiver.
- When transmitting for a long time at high power, the transceiver can overheat.
- Turn the power off immediately if the transceiver emits smoke or strange odors.
  Ensure that the transceiver is safe, then bring it to the nearest Alinco service center.



■ Points to Note Before Transmitting

Many wireless stations use frequencies adjacent to the ham bands for business purposes. Be mindful when transmitting near them.
Even when amateur stations obey regulations, unexpected interference can occur.
Pay sufficient attention during mobile operation.

⚠ **Caution** The use of a transceiver in the following places may be prohibited:

- Aboard aircraft
- In airports
- In shipping ports
- Within or near the operating area of business wireless stations or their relay stations.

Before using in any of the above places, obtain any necessary permission from the proper authorities, and be mindful of local laws that govern amateur radio operation.

■ Points to Note When Using an External Power Supply

- Use a 6.0V-16.0V DC external power supply.
- When connecting the power supply to the transceiver, use the optional DC cable for base station operation (ECD-37). Connect the cable to the DC jack on the side of the transceiver.
- When power is supplied from a cigarette socket of a car, use the cigarette lighter cable (EDC-43) or the cigarette lighter cable with filter (EDC-36). Use the cigarette lighter cable with filter (EDC-36) during mobile operation to prevent noise. Be sure the car's supply voltage and polarity are correct for use with your equipment.
- Turn the transceiver's power off when connecting or disconnecting the DC cable.

1. Functions and Features

- 39 CTCSS Tone Squelch settings
- 104 DCS Digital Code Squelch settings
- TOT (Timeout timer) function
- Channel naming feature
- Tone Call (burst) functions (1750,2100,1000,1450Hz and CALL)
- 9 Auto Dialer Memories
- Direct Frequency input function
- Cloning
- Theft Alarm function
- MRS (Experimental Mosquito Repelling Signal) function

1.1 Standard Accessories

- Ni-MH Battery Pack EBP-50N (9.6V 700mAh)
- Battery Recharger (EDC-93(120V), EDC-94(230V)
- Helical Antenna
- Belt Clip 2 pcs
- Hand Strap
- Instruction Manual
- Warranty Card

2. Accessories

2.1 Attaching the Accessories

● Connecting and Disconnecting the Antenna

·Connecting

1. Hold the antenna by its base.
2. Align the grooves at the base of the antenna with the protrusions on the antenna connector.
3. Slide the antenna down and turn it clockwise until it stops.
4. Confirm that the antenna is securely connected.

·Disconnecting

Turn the antenna counter-clockwise to disconnect the antenna.

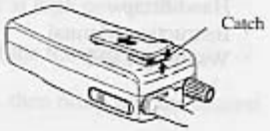
● Attaching the Hand Strap

Attach the hand strap as shown in the illustration on the left.

● Attaching and Detaching the Belt Clip

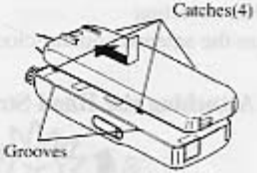
· Attaching
Attach the belt clip to the back of the transceiver and push it until it clicks.

· Detaching
Push up the catches of the belt clip, and pull it.



● Attaching and Detaching the Battery Pack

· Attaching
Align the catches on the battery pack with the grooves on the transceiver, and push in the direction of the arrow until it clicks.



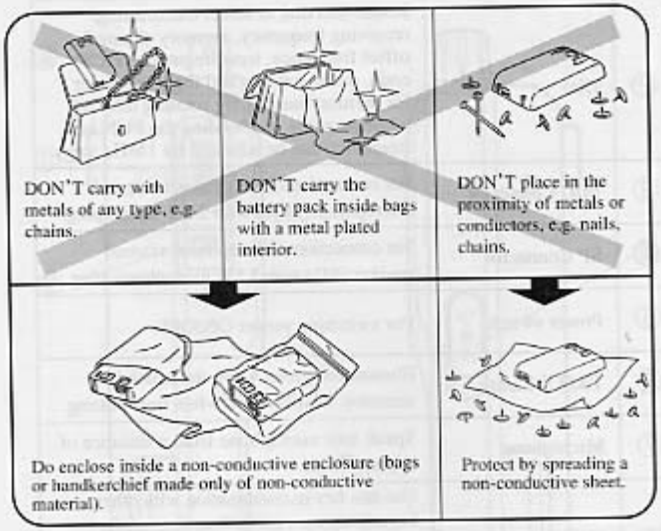
· Detaching
Push up the catch at the bottom, and slide the battery pack out.

⚠ Caution

- The battery pack is not charged when shipped. It must be charged before using.
- It takes up to 12 hours (maximum) to fully charge the battery pack with the EDC-92.
- Charging should be conducted within a temperature range of 0 to 40 ℃. (32-104 °F)
- Do not modify, dismantle, incinerate or immerse the battery pack in water, as these practices can be dangerous.
- Never short-circuit the battery pack terminals, as this can cause damage to the equipment or lead to overheating the battery, which could cause burns.
- Unnecessary prolonged charging (overcharging) can deteriorate battery performance.
- The battery pack should be stored in a dry place where the temperature is from -20 ℃ to -45 ℃. (-4 °F - +113 °F)
  Temperatures outside this range can cause the battery liquid to leak. Exposure to prolonged high humidity can cause corrosion of metal components.
- Typically, the battery pack can be charged up to 500 times. However, the battery pack can be considered dead if the period of use drops significantly despite the pack being charged for the aforementioned charging time. When this happens, a new pack should be used.
- In the interests of environmental protection, do not dispose of the used battery pack improperly. Check with your local solid waste officials for details on recycling options or proper disposal in your area.
- The battery pack can be charged by mounting it on the DJ-596 and connecting 13.8VDC to the DC power supply jack on the transceiver.

● Prevent Short Circuiting the Battery Pack

Be extra cautious when carrying the battery pack; short-circuiting will produce surge current possibly resulting in fire.



⚠ **Caution:** Keep the battery pack inside the included pouch when carrying.

● Battery Recharger (Wall Charger) (EDC-93/94)

- Recharging

1. Mount the battery pack on the transceiver
2. Connect AC adapter plug to the external power supply jack on the transceiver.
3. Connect to the AC outlet.

⚠ **Caution**
- Turn the transceiver power off before recharging the battery pack. (EDC-93/94)
- Disconnect the EDC-93/94 from the outlet while not using it.
- Never charge the battery packs of other manufacturers with this charger.
- The required recharging time depends on the condition and model of battery pack. Refer to the instruction manual of the battery pack.
- Never short-circuit the recharging terminals of this recharger with metal objects, etc. The charger can be damaged.
- The EDC-93/94 does not work when the voltage from the wall outlet is extremely low.
- The charger cannot be used to charge dry cell batteries, or used with the dry cell battery pack case.

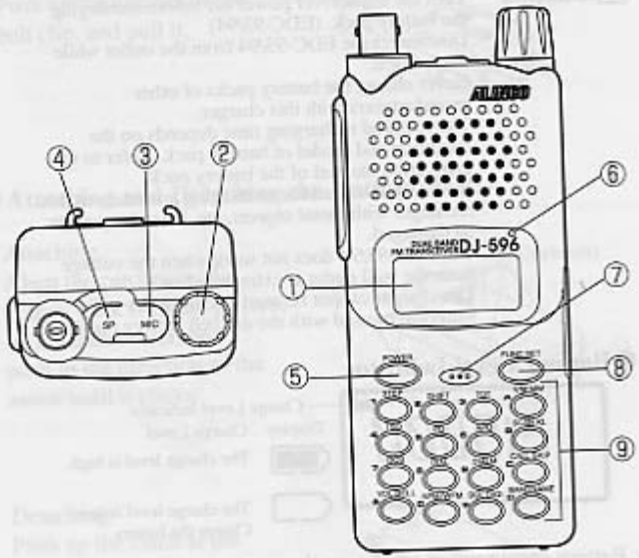
● Battery Level Indicator

- Battery consumption level may change depending on the surrounding temperature or the frequency of use.
- Even if the battery monitor indicates the need for charging, you may be able to continue operations for low-output transmissions or reception.

3. Control Functions

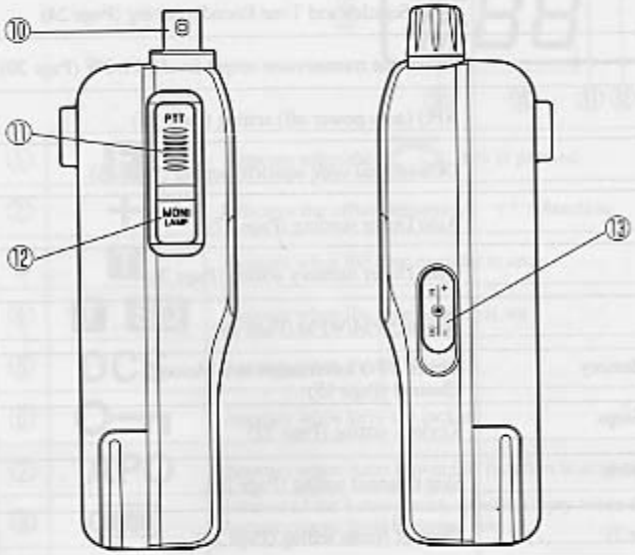
3.1 Name and Operation of the Transceiver Controls

■Top and Front Views



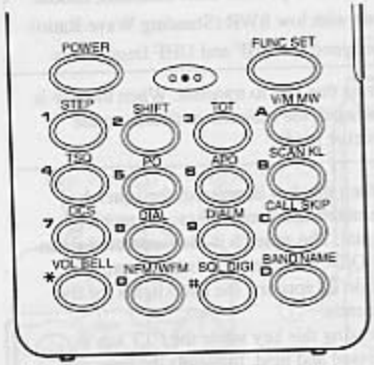
Key		Function
①	Display (LCD)	Refer to "Display" in this manual. (Page12)
②	Dial	Rotate this dial to select transmitting/ receiving frequency, memory channel, offset frequency, tone frequency, DCS code, mode settings and input character for memory names. By rotating the dial while pressing and holding the FUN key, frequency can be adjusted by 1MHz steps.
③	MIC Connector	For connection of the optional external microphone (2kΩ) with 2.5Φ stereo plug.
④	SP Connector	For connection of the optional external speaker (8Ω) with 3.5Φ monophonic plug.
⑤	Power switch	For switching power ON/OFF.
⑥	TX/RX Lamp	Illuminated green when the squelch unmutes. Displays red when transmitting.
⑦	Microphone	Speak into microphone from a distance of approx. 5 cm.
⑧	FUNC key	Use this key in combination with other keys to access various functions of the transceiver. Holding this key for 3 seconds activates the Setting mode where various parameter adjustments are possible.
⑨	Key pads	Refer to "DTMF Key Operations". (Page 11)

■Side View



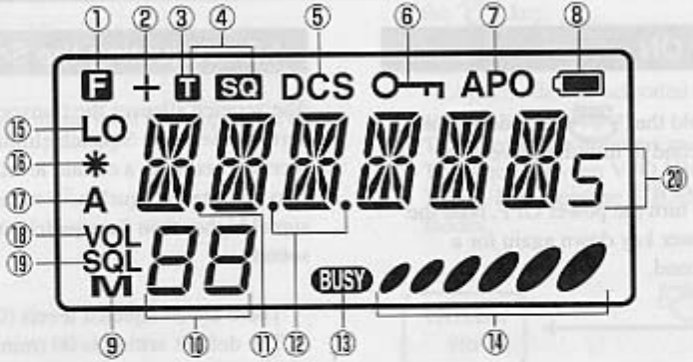
Key		Function
⑩	BNC Antenna Connector	For connection of the included helical antenna. If you use other antennas, choose one with low SWR (Standing Wave Ratio) designed for VHF and UHF frequencies.
⑪	PTT key	Press this key to transmit. When the key is released, the transceiver returns to the receive mode.
⑫	MONI key	When this key is pressed, the squelch is unmuted and you can hear the received signal. The squelch is also unmuted when TSQ/DCS are set. If this key is pressed while F appears, the lamp lights for five seconds. Pressing this key while the PTT key is pressed and held, transmits the tone call signal.
⑬	DC-IN	Terminal for connecting an external power supply. By connecting the optional cigarette lighter cable with filter (EDC-36), you can get power from a car. The pin in the center of the jack is + pole, and the surrounding part is − pole. Use a stable power supply with DC6.0~DC16.0V, 2A or more.

3.2 DTMF Key Operations



Key	Independent operation	While F appears after pressing the FUNC SET key
1 STEP	Inputs "1"	Tuning Step setting (Page 16)
2 SHIFT	Inputs "2"	Shift / Split setting (Page 16)
3 TOT	Inputs "3"	TOT (timeout timer) setting (Page 28)
4 TSQ	Inputs "4"	Tone Squelch and Tone Encoder setting (Page 24)
5 PO	Inputs "5"	Selects the transmission output level HI/LOW (Page 20)
6 APO	Inputs "6"	APO (auto power off) setting (Page 28)
7 DCS	Inputs "7"	DCS (digital code squelch) setting (Page 25)
8 DIAL	Inputs "8"	Auto Dialer sending (Page 27)
9 DIALM	Inputs "9"	Auto Dialer memory setting (Page 26)
0 NFM/WFM	Inputs "0"	Selects NFM/WFM (Page 19)
A V/M MW	Switches VFO / Memory modes (Page ?)	Writes VFO information to a Memory Channel (Page 15)
B SCAN KL	Scanning Starts / Stops (Page ?)	Keylock setting (Page 22)
C CALL SKIP	Switches to Call mode (Page ?)	Skip Channel setting (Page 21)
D BAND NAME	Band change (Page ?)	Channel Name setting (Page 22)
# SQL DIGI	Squelch Level adjustment (Page ?)	—
* VOL BELL	Volume adjustment (Page ?)	BELL function setting (Page 28)

3.3 Display



①	F	Appears when the FUNC-SET key is pressed.
②	+	Indicates the offset frequency (−/+) direction.
③	T	Appears when the tone encoder is set.
④	T SQ	Appears when the tone squelch is set.
⑤	DCS	Appears when the DCS is set.
⑥	O-┐	Appears when keys are locked.
⑦	APO	Appears when Auto Power Off function is activated.
⑧	▭	Interior of the battery mark appears empty when the battery charge level becomes low.
⑨	M	Appears when the Memory mode is activated.
⑩	88	Indicates memory channel No. and other setting levels.
⑪	•	Appears when external terminal control function is ON.
⑫	•	Divides MHz and kHz of the frequency. Blinks during scanning operation.
⑬	BUSY	Appears when the squelch is unmuted.
⑭	▰▰▰▰▰	Indicates received signal level and transmission output.
⑮	LO	Appears when the transmitter output level is set to LOW.
⑯	✱	Appears when the Theft Alarm is ON.
⑰	A	Appears when NFM mode has been selected.
⑱	VOL	Appears while the audio volume is being adjusted.
⑲	SQL	Appears while squelch is being set.
⑳	88.888.5	Indicates the frequency and status of various settings.

4. Basic Operations

4.1 Turning the Power ON

Hold the POWER key down for a second to turn the power ON.

To turn the power OFF, hold the power key down again for a second.

4.2 Adjusting the Squelch

The squelch silences the transceiver except for signals above a certain level. The Squelch eliminates noise when the transceiver receives less than a certain level.
"To unmute the squelch," means that the transceiver receives a signal higher than the squelch setting and reproduces the received sound.

- There are 21 squelch levels (00 ~ 20).
- The default setting is 00 (minimum).

1. Press the SQL/DIG key. SQL and squelch level will appear on the LCD.

2. Adjust the squelch level by rotating the dial.
   A higher squelch level requires a stronger signal to unmute the squelch.

3. Press any key other than the MONI key to complete the setting.
   The setting function terminates automatically if no key is pressed within 5 seconds.

4.3 Adjusting the Audio Volume

- There are 21 volume levels (00 ~ 20).
- The default setting is 00 (minimum).

1. Press the * key. **VOL** and volume level will appear on the LCD.

2. Adjust the volume level by rotating the dial.
   A higher volume level produces a louder sound.

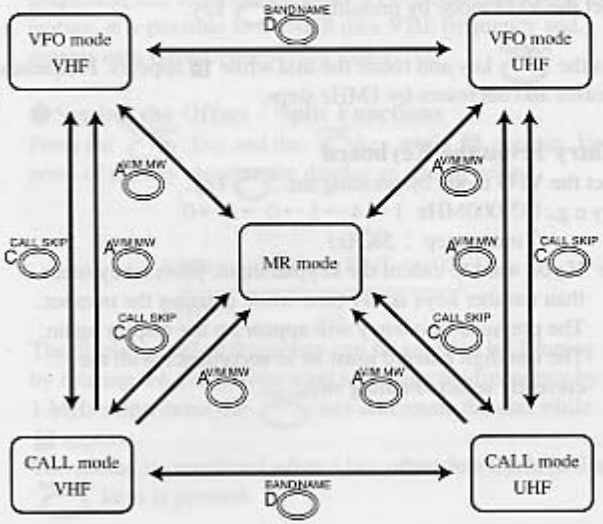
3. Press any key other than the MONI key to complete the setting.
   The setting is automatically completed if no key is pressed within 5 seconds.

4.4 Operating Modes

The DJ-596 has three operating modes: VFO mode, MR (memory) mode and CALL mode.
The VFO mode has one VHF and one UHF channel. The MR mode has 100 channels (VHF/UHF mixture) and the CALL mode has one VHF and one UHF channel.

■ Switching Between Modes

"VFO mode" and "MR mode" are switched by pressing the A/M key.
M appears on the display when "MR mode" is activated, and disappears when "VFO mode" is activated.
"CALL mode" is activated by pressing the C key. **C** appears on the display.
To return to the previous mode, press the C key again.
To switch between VFO VHF and VFO UHF, or CALL VHF/UHF, press the "BAND" key while in either of those modes.



4.5 VFO Mode

The factory default setting for the DJ-596 is the VFO mode. The VFO mode allows you to change the frequency and other settings.

● Switching the Band

Press the BAND/NAME key to switch the band. Each press of the key changes the band as shown below.

Example: 145.00→433.00→145.00→···(DJ596E)

● 1MHz UP / DOWN

Select the VFO mode by pressing the A/N,M/N key.

Press the FUNC SET key and rotate the dial while F appears. Frequency increases and decreases by 1MHz steps.

● Entry From the Keyboard

Select the VFO mode by pressing the A/N,M/N key.

Entry e.g.:145.000MHz 1→4→5→0→0→0

(Tuning step : 5KHz)

Note If you want to cancel the keypad input, press a key other than number keys at any time while entering the number. The previous frequency will appear on the display again. The last digit entered must be in accordance with the currently selected tuning step.

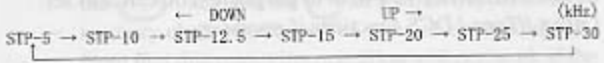
● Entry Completion Digit for Different Tuning Steps

Depending on the tuning step, entry may be required to the 1 kHz digit or the 10 kHz digit.

Tuning step	Entry completion digit	Last digit selection
12.5kHz	10kHz	When you input the 10kHz digit, the 1kHz digit is defined as follows: [0]:00.0, [1]:12.5, [2]:25.0, [3]:37.5, [4]:invalid [5]:50.0, [6]:62.5, [7]:75.0, [8]:87.5, [9]:invalid
25.0kHz	10kHz	When you input the 10kHz digit, the 1kHz digit is defined as follows: (Other entries are invalid) [0]:00.0,[2]:25.0, [5]:50.0,[7]:75.0
5kHz	1kHz	Enter [5] for the 1kHz digit to enter 5kHz. Any other entry sets the 1kHz digit to 0.
Other	10kHz	When you input the 10kHz digit, the 1kHz digit is defined.

■ Setting the Tuning Step

- Press the FUNC SET key in the VFO mode, and press the 1 STEP key while F appears. The present tuning step is displayed. The tuning step changes as follows if you rotate the dial.



- Press a key other than the MONI key to complete the setting.
- The tuning step default setting is 5KHz (DJ-596T), 12.5KHz (DJ-596E)
- The tuning step cannot be set in the Memory mode

Note The frequency and shift frequency may change if the tuning step is changed from (5kHz,10kHz,15kHz,20kHz,30kHz) to (12.5kHz,25kHz), or vice versa.

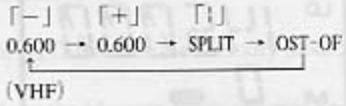
■ Offset / Split Functions

- Offset Function
  This function shifts the transmission frequency in relation to the receiving frequency.
  The default settings are: VHF: 0.6MHz, UHF: 5.0MHz

- Split Function
  This function changes the transmission frequency in relation to the receiving frequency.
  The transceiver receives the currently displayed VFO frequency, and transmits the other VFO frequency. Using this feature, it is possible to transmit on a VHF frequency and receive on a UHF frequency, or vice versa.

● Setting the Offset / Split Functions

Press the FUNC SET key and the 2 SHIFT key while F appears. Each press of the key changes the display as shown below.



- The displayed offset frequency can be adjusted by 1 tuning step by rotating the dial. If you want to change the frequency by 1 MHz steps, press the FUNC SET key and rotate the dial while F appears.
  The setting is completed when a key other than the MONI and FUNC SET keys is pressed.

- To set the split function, select "SPLIT" and press a key other than the MONI / FUNC SET keys.
  The transceiver receives the displayed VFO frequency and transmits the other VFO frequency.

4.6 Memory Mode

In the Memory mode, you can call up and operate on a previously programmed frequency.
The DJ-596 has 100 memory channels (any VHF/UHF mixture).
It is not possible to increase the number of memory channels.
All memory channels are blank in the initial factory configuration or after resetting.

■Selecting a Memory Channel

1. Press the A/M MW key to activate the Memory mode.
   The mode switches between Memory mode and VFO mode by pressing the A/M MW key.

2. M and a memory channel number appear when the Memory mode is activated.
   M blinks when the displayed channel is blank.

3. Rotate the dial to select a memory channel.
   Rotate the dial clockwise to choose a higher-numbered memory channel, and counterclockwise to select a lower-numbered memory channel.

■Programming a Memory Channel

1. Press the A/M MW key to activate the Memory mode. Select a memory channel by rotating the dial.
   A blinking M indicates that the memory channel is blank.

2. Select a frequency you wish to program. You can also set Offset / Tone / DCS functions if necessary.

3. Press the FUNC SET key and the A/M MW key while F appears. A beep is heard and memory channel programming is completed.

Reference
- If you want to rewrite a programmed memory channel, clear the programmed information before rewriting it. A memory channel is cleared by the above procedure 3, and M blinks when the memory is cleared and can be rewritten.
- Call channel can also be rewritten by selecting the memory channel C

■Clearing a Memory Channel

1. Press the A/M MW key to activate the Memory mode.

2. Select a memory channel you wish to clear by rotating the dial.
   On a programmed channel, M is displayed steadily (without blinking).

3. Press the FUNC SET key and the A/M M/W key while appears. A beep is heard and the programmed frequency is cleared. M starts blinking.

Reference If you want to retrieve the cleared information, press the FUNC SET key and the A/M M/W key while the previous memory channel information remains on the display. Note that this retrieving operation will not work if the memory channel or operating mode was changed after the memory was cleared.

■ Contents of Memory Programming

The following contents can be stored in each memory channel and in the CALL channels.

- Frequency
- Offset Frequency
- Shift Direction (+/−)
- Tone Encoder Frequency
- Tone Encoder / Decoder Setting
- Tone Decoder Frequency
- DCS Code
- DCS Setting
- Transmit Power H/L
- Skip Channel Setting
- Channel Name Setting
- W/N Setting
- Battery Save Setting
- Busy Channel Lock Out (BCLO)

4.7 Call Mode

The Call mode is used when you wish to receive or transmit on the Call channel.
The DJ-596 has 2 CALL channels (VHF and UHF).
The default settings are :
VHF : 145.00MHz, UHF : 445.00MHz (DJ-596T)
VHF : 145.00MHz, UHF : 433.00MHz (DJ-596E)

1. Press the C CALL SKIP key to activate the Call mode.

2. CALL channel switches between VHF and UHF by pressing the D BAND NAME key in the Call mode.

3. To return to the VFO mode or the Memory mode, press the C CALL SKIP key again.
The VFO mode or the Memory mode can also be reactivated by pressing the A/M M/W key.

Note
- In the Call mode, frequency and memory No. cannot be changed by rotating the Dial.
- Offset, Tone, DCS settings can be temporarily changed.
- Scanning cannot be performed in the Call mode.

■ Programming a Call Channel Frequency

A Call channel is one of the memory channels. To program the frequency and other settings of the call channel, select the memory channel in the VFO mode.

Note The Call channels can be programmed but cannot be cleared.

4.8 Receiving

1. Turn the power ON by pressing the POWER key.
2. Press the VOL SEL L key and rotate the dial to adjust the audio volume.
3. Press the SQL DIGI key and rotate the dial to eliminate the noise.
4. Adjust to the desired frequency.
   When a signal is received on the selected frequency, BUSY appears on the display, the RF meter indicates relative signal strenght, and the received signal is heard. The RX/TX Lamp displays green during reception.

■ Monitoring

The Monitor function unmutes the squelch temporarily to hear weak or unsteady signals.

- While the MONI key is pressed, the squelch is unmuted and sound is heard from the speaker regardless of the squelch setting.
- Monitoring can be performed even if the tone squelch or DCS are active.

■ Switching between NFM and WFM

1. The NFM/WFM mode is changed by pressing the FUNC SET key and the NFM/WFM key while F appears.
   A appears when NFM is selected, and disappears when WFM is selected.
   NFM : A
   WFM : No indication
2. Press a key other than the MONI key or the FUNC SET key to complete the setting. (Default setting: WFM)

Note When NFM is selected, the transmitted modulation also becomes half of the WFM value.

4.9 Transmitting

1. Select a frequency on which you want to transmit.
2. Press the PTT key to transmit. The RX/TX Lamp shows red when transmitting.
3. Speak into the microphone as you do in normal conversation. Do not shout.
4. Release the PTT key to stop transmitting and return to the receiving mode.

Note · A tone call (burst) signal can be transmitted by pressing and holding the PTT key and pressing the MONI key. (Page 22)
- If the PTT key is pressed when the frequency is outside of the transmiting range, "OFF" appears on the display.
- You cannot transmit when outside the range specified for your transceiver.

■Selecting the Transmission Output Level

The transmission output level can be changed by the following operation:

- Press the FUNC SET key and then 5 PO key while F appears. Transmission power is switched between HI and LOW. LO appears on the display when the transmitter output level is set to LOW, and nothing is indicated when HI is selected. Initial setting is LOW.
- The RF meter indicates LOW transmission power as ●●●, and HI transmission power as ●●●●●.

Note Transmitter output level cannot be changed during transmission.