Operating Manual for the DJ-600T

1 INTRODUCTION

We at Alinco would like to thank you for purchasing the ALINCO DJ-600T (US Model)/DJ-600E (European Model). Radios and other products made by ALINCO rank as some finest in the world. Your DJ-600T/E has been manufactured and tested very carefully at the factory and will give you satisfactory operation for many years. We are confident that you will be very satisfied with your choice of this fine ALINCO radio.

1.1 STANDARD ACCESSORIES

When you unpack your ALINCO transceiver, you will find the standard accessories which include:

1. Hand Microphone (Condenser Type), with 16 button DTMF Touch Tone pad. (DR-600T model only)
2. Mobile Mounting Bracket
3. Installation Hardware
4. DC Power Cord

1.2 OPTIONAL ACCESSORIES

To enhance your DJ-600 radio further, optional accessories are available. At ALINCO, we strongly recommend that you purchase appropriate accessories to get full features and performance from your radio.

1. EJ-7U Tone Squelch Unit (This unit is required to operate the tone squelch feature (CTCSS de-coding)
2. EJ-8U DTMF Unit (This unit is necessary for the DSQ function, Auto Dialer and external remote controller
3. EDC-19 Seperate Mounting Kit with cable. (3m) 9ft 10in.
4. EDC-20 Seperate Mounting Kit with cable. (5m) 16ft 5in.

2 SPECIFICATIONS

The specifications outlined for this product are for use in the amateur bands only. No guarantee or warranty, either specific or implied, will apply to any function or specification outside the amateur bands. Individual radios may experience different performance and/or specification levels. All specifications are approximations and may vary (+/-) 10% or more. All specifications and features are subject to change without notice or obligation.

2.1 GENERAL SPECIFICATIONS

Frequency Resolution:5, 10, 12.5, 15, 20, 25 Khz steps
Antenna Impedance: 50 Ohms unbalanced
Power Supply Requirements: 13.8 Volts DC
Current Drain @ 13.8VDC RX: Squelched doesn't exceed 800ma.
Dimensions:
Length = 178mm (7")
Width = 150mm (5 9/10")
Height = 50mm (2")
Weight: Approximately 1.5kgs (3.3lbs)

Memory Channels: 28 Channels (14 VHF, 14 UHF)
1 VHF Call Channel
1 UHF Call Channel
Current Drain at 13.8VDC: Receiving

2.2 U.S. FREQUENCY COVERAGE

The frequency coverage listed as follows applies to the DJ-600T.

VHF Band: 144.000 - 147.995 Mhz (TX)
135.000 - 173.995 Mhz (RX)
UHF Band: 440.000 - 449.995 Mhz (TX)
420.000 - 469.995 Mhz (RX)

2.3 EUROPEAN FREQUENCY COVERAGE

The frequency coverage listed as follows applies to the DJ-600E.

VHF Band: 144.000 - 145.9875 Mhz (TX&RX)
UHF Band: 430.000 - 439.9875 Mhz (TX&RX)

2.4 TRANSMITTER SPECIFICATIONS

Emission Mode: F3E (FM)
Modulation System: Variable reactance FM
Max. Freq. Deviation: +/- 5KHz
Spurious Emission: -60dB (or under)
Microphone: Electret Condenser
Operating Mode:
Simplex:
Duplex: 5KHz steps minimum between 0-10.995 MHz
from receiver frequency.
CTCSS Encoder: Built-in and included as standard

Transmit Power Output: HIGH 45W @ 9.5A Approximate
MID 10W @ 4.5A Approximate
LOW 5W @ 3.5A Approximate

HIGH 35W @ 10.0A Approximate
MID 8W @ 5.0A Approximate
LOW 4W @ 4.0A Approximate

2.5 RECEIVER SPECIFICATIONS

Current Drain squelched Doesn't exceed 800 mA
Modulation Acceptance F3E (FM)
Receiver System:Superheterodyne, Dual Conversion
Sensitivity: 12dB SINAD less than - 16dB per microvolt
Selectivity: +6 KHz or under at -6dB
+12 KHz or under at -60dB
Intermediate Frequency: VHF - 1st IF 30.825 MHz
2nd IF 455 KHz
UHF - 1st IF 30.825 MHz
2nd IF 455 KHz
Audio Power Output: Approximately 2.5 Watts

Speaker Impedance: 8 Ohms

3 OPTIONS

The following subsections explain how to install the EJ-7U Tone encode and EJ-8U Tone decode option boards.

3.1 TONE SQUELCH UNIT (EJ-7U INSTALLATION)

This unit is an option, and is necessary to operate the Tone Squelch Unit. The EJ-7U incorporates separate VHF and UHF circuitry. This design makes possible for independent operation for VHF and UHF.

1. Remove power source from the radio.

2. Place the unit upside down and front panel faced towards you on a protective surface. The protective surface is used to protect the radio from being scratched.

3. Remove (2) screws near rear bottom cover.

4. Remove (6) screws 3-Right and 3-Left.

5. Remove bottom cover.

6. Locate two connectors nearest you on the left, near front panel.

7. Lift up gently (to open) on the U-shaped (outer ring) sleeve found on the lower connector.

8. Install Tone Squelch Unit into the lower connector with IC's facing towards you.

9. Press the sleeve around the connector to secure the ribbon cable.

10. Install double stick sponge tape onto the back of the EJ- 7U, then secure to main unit.

11. Re-install cover and screws beginning with steps 5 through 3.

12. Reset the microprocessor. (Push the FUNC button at the same time you power up the DR-600T/E.

3.2 DTMF UNIT (EJ-8U INSTALLATION)

This unit is an option, and is needed for the DSQ function, auto dialer and external remote controller. The Remote Control Microphone (EMS-3) is required for these features. The EMS-3 comes standard with the DR-600T.

1. Remove power source from the radio.

2. Place the unit upside down and front panel faced towards you on a protective surface. The protective surface is used to protect the radio from being scratched.

3. Remove (2) screws near rear bottom cover.

4. Remove (6) screws 3-Right and 3-Left.

5. Remove bottom cover.

6. Locate two connectors nearest you on the left, near front panel.

7. Lift up gently (to open) on the U-shaped (outer ring) sleeve found on the lower connector.

8. Install the DTMF Unit into the upper connector with IC's facing AWAY from you.

9. Press the sleeve around the connector to secure the ribbon cable.

10. Install double stick sponge tape onto the component side of EJ-8U, then secure to main unit.

11. Re-install cover and screws beginning with steps 5 through 3.

12. Reset the microprocessor. (Push the FUNC button at the same time you power up the DR-600T/E.

4 FRONT PANEL CONTROLS AND FUNCTIONS

This section will discuss what the function or control is and how to use it. The subsections are broken down into smaller sections for easy access.

4.1 MAIN TUNING DIAL

The main tuning dial/knob may be rotated in either direction to select transmit and receive frequencies, frequency steps, sub-audible tones and transmit frequency offsets.

4.2 LCD PANEL

Highly visible under all lighting conditions the LCD panel displays functional information during transceiver operations.

4.3 MHZ DOWN KEY

Frequency of selected band is decreased one MHZ with each touch of this key. When the key is pressed and held, the frequency decreases rapidly in one MHZ increments. This key is also used to change memory channels and offset frequencies downward in one MHZ steps.

4.4 MHZ UP KEY

Frequency of selected band is increased one MHZ with each touch of this key. When the key is pressed and held, the frequency increases rapidly in one MHZ increments. This key is also used to change memory channels and offset frequencies upward in one MHZ steps.

4.5 H / M / L (DIM) KEY

Pressing the H / M / L key selects the desired output power of the transmitter. Power level is displayed as MID or LOW on the LCD panel. If neither indicator is shown on the display, the power level is HIGH. Power limits are as follows:

LOW VHF: 5 Watts
LOW UHF: 4 Watts
MID VHF: 10 Watts

MID UHF: 8 Watts
HIGH VHF: 45 Watts
HIGH UHF: 35 Watts

Access the DIM function by pressing the FUNC key followed by the DIM key. There are two levels of intensity, bright and dim.

4.6 POWER SWITCH

This applies power to the radio. When the switch is pressed in, it is powered ON. If the switch is out, then the radio is OFF.

NOTE

The LCD may flash once if the power switch is off and power is applied from an outside source. This is a normal function, as the unit is running a system check. When the unit recognizes that the power switch is in the OFF position, it will turn off automatically.

4.7 UHF BAND SWITCH

Press this key to select the UHF Band as the main (transmitting) band. The U symbol will appear on the UHF Band side of the LCD display.

4.8 VHF BAND SWITCH

Press this key to select the VHF Band as the main (transmitting) band. The V symbol will appear on the VHF Band side of the LCD display.

NOTE

When the cross band Repeater modification is performed, the LCD can display airband. This is a visual indication only! The radio will not receive airband.

4.9 MICROPHONE CONNECTOR

Connect the supplied microphone and screw outer ring of microphone plug to secure plug to connector on the front panel.

4.10 VHF SQUELCH

Start by turning the knob fully counter clockwise, then rotate the knob back clockwise until background noise is silent.

4.11 VHF VOLUME CONTROL

Adjusts the VHF audio level. Rotate control clockwise to increase volume , and counter clockwise to decrease.

4.12 UHF SQUELCH

Start by turning the knob fully counter clockwise, then rotate the knob back clockwise until background noise is silent.

4.13 UHF VOLUME CONTROL

Adjusts the UHF audio level. Rotate control clockwise to increase volume , and counter clockwise to decrease.

4.14 FUNC KEY

Controls access to secondary functions. These secondary functions are those functions printed in green on the control keys. It is necessary to activate FUNC to access secondary functions.

4.15 VFO (CH.SP) KEY

VFO stands for variable frequency oscillator. Pressing this key will return you from other operation modes.

The CH.SP function is used to select desired incremental changes of receive / transmit frequencies, in steps of 5, 10, 12.5, 15, 20 or 25khz. After channel step is set, the receive / transmit frequency will increase or decrease by the value selected when you turn the main tuning dial.

1. Select the Main Band by pressing the VHF or UHF key.

2. Press "FUNC" key.

3. Press CH.SP key. The current channel spacing will appear in place of the main band frequency.

4. Desired channel spacing increment may be selected by rotating the main tuning dial in either direction. Another way would be to use the UP / DOWN switches on the microphone.

5. After a selection is complete, Press any front panel key except power switch.

After channel spacing is set, the receive / transmit frequency will increase or decrease by the value selected when you turn the Main Tuning dial.

When the transmit frequency extends beyond permissible limits, Off will be displayed on the LCD display. The transmitter will not transmit when Off is displayed.

4.16 REV (BELL) KEY

The REV KEY is used during duplex operations. Press the key to reverse the transmitting frequency and the receiving frequency. This feature is used for listening to the input frequency of a repeater.If you hear your contact on the input, it is possible to transmit in simplex mode. To activate the REV function:

1. Press the REV key. The repeater input frequency and opposite SHIFT indicator will appear on the LCD display panel.

2. Press and hold the FUNC key, then press the REV key again to cancel the REV function.

If the frequency, as a result of the REV key being activated, is out of band, "OFF" will appear in the display.

The BELL activates a tone whenever the squelch is opened. This tone is used to alert the operator that activity is currently taking place on the main band. You will hear the BELL even if the audio volume is turned all the way down.

4.17 MR (MW) KEY

MR stands for Memory Recall. This is used to display memory channels.

MW stands for Memory Write. This function is used to write / store frequencies and features into a memory channel.

4.18 PRI (S.TYP) KEY

The PRI key selects the priority mode, allowing one important channel to be scanned periodically during various scan modes.

S.TYP means scan type. This function is utilized to select the
desired scan type.

Busy Scan - Stops at busy channel and restarts 2 seconds after carrier drops.
Open Scan (SP) - Stop at an open frequency and hold for several seconds.
Time Scan (TM) - Stops at a busy frequency and hold for several seconds.
Time Open Scan
(TM SP) - Stops at open frequency, holds for several seconds and continues whether the frequency is busy or not. Program Scan - Start and stop at selected lower and upper frequencies.

4.19 CANCEL (LOCK) KEY

Voids a mistaken entry and returns the unit to the previously set frequency and function.

The LOCK disables function and control key.

4.20 SHIFT (ADD) KEY

The SHIFT KEY is used to change frequency offset and shift. The symbols - , + and star symbol are used to indicate shifts.

1. Press the SHIFT key repeatedly until the desired shift appears on the LCD display.

The - symbol indicates that the transmitter will subtract the offset with the transmitted frequency.

The + symbol indicates that the transmitter will add the offset with the transmitted frequency.

Simplex operation is active when neither the - or + symbol is displayed on the LCD display.

2. Select the Main Band by pressing the VHF or UHF key. The LCD display returns to frequency.

Amateur radio repeaters utilize separate transmitter and receiver sections. The transmitter frequency may be offset either above or below the receive frequency according to repeater coordination conventions. The standard offset for the 2 meter band is 600 Khz. Offset for the 70cm band is 5 Mhz. Offset direction varies according to established band plans.

EXAMPLE: SHIFT

1. Select the Main Band by pressing the VHF or UHF key.

2. Rotate the Main Tuning dial or press either arrow key to select the desired offset.

3. Press the SHIFT key. An offset will be displayed on the LCD display.

4. Press the PTT key to complete offset procedure.

DJ-600TDJ-600E

VHF: 600 Khz (0.60) VHF: 600 Khz (0.60)
UHF: 5 Mhz (5.00) UHF: 7.6 Mhz (7.60)

The SHIFT selects + or - repeater input frequency, or simplex transmission.

The ADD key is used in conjunction with various scan modes.

4.21 SCAN (SKIP) KEY

The SCAN key is used to start and stop the scan mode. The SKIP key is used to skip select memory channels during a memory scan.

4.22 ARM (ARMW) KEY

ARM stands for Additional Repeater Memory. ARM is an additional bank of memory channels that are specifically designed for storing repeater frequencies, shifts and offsets. You may view what is stored in ARM by pressing the ARM key.

ARMW is used to write repeater information into the ARM memory bank.

4.23 MUTE (ABX) KEY

The MUTE key is used to mute the audio on either VHF or UHF band.

When ABX is utilized, it switches the transmitting band between VHF and UHF, as a signal is received on either band.

4.24 CALL (CALLW) KEY

The CALL key is used to access a pre-programmed frequency with the push of one key.

The CALLW key is used to write your call frequency to the CALL channel.

4.25 TONE (BEEP) KEY

The TONE key is used to activate (encode or decode) and select one of 38 sub-audible tones that are factory programmed in to the radio. The beep key enables or disables the beep. The beep indicates if a key has been pressed, or an automatic function has occurred.

5 LCD DISPLAY DESCRIPTIONS

5.1 MAIN BAND

Indicates main (transmitting band.

5.2 PRI

Priority function On.

5.3 ENC

PL Encoder [CTCSS] tone activated. The PL tone will be transmitted with the main carrier.

5.4 DEC

PL Decoder [CTCSS] tone enabled. Incoming PL tone will be received and decode functions will be activated.

?v TM

Time Scan Function On. Scan stops on first busy frequency and resumes after 5 seconds, even if signal is still present.

5.6 SP

Open Channel Scan On. Scan stops at first open frequency and will remain there until signal is received.

5.7 MUTE

Audio is Off on selected band.

5.8 REV

Reverse function selected.

5.9 A

Automatic Repeater Memory function activated.

5.10 M

Memory mode selected.

5.11 ADD

Additional Programmed Scan active

5.12 FUNC

Function is On. Secondary Green function keys may be activated.

5.13 ABX

Automatic Band Exchange function enabled.

5.14 DSQ

DTMF Squelch function (DTMF decode) On.

5.15 + -

Indicates up or down transmitter offset.

5.16 FREQUENCY

Displays selected transmit / receive frequencies, channel step, and sub-audible encoded tone frequencies.

5.17 BUSY

Squelch open, signal being received.

5.18 S / RF METER

Indicates relative received signal strength or transmitter RF output level.

5.19 DECIMAL POINT

The decimal point indicates MHz for transmit / receive and offset

frequencies. In addition, kHz for channel step and Hz for encoded PL [CTCSS] tone frequency.

NOTE

In memory mode, the decimal point will flash on and off. If SKIP channels are programmed, the decimal point will disappear.

5.20 MEMORY CHANNEL

Indicates selected memory channels.

5.21 ON AIR

Indicates transmitting.

5.22 MID

Middle transmitter output power level selected: 10W / VHF and 8W / UHF.

5.23 LOW

Low transmitter output power selected: 5W / VHF and 4W / UHF.

6 REAR PANEL DESCRIPTIONS

1. VHF 8 Ohm speaker jack: This jack allows you to hear VHF activity only. The UHF activity will be heard out of the speaker in the DR-600.

2. UHF 8 Ohm speaker jack: This jack allows you to hear UHF and VHF activity.

3. VHF 50 Ohm antenna connector, marked VHF on connector barrel.

4. UHF 50 Ohm antenna connector, marked UHF on connector barrel.

5. 13.8 Volt DC power input connector. Connect supplied DC power cable to this connector.

CAUTION

Be sure voltage polarity is correct before connecting power cable. Supplied power cable is polarity coded. RED is positive, BLACK is negative.

7 MICROPHONE DESCRIPTIONS

1. UP / DOWN Switches
2. UP / DOWN Switches

   Used to step VFO and sub-audible tone frequencies or memory channel up or down. Frequencies will change continuously when switch is pressed and held.

3. PTT Switch

Unit transmits when Push To Talk switch is pressed.

4. MIC

Speak into microphone from approximately 2" distance.

5. 16 TONE DTMF PAD (DR-600T Standard / DR-600E Optional)

Each numerical or letter key activates one DTMF tone. Press in desired order. Microphone emits a low level verification tone to indicate successful key activation. Transmit DTMF tones by switching the "Remote / DTMF" key to the DTMF position, press and hold the PTT and enter the DTMF tones desired from the Touch Tone Pad on the Mic.

DTMF (Dual Tone Multi Frequency Chart				
High Tone (Hz)	1209	1336	1477	1633
Low Tone (Hz)				
697	1	2	3	A
770	4	5	6	B
852	7	8	9	C
941	*	0	#	D

6. LOCK

Disables all microphone functions except PTT

7. REMOTE / DTMF (DR-600T Standard / DR-600E Optional)

Permits mic touch tone pad input of 16 functions to main unit.

DTFM selects DTMF key pad.

8 GETTING STARTED (Receiving)

1. Connect a 13.8 Volt DC Power Supply to the Radio.

2. Connect the antenna(s) to the rear of the radio to the appropriate antenna connector. Please refer to the MOBILE ANTENNA INSTALLATION for more information.

3. Adjust the following switches and controls on the front panel of the radio.

o POWER: OFF
o DC POWER SUPPLY: OFF
o VOLUME CONTROLS: Fully Counter Clockwise
o SQUELCH CONTROLS: Fully Counter Clockwise

4. Locate the POWER switch on the front panel and press it in. The display should be illuminated and indicate frequencies and V for VHF. The initial factory delivered settings:

VHF

VFO Frequency: 145.000Mhz DTMF Squelch: None
Memory Channel: 1 Memory Frequency: 145.000 Mhz
Channel Step: 5 khzScan Type:Busy Scan
Channel Step (600E)12.5 khz ARM Base:
Shift: 0 ARM:
Offset Frequency: 0.6 Mhz DSQ Code: 111
Tone Encoder: None Autodialer: None
Tone Frequency: 88.5 Hz

UHF

VFO Freq. 600T: 445.000Mhz DTMF Squelch: None
VFO Freq. 600E: 435.000Mhz Memory Frequency: 445.000 Mhz
Memory Channel: 15 Memory Freq.(600E):435.000 Mhz
Channel Step: 5 khz Scan Type: Busy Scan
Channel Step(600E): 12.5 khz ARM Base:
Shift: 0 ARM:
Offset Frequency: 5 MhzDSQ Code: 111
Tone Encoder: None Freq.(600E): 7.6 Mhz
Tone Frequency: 88.5 Hz Autodialer:None

5. Adjust the volume controls on each band until a signal (or noise) is heard.

6. Rotate the Main turning dial, and select an open frequency on each band. Rotate the squelch controls clockwise on each band until the noise disappears and the busy indicator doesn't illuminate. Another way to change the frequency is to use the UP/DOWN switches on the microphone.

7. Select the desired band by pressing the VHF BAND UHF switch on the front panel. A V will be displayed when VHF is enabled and U will be displayed when UHF is enabled.

NOTE

Be sure to power off the radio before turning off the power supply.

8.1 CONFIRMATION TONES

Musical tones will sound whenever control keys are pressed if the

BEEP function is active. Tones will not sound when the main tuning dial, volume and squelch controls, main power switch or microphone UP/DOWN switches are activated.

To defeat confirmation tones;

1. Press the FUNC key.

2. Press the BEEP key.

3. To restore tones, repeat steps 1-2.

8.2 TRANSMITTING

1. Make sure that you follow all steps set forth in the "GETTING READY" section first.

2. Select a frequency, shift direction, shift value, and PL tone frequency.

3. Check to see if the frequency is in use before transmitting.

4. Select appropriate transmitter output power level by cycling H/M/L key on the front panel until minimum power for the intended transmission is indicated on the LCD panel.

5. Press PTT switch and speak into microphone. The ON AIR indicator will illuminate while transmitting.

6. Release PTT switch, ON AIR light goes out and unit returns to receive.

9 TRANSCEIVER MODES

The DR-600T/E has 4 modes; VFO mode, MEMORY mode, CALL mode and ARM mode. The DR-600E does not utilize CALL mode.

9.1 VFO MODE (Variable Frequency Oscillator)

Press the VFO key. The transceiver will be in VFO mode. This mode is used to change frequency and select desired channel step, offset frequency (up to 10.995 MHz by 5 kHz), tone frequency (38 frequencies in Hz), etc.

9.2 MEMORY MODE

The following guidelines will help you to program and manipulate memory channels. To select the memory mode, press the "MR" key. The most recently used memory channel will display :

o Frequency
o Memory channel number
o Other programmed functions

You can scan the memory channels with the "Scan" key, elect to skip

any memory channel with the (Skip) key, or select the scan type with the (S.TYP) key (the programming these functions is detailed further in this manual).

The DR-600T/E has two (02) banks of memory channels:

1ST the main bank of 28 memory channels that are accessed with the MR(MW) key.

2ND the ARM memory channels. ARM gives you 10 additional memory channels.

9.3 SCROLL MEMORY

Scrolling the main bank of memory channels up or down can be done one of two ways, the front panel or microphone.

Example from the Front Panel

1. Press the MR key.
2. Use MHZ up or MHZ down key on front panel.

Example from the Microphone

1. Press the VFO key.
2. Enter C02 on the microphone keypad. Now your in memory mode.
3. To increase memory channel number, enter C08, to decrease enter C09.

9.4 MEMORY WRITE

To write functions to any memory channel, perform the following.

Example 1:

1. Select VFO mode.
2. Select the VHF or UHF band.
3. Select the receive frequency.
4. Select the repeater shift - or +, and the required offset. If required - consult your Repeater Directory.
5. Select the proper PL [CTCSS] sub-audible tone. If necessary consult your Repeater Directory. After selecting and setting the required functions you can write (store) those functions

to a memory channel in a couple of ways.

6. Press the "FUNC" key. The "FUNC" indicator and memory channel number will be displayed on the LCD.

7. Turn the Main Tuning Dial clockwise to choose the desired memory channel number (clockwise to increase, counter clockwise to decrease). Select the desired memory channel number (1 to 28). The following, (1L, 1U, 2L, 2U, and A) are special use channels explained later in this manual.

8. When you have selected the memory channel you want, push the (MW) key to write (store) to memory. The LCD will return to VFO, and selected functions will be stored in the last displayed memory channel.

You may store VHF or UHF frequencies and functions in any one of the 28 memory channels. Be advised that there are only 28 main memory channels, storing a VHF or UHF frequency in any channel will utilize that channel for that setting ONLY. You will have to overwrite on that used channel to utilize it for another band. For example: the factory setting shows memory channels 1 - 14 on the VHF band side, and 15 - 28 on the UHF band side. You can store a VHF frequency and functions in channel 18. That channel will then be displayed on the VHF band side, and no longer on the UHF band side. Scrolling through the UHF band side will display 15, 16, 17, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28 only. Channel 18 will not display on the UHF band side.

NOTE

Several of the memory channels have been reserved for "Special Functions": (1) Channels 1L, 1U, 2L,& 2U are reserved for Program Scanning, and (2) Channel A is reserved for programming the ARM memory channels.

Example 2:

1. Select the desired VHF or UHF band, as described above.

2. Press MR for memory recall and use the MHz key to select the desired memory channel. You will only be able to select those memory channels displayed on the band (VHF or UHF) you initially selected.

3. Press the VFO key.

4. Select a frequency, shift direction, shift value, and PL tone frequency.

5. Press "Func" key first, and then the (MW) key. The frequency and functions chosen will be stored into the previously selected memory channel.

Press the CALL key. The transceiver will be in CALL mode. The CALL Mode allows a single key to access an immediately desired programmed frequency.

10.1 CALL WRITE

You can set a desired frequency (and other functions) into your CALL Memory Channel by performing the following steps.

1. Select VFO mode.
2. Select the frequency you want to store as your CALL frequency, repeater input shift, PL tone, etc.
3. Push the "FUNC" key
4. Push the (CALLW) key to store frequency in to the CALL Memory channel.

11 ARM MODE (AUTOMATIC REPEATER MEMORY)

There are ten ARM memory channels. These channels are used by ARM exclusively and are separate from the main memory channels. Frequency storage for ARM can be achieved automatically or by manual entry. The main purpose of ARM is to store repeater frequencies automatically.

11.1 AUTOMATIC ENTRY (ARM)

To write repeater frequencies and functions to any ARM memory channel, it is necessary to first setup storage for ARM via VFO mode.

1. Select VHF or UHF VFO mode.
2. Select the receive frequency, shift and if required, PL (CTCSS sub-audible tone).
3. Press the "FUNC" key, and the memory channel number will be displayed on the display.
4. Turn the Main tuning dial clockwise or counter clockwise until the "A" memory channel is displayed.
5. Push the MW key.
6. Press the microphone PTT switch. If the DR-600T transceiver receives an acknowledgement from the repeater, the frequency and other functions will be memorized in channel A1.

11.2 AUTOMATIC REPEATER SHIFT (ARM)

Here's an example of how to have your Alinco 600 automatically shift when you enter in a frequency.

1. Enter into the VHF VFO a known frequency above 147.000 and include the positive offset!

2. Press the FUNC button.

3. Press the up / down buttons on the mic, or turn main tuning dial until memory channel A is selected in the display.

4. Press the MW key.

5. Press PTT on the microphone and identify your station as testing. After you have heard the squelch tail on the repeater, the frequency you just entered will have been stored into ARM memory.

6. Enter a frequency below 147.000 and include the negative offset.

7. Press PTT once! This clears the display but doesn't transmit. The shift limits have now been understood by the DR-600. Select any frequency further and the shift will automatically be inserted with the frequency.

NOTE

The 10 memory channels in ARM cannot be selected individually for programming. Each frequency stored will push the last previously stored frequency into the next ARM memory and so on and so forth. After all ten memories are used, the oldest frequency in ARM will be discarded. The ARM is limited to recording within the initial Mhz frequency.

11.3 MANUAL ENTRY (ARM)

If the repeater is not equipped to answer your DR-600T / E, it will be necessary to manually write your entry into the first available open ARM memory channel.

1. Select VHF or UHF VFO mode.

2. Select the receive frequency, shift, and if required PL (CTCSS) sub-audible tone.

3. Press the "FUNC" key, and the memory channel number will be displayed on the display.

4. Turn the Main tuning dial clockwise or counter clockwise until the "A" memory channel is displayed.

5. Push the MW key.

6. Push "FUNC" key.

7. Push "ARMW" key.

8. If you wish to select another frequency, make sure it is in the same Mhz range. Selection of a frequency out of the Mhz range will not be stored.

NOTE

The 10 memory channels in ARM cannot be selected individually for programming. Each frequency stored will push the last previously stored frequency into the next ARM memory and so on and so forth. After all ten memories are used, the oldest frequency in ARM will be discarded. The ARM is limited to recording within the initial Mhz frequency.

Example:

Initial frequency in "A1" is set to 147.015 Mhz, then the upper frequency possible to program for the ARM bank is 147.995.

11.4 SCROLL ARM MEMORY

To access the ARM bank of memory channels push the ARM key. The LCD will display "A" and the memory channel number, indicating that you are in the ARM bank of memory channels. You can engage the same features in the ARM memory bank as you can in the main bank of

memory channels. You can scan, skip, set the type of scanning in these memories by engaging those functions, described later in this manual.

You can scroll the ARM by:

1. Turning the Main Tuning Dial; clockwise to increase, or counter clockwise to decrease.

2. Pushing the Up / Down keys on the microphone.

3. The MHz Up / Down key on the front panel.

12 PRIORITY FUNCTION

This function allows a one second scan of the user-selected priority frequency and a five second scan of the other frequencies in the VFO Priority, Memory Priority, and Call Priority modes.

12.1 VFO PRIORITY

Desired priority frequency stored in any of the main Memory Channels will be scanned for one second, and the last selected VFO frequency will be scanned for 5 seconds.

1. Store desired frequency in any memory channel.

2. Select VFO mode and a VFO frequency.

3. Press the "PRI" key. The PRI indicator will appear on the LCD and VFO Priority scan will begin.

The last selected memory channel will be scanned for one second, the VFO frequency will be scanned for five seconds. If the microphone PTT is pressed while on the VFO frequency, the priority channel will NOT engage until the PTT is released.

If the microphone PTT is pressed while on the priority channel (memory channel 1), the Priority function will be canceled, and the transceiver will remain on memory channel one. The DR-600T/E will return to the VFO frequency.

12.2 MEMORY PRIORITY

This is the reverse of the VFO Priority mode. The VFO frequency will be scanned for one second and the memory channel will be scanned for five seconds.

1. Select VFO and a VFO frequency.
2. Press MR to select memory mode
3. Select a memory channel containing the desired memory frequency to be scanned.

Any memory channel in the main transmitting band can be selected for Memory Priority Scan. You are not restricted to memory channel 1, as in VFO Priority Scan.

4. In the memory mode, press the "PRI" key. PRI indicator will appear on the LCD and Memory Priority Scan will begin. The VFO frequency will be scanned for one second and the selected memory channel will be scanned for five seconds. If the microphone PTT is pressed while on the memory channel, the Priority function will stop until the PTT is released.

12.3 CALL PRIORITY

The VFO frequency is scanned for one second and the programmed CALL frequency is scanned for five seconds.

1. Push the "CALL" key to access your programmed CALL frequency.
2. Push the "PRI" key, the PRI indicator will display on the LCD, and the CALL channel will be scanned for five seconds, and the current VFO frequency will be scanned for one second.

13 SCAN

The DR-600T/E offers various scanning options and 4 scanning types. These scanning options are:

Band Scan (VFO mode) - scans entire band.

Program Band Scan (VFO mode) - scans programmed lower to upper frequencies.

Memory Scan - scans memory channels in selected band.

Memory Channel Skip - permits unwanted memory channels to be skipped during memory scan.

ARM Scan - Scanning ARM memory

13.1 BAND SCAN MODE (VFO MODE)

In this scan option all MAIN BAND VFO channels are scanned by pressing the "SCAN" key. Frequency decimal point will flash to indicate scanning in progress. In the BAND SCAN mode no scan type symbol is displayed on the LCD panel. The scanning direction may be reversed by rotating the Main Tuning Dial in the direction opposite to the current scan direction. Pressing the appropriate Up/Down microphone switch, in Remote mode, also reverses the scan direction. All 4 scan types can be applied to Band Scan.

13.2 PROGRAM BAND SCAN MODE (VFO MODE)

This scan option allows the scanning of a range of VFO frequencies between user selected Lower (L) and Upper (U) band frequencies (the transceiver must be in the VFO mode to initiate this scanning option). Frequency Lower and Upper ranges are stored in 1L & 1U respectively for the VHF Band, and 2L & 2U respectively for the UHF Band.

Storing the Lower and Upper Ranges

1. Select VFO mode.

2. Select desired Lower Frequency.

3. Press the "FUNC" key. The "FUNC" indicator and memory channel number will be displayed on the LCD.

4. Rotate the Main Tuning Dial until 1L (for the lower VHF frequency or 2L for the lower UHF) is displayed.

5. Press the "MW" key to store the selected Lower Frequency to memory.

6. Select desired Upper Frequency.

7. Press the "FUNC" key. The "FUNC" indicator and memory channel number will be displayed on the LCD.

8. Rotate the Main Tuning Dial until 1U (for the upper VHF frequency or 2U for the upper UHF) is displayed.

9. Select any frequency between the programmed lower and upper limits.

10. Press the "SCAN" key to start scanning between the programmed lower and upper limits. Scan direction can be selected by turning the main tuning dial in the desired scan direction.

13.3 MEMORY SCAN MODE

This scan option allows the user to scan frequencies that have been programmed in any (or all) of the memory channels. Bands may be scanned individually or both bands may be scanned simultaneously. And the direction of scan (up or down) can be set by pressing the appropriate MHz Up / Down key prior to, or during, the scan operation. To store desired frequencies (or other functions) to memory channels, see the section of this manual entitled "Memory Write".

13.4 MEMORY CHANNEL SKIP MODE

Memory Channel Skip permits unwanted memory channels to be skipped during memory scan.

1. Press the "MR" key to select the Memory Recall mode.

2. Press the MHz Up / Down to select the memory channel to skip.

3. Press the "FUNC" key then the (SKIP) key. The decimal point will disappear and the selected memory channel will be skipped during Memory Scan.

4. Press the SCAN key. The channels programmed will be scanned and those programmed with SKIP will be skipped.

5. To cancel Memory Channel Skip, press the "FUNC" key and then the (SKIP) key. The decimal point will re-appear, and that memory channel is restored to scan.

13.5 ARM SCAN

To initiate the ARM scan option, push the "ARM" key to select the ARM mode. Then push the "SCAN" key to start scanning the ARM memories.

13.6 SCANNING TYPES

Busy Scan (No Display) - Stops at busy frequency or channel until clear, then resume scan.
Open Scan (SP) - Stops at open frequency or channel.
Time Busy Scan (TM) - Stops at busy frequency or channel, then resume scan after several seconds, whether busy or clear.
Time Open Scan (TM SP) - Stops at open frequency or channel, then resume scan after several seconds.

Engaging Scan Function and Selecting Scan Type:

1. Select mode, VFO, Memory, or ARM. Initial setting (No Display) indicates that "Busy Scan" is selected.

2. Press "FUNC" key then (S.TYP),"SP" displays indicating that "Open Scan" is selected.

3. Press "FUNC" key then (S.TYP),"TM" displays indicating that "Time Busy Scan" is selected.

4. Press "FUNC" key then (S.TYP),"TM SP" displays indicating that "Time Open Scan" is selected.

5. With the proper scan type selected, press the "SCAN" key to start scanning. The decimal point indicator will flash while the DR-600T/E is in the scan mode.

NOTE

In any scan mode, you can manually override a "stop" and resume scanning by rotating the Main Tuning Dial.

6. To stop scanning, push the "SCAN" key once more. The decimal point indicator will stop flashing, confirming that the DR-600T/E is no longer in the scan mode.

13.7 SCANNING WITH ADD MODE

The purpose of ADD mode is to allow scanning of the VHF lower scan limit through through the Upper scan limit and then switch over to the UHF scan limits and then repeat this event. In the following example you may use VHF or UHF frequencies only. You may not use UHF and VHF together in ADD MODE. Lets give an example to make it clear.

Example:

I want to scan from 145.000 to 145.250 and 147.000 to 147.250. This is possible through the use of ADD mode.

1. Select the VFO for the VHF band.

2. Enter 145.000 into the VFO.

3. Press the "FUNC" key.

4. Rotate the main tuning dial until 1L is shown.

5. Press MW switch.

6. Enter 145.250 into the VFO.

7. Press the "FUNC" key.

8. Rotate the main tuning dial until 1U is shown.

9. Press MW switch.

10. Enter 147.000 into the VFO.

11. Press the "FUNC" key.

12. Rotate the main tuning dial until 2L is shown.

13. Press MW switch.

14. Enter 147.250 into the VFO.

15. Press the "FUNC" key.

16. Rotate the main tuning dial until 2U is shown.

17. Press MW switch.

18. Check right now and make sure that the VFO is somewhere within the scan range of our example.

19. Press the "FUNC" key.

20. Press ADD key.

21. Press SCAN key.

The display will now scan 145.000 to 145.250 followed by 147.000 to 147.250. Turning the main tuning dial clockwise will cause scan frequency to increase. Turning the dial counter clockwise will cause the scan frequency to decrease.

14 REPEATER OPERATION

Amateur radio repeaters utilize separate transmitter and receiver sections. The transmitter frequency may be offset either above or below the receive frequency according to repeater coordination conventions.

NOTE

Repeater offsets are sometimes referred to as "splits". To Select Repeater Offset Frequency and Direction:

14.1 REPEATER SHIFTS / OFFSETS

1. Select VFO mode.

2. Press the SHIFT key.The current offset (usually 0.60) and the minus sign (-) will appear first on the LCD display panel, indicating a minus offset of 0.60 MHz (600 kHz). In this position the desired offset frequency may be selected by rotating the Main Tuning Dial in either direction. The DR-600T / E accepts offsets from 0.00 to 10.0 MHz in 5 kHz or 12.5 kHz steps.

3. Press the PTT switch to store the selected offset, the minus (-) shift and return to the selected repeater frequency.

4. Pressing the SHIFT key again will show the VFO frequency and the plus (+) offset indicator on the LCD display panel. Press the microphone PTT switch to store the frequency and the plus (+) offset.

5. Pressing the SHIFT key again will show the VFO frequency but neither the minus (-) nor the plus (+) offset direction indicator. In this mode the transmitter is not offset from the receiver frequency indicating the simplex mode. The transmitter will transmit on the frequency to which the receiver (VFO) is set.

o The "-" display indicates that the transmit frequency (when the PTT is pushed) will be below the receive frequency by the kHz or MHz selected.

o The "+" display indicates that the transmit frequency (when the PTT is pushed) will be above the receive frequency by the kHz or MHz selected.

14.2 PL ENCODE / DECODE

Tone Encode

1. Push the "Tone" key and the PL (sub-audible) tone frequency (in kHz) will display on the LCD for the selected VHF or UHF band.

2. Change to the desired kHz by turning the Main Tuning Dial (clockwise to increase, or counter clockwise to decrease). The DR-600T has 38 settings from 67.0 kHz to 250.3 kHz). ENC will display on the LCD, indicating that the selected PL Tone will be encoded (transmitted) with the main carrier frequency.

NOTE

The purpose of CTCSS (PL) is to reduce co-channel interference during band openings. CTCSS (PL) equipped repeaters will respond only to signals having the CTCSS tone required for that repeater."

3. To return to VFO, push the VFO key or the PTT.

Tone Decode

With the optional EJ-7U Tone Unit installed, you can set PL decode by:

1. Push the "Tone" key immediately after setting the tone kHz (without returning to VFO). DEC will display on the LCD, indicating that received PL tones will be decoded.

NOTE

The purpose of PL decoding is to selectively receive transmissions. Only those transmissions that have the appropriate PL sub-audible [CTCSS] tone will be received by the DR-600T/E.

14.3 REVERSE (REV)

In some areas there may be repeaters operating on repeater frequency pairs, the exact reverse of another repeater in the area. That is, the input of one repeater is the output frequency of the other and vice versa. To avoid the inconvenience of reprogramming every time both repeaters are in range, the REV key allows instant reversal of the input and output frequencies and the offset direction. The REV function is also useful to check the repeater input to determine if another station is heard directly so you can go simplex. To activate the REV function:

1. Press the REV key The repeater input frequency and opposite SHIFT indicator will appear on the LCD display panel.
2. Press the REV key again to cancel the REV function.

15 AUTOPATCH OPERATION

Many repeaters offer a telephone link known as an autopatch. The DR-600T/E can be utilized in the same manner as a mobile (or cellular) telephone. The DTMF (Dual Tone Multi Frequency) key pad on the remote control microphone (Standard on 600T) is used to send DTMF tones that can activate autopatches and control other repeater user functions. The repeater control operator or repeater users can advise you on how these functions are used.

o Optional Function for the DR-600E (European Version)

15.1 AUTODIALER

This function is used to transmit a memorized DTMF code. A programmed number may extend up to 18 digits. The DR-600T/E has four autodialer memory channels accessible to either VHF or UHF band. There is one memory channel (ARM channel 5)that is used to receive DTMF codes. This particular channel is NOT programmable directly from the DR-600T.

- Requires the DTMF Unit (EJ-8U) for T/E versions Without the use of the EJ-8U, it will appear as if the unit is performing autodial, in fact it isn't.

- Requires 16 Tone DTMF Microphone T-Standard E-(EMS-3Z)

15.2 AUTODIALER PROGRAMMING

1. Select the VFO for the desired band you wish to use.

2. Enter C13 on the DTMF microphone pad. The display will show a channel number and a flashing minus (-) sign. If the channel has already been programmed previously, the number for that channel will be shown.

3. Select channel by using the Mhz Up/Down key on the front panel. You may select 1 of 4 autodialer memory channels. The 5th channel is the DTMF monitor channel (See DTMF monitor section). You cannot store a DTMF sequence

4. Enter telephone number and any required codes up to a maximum of 18 digits.

5. Press the VFO or PTT switch on the microphone to store phone number or DTMF codes.

AUTODIALER TRANSMITTING

Remember that the optional DTMF Unit (EJ-8U) is required for Autodialer operation.

1. Select the VFO for the desired band you wish to use.

2. Select the transmitting frequency.

3. Enter C14 on the DTMF microphone pad.

4. Select the desired Autodialer channel by using the Mhz Up/Down key on the front panel. Only channels with phone numbers or codes programmed in will be accessible. Empty autodialer memory channels will not be accessible.

5. Depress the PTT key on the microphone and enter the code C15. The number programmed will now be sent and heard on the radio speaker.

6. Another way to send out the tones, Perform steps 1-4. Press the PTT and press the VHF or UHF button on the front panel.

NOTE

The Remote/DTMF switch on the microphone must be in the "Remote" position, not the DTMF position.

15.4 ERASE AUTODIALER NUMBER

1. Enter C13 on the DTMF pad.

2. Select the appropriate autodialer number. Select channel by using the Mhz Up/Down key on the front panel.

3. Press the "FUNC" key and then the "SKIP" key. The autodialer memory channel selected will be erased of all numbers and codes.

NOTE

Channel 5 of the Autodialer cannot be erased

16 REMOTE CONTROL OPERATIONS

You may control your DR-600 by a remote hand held radio with DTMF capability. In this section we will unfold the various REMOTE CONTROL features. The Optional DTMF Unit {EJ-8U} is REQUIRED. The DR-600T/E can be controlled by a DTMF capable remote transceiver, from any location within transmit/receive range of the DR-600T/E and remote unit.

Functions such as:

- o Cross Band Repeating
- o Accessing and Changing Memory Channels
- o Selecting Output Power
- o Selecting Main Band
- o Many other features can be controlled from a remote unit.

This exciting feature of the DR-600T/E gives the operator the ability to transmit from a low power Hand Held Unit through the DR-600T/E (Cross Band Repeat) with 45 Watts (approx) on VHF or 35 Watts (approx) on UHF.

16.1 CHANGE FREQUENCY REMOTELY

You can only change frequency directly on the sub-band from the main band. You can change the VHF frequency from UHF or change UHF frequency from VHF. The flashing DSQ indicator must be programmed to the main band. If you want to change the VHF frequency, you can only do that by coming in through the UHF band side, subsequently

the UHF band must have the flashing DSQ indicator on.

1. Enter DSQ number sequence via your hand held to the 600.

2. Press the "A" key on the hand held and notice how the main band display will go blank. New frequency digits will appear as they are entered. When the sixth digit is entered, the original display frequency of the main band will return, and the new frequency just entered will appear on the sub-band side.

Change Frequency on VHF via UHF Example:

Lets say that VHF shows 145.000 and I want to change that to 145.225.

1. Select UHF frequency with pre-programmed DSQ code.

2. I will key the PTT button on the hand held and enter my 3 digit access code. Don't release the PTT yet.

3. Press the "A" key on the hand held. The UHF display will go blank.

4. Enter the new VHF frequency "145.225". Notice that it will show up on the UHF side. When the 6th digit is entered, the original UHF frequency will display, and the VHF side will now show the new frequency 145.225.

16.2 CROSS BAND REPEAT REMOTELY

You can place your DR-600 into cross band repeat mode by using a hand held radio remotely. This is achieved simply by performing the following.

ENABLE

1. Enter DSQ number sequence via your hand held to the 600.

2. Press the "D" key followed by 99. This enables Cross Band repeat.

DISABLE

1. Enter DSQ number sequence via your hand held to the 600.

2. Press the "D" key followed by 01. This disables Cross Band repeat.

17 DR-600 MICROPHONE CONTROL

There are functions that can be utilized from the 600 mic or remotely accessed. This section will focus on functions accessed via the microphone.

17.1 DSQ DESCRIPTION

To operate DSQ, it is required to have the optional DTMF Unit (EJ-8U) and a 16 Tone DTMF Pad Microphone ((EMS-3Z) Standard with the US version, Optional with the European version).

The DSQ is divided into two primary functional groups:

1. Code Squelch
2. DSQ Paging

17.2 CODE SQUELCH

Code Squelch allows the squelch to be opened when the DR-600T/E receives a pre-designated three (03) digit code as programmed into any of the three group DSQ channels 1-3.

17.3 PROGRAM DSQ CODE

The DSQ is an abbreviated name for DTMF Squelch Control. This feature is used to DE-Code DTMF tones to open (or keep closed) the DR-600T/E squelch, and allow for receiving a transmission. This function is used to control your DR-600 remotely via a hand held radio. After the following steps are taken, your radio will only accept commands after a special combination of codes are sent.

1. Select VFO mode, and set desired frequency.

2. Make sure "Lock" switch on Mic is off (Right), and "Remote/DTMF" switch is in "Remote" position (Left).

3. Enter C10 on the Touch Tone Pad of the Mic. The frequency indicator on the main band (VHF/UHF) will blink on and off repeatedly.

4. On the Touch Tone Pad of the Mic enter a channel selection (one numerical digit 1-4), and an access code (three numerical digits, any selection from 000 to 999).

Immediately after entering the third digit of your access code (total of four digits, including the channel selection) the DR-600T/E will return to VFO mode.

5. Enter C12 on the Touch Tone Pad of the Mic. Flashing DSQ indicator will appear.

6. Push the PTT key on the Mic, or the "VFO" key on the front panel. The DSQ indicator will stop flashing.

7. Push the "FUNC" key, and then the MHz Up key on the front panel. There will be a confirming tone, and the DSQ will begin flashing (on and off) again.

8. To cancel the Remote Control Function, enter C12 on the Mic and press the MHz Down key. DSQ indicator will disappear.

At this point the Remote Control Function is programmed into the DR-600T/E, and can be controlled from a remote unit. It is recommended that this programming be stored in every memory channel that you may want to work remotely. To maintain Remote Control of the DR-600T/E it is necessary to have the flashing DSQ displayed on the LCD. If you change to modes (VFO or Memory), or memory channels that DON'T have a flashing DSQ programmed YOU WILL LOSE REMOTE CONTROL. The DTMF 3 digit codes for Remote Controlling are the same as used when controlling the DR-600T/E from the Touch Tone Pad on the Mic.

17.4 DSQ PAGING

DSQ Paging has three functions:

1. Group

   This allows the user to Page all the members of a predesignated group. A group is identified by seven (07) digits.

   GROUP CODE.....3 digits
   A CODE DELINEAR...1 digit (* on DTMF pad)
   SELF STATION CODE 3 digits

   When the group pager function is activated,stations with the same group code can communicate with all members of the group. The DR-600T has three channels for group codes. This allows the operator to have access to three different groups.

   NOTE

   The "*" As a Group Separator DSQ has reserved the "*" mark as a separator between different DSQ channels. The "*" CANNOT be used as any digit of a three digit DSQ Code.

2. Individual

   This allows the user to Page one pre-designated individual. An individual is identified by seven (07) digits.

   REMOTE STATION CODE...3 digits
   A CODE DELINEAR.....1 digit (* on DTMF pad)
   SELF STATION CODE.....3 digits

   When the individual pager function is activated, an individuals with the pre-designated individual code can communicate with the DR-600T/E operator. The DR-600T/E has one channel for individual codes.

NOTE

The "*" As a Group Separator DSQ has reserved the "*" mark as a separator between different DSQ channels. The "*" CAN NOT be used as any digit of a three digit DSQ Code.

3. Private Paging Within A Group

This allows the user to Page one individual within a pre-designated group. An individual is identified by six (06) digits.

GROUP CODE.....3 digits
FIRST DIGIT OF A REMOTE STATION CODE...1 digit
A "*".....1 digit
FIRST DIGIT OF THE PRE-DESIGNATED
SELF STATION CODE.....1 digit

NOTE

The "*" As a Group Separator DSQ has reserved the "*" mark as a separator between different DSQ channels. The "*" CANNOT be used as any digit of a three digit DSQ Code.

Code	Function	Description
B01	MEM CH.	Select memory Ch.01 on sub-band
B02	MEM CH.	Select memory Ch.02 on sub-band
B03	MEM CH.	Select memory Ch.03 on sub-band
B04	MEM CH.	Select memory Ch.04 on sub-band
B05	MEM CH.	Select memory Ch.05 on sub-band
B06	MEM CH.	Select memory Ch.06 on sub-band
B07	MEM CH.	Select memory Ch.07 on sub-band
B08	MEM CH.	Select memory Ch.08 on sub-band
B09	MEM CH.	Select memory Ch.09 on sub-band
B10	MEM CH.	Select memory Ch.10 on sub-band
B11	MEM CH.	Select memory Ch.11 on sub-band
B12	MEM CH.	Select memory Ch.12 on sub-band
B13	MEM CH.	Select memory Ch.13 on sub-band
B14	MEM CH.	Select memory Ch.14 on sub-band
B15	MEM CH.	Select memory Ch.15 on sub-band
B16	MEM CH.	Select memory Ch.16 on sub-band
B17	MEM CH.	Select memory Ch.17 on sub-band
B18	MEM CH.	Select memory Ch.18 on sub-band
B19	MEM CH.	Select memory Ch.19 on sub-band
B20	MEM CH.	Select memory Ch.20 on sub-band
B21	MEM CH.	Select memory Ch.21 on sub-band
B22	MEM CH.	Select memory Ch.22 on sub-band
B23	MEM CH.	Select memory Ch.23 on sub-band
B24	MEM CH.	Select memory Ch.24 on sub-band

Code	Function	Description
B25	MEM CH.	Select memory Ch.25 on sub-band
B26	MEM CH.	Select memory Ch.26 on sub-band
B27	MEM CH.	Select memory Ch.27 on sub-band
B28	MEM CH.	Select memory Ch.28 on sub-band
C00	CANCEL	Cancels Function
C01	VFO	Select VFO Mode
C02	MR	Select Memory Mode
C03	CALL	Select CALL Mode
C04	ARM	Select ARM Mode
C05	VHF	Select VHF Band
C06	UHF	Select UHF Band
C07	H/M/L	Select Power Output
C08	MHz UP	UP One MHz (or Memory Channel Up In Memory Mode)
C09	MHz DOWN	Down MHz (or Memory Channel Down In Memory Mode)
C10	DSQ	Set DSQ Code
C11	DSQ	Select DSQ Code
C12	DSQ	Select DSQ Mode
C13	DIALER	Set Autodialer
C14	DIALER	Select Autodialer
C15	DIALER	Transmit Autodialer
C21	VFO	Select VFO mode on sub-band
C22	MR	Select MR mode on sub-band
C23	CALL	Select CALL mode on sub-band
D01	REPEATER OFF	Turn OFF Cross Band Repeater
D99	REPEATER ON	Turn ON Cross Band Repeater

17.5 PROGRAM DSQ PAGING

DSQ has five (05) DSQ channels, divided into three specific operations. Each channel stores three (03) digits.

DTMF Paging

Self Station - DSQ Channel 0
Group Stations - DSQ Channel 1-3
Remote Station - DSQ Channel 4

DSQ PROGRAMMING

1. Enter "C11" on the microphone and use the MHz Up/Down key to choose DSQ Channel(1-3).

2. Push PTT to transmit DSQ code. Any (compatible) transceiver with same 3 digit code programmed will open squelch, and receive the transmission.

P DSQ PROGRAMMING

1. Enter "C12" on the Mic and use MHz Up key to select P DSQ.

2. Press PTT to set Private Paging.

3. Press PTT to transmit P DSQ codes (3 digits of DSQ channel 4 [Remote Station Code], "*" sign, and 3 digits of DSQ channel 0 [Self Station Code]). Any (compatible) transceiver with same codes programmed will open squelch, and receive transmission.

G DSQ PROGRAMMING

1. Enter "C12" on the Mic and use MHz Up key to select G DSQ press PTT to set G DSQ.

2. Enter "C11" and use MHz Up / Down key to select one of the three different Group Codes (DSQ channels 1-3).

3. Press PTT to transmit G DSQ codes (3 digits of selected [Group Code] DSQ channel 1-3, "*" sign, and three digits of DSQ channel 0 [Self Station Code]. Any (compatible) transceiver with same codes programmed will open squelch, and receive transmission.

PG DSQ PROGRAMMING

1. Enter "C12" on the Mic and use MHz Up key to select PG DSQ.

2. Press PTT to set PG DSQ.

3. Press PTT to transmit PG DSQ codes (3 digits of selected [Group Code] DSQ channel 1-3, first digit of DSQ channel 4 [Remote Station Code]., "*" sign, and first digit of DSQ channel 1 [Self Station Code]. Any (compatible) transceiver with same codes programmed will open squelch, and receive transmission.

17.6 SELECTING DSQ MODE

The DSQ mode consists of four features; three paging (Group,Private, and Individual within a Group) and Code Squelch. Each feature is displayed on the LCD when selected.

LCD Display DSQ Mode Feature

DSQ: Code Squelch
P DSQ:Private Paging
G DSQ:Group Paging
PG DSQ: Individual within a Group Paging
Indicator Off:No DSQ Setting

Here is how to make the appropriate selection:

1. Set the "Lock" switch on the Mic to the Unlocked position

right), and the "Remote/DTMF" switch to the remote position (left).

2. Enter "C12" on the Touch Tone Pad on the Mic. The "DSQ" indicator will begin to flash confirming the Code Squelch feature selected.

3. Press the PTT, DSQ stops flashing.

4. While the DSQ indicator is flashing, press the Mhz Up key to select Paging, Group, or Individual within a Group. After the proper selection has been made.

5. Press PTT on the microphone. The DSQ indicator will stop flashing.

NOTE

When the proper DSQ mode has been selected, the DR-600T/E will only receiver transmissions from another source when the proper DSQ codes are sent. Those DSQ codes will open the squelch on the DR-600T/E and allow a received signal to be monitored.

17.7 OPERATING DSQ PAGING AND SQUELCH

Operating DSQ paging and squelch will allow the originating DR-600T/E to open the squelch of a remote transceiver (compatible with the DR-600T/E).

1. Select the DSQ feature desired on the originating DR-600T/E. DSQ will transmit the 3, 7, or 6 digits of any selected group code.

2. Every time the PTT is depressed, the appropriate DSQ codes (as per selected feature) will be transmitted automatically.

17.8 EXAMPLES OF DSQ TRANSMISSIONS

When DSQ feature is selected, one of the Group Code (DSQ channels 1-3) will be automatically transmitted. You can choose which group code (DSQ channel) is transmitted by entering C11 on the Mic and using the MHz Up/Down key to select the desired channel. When the PTT is depressed, the chosen DSQ code will be automatically transmitted. Any compatible transceiver with the proper programming will open squelch.

Example:

OperationChannels

Self Station Code, DSQ channel No.0 085 DSQ1
Group Codes, DSQ channel No.'s 1 - 3 147 DSQ1
258 DSQ2
369 DSQ3

Remote Station Code, DSQ channel No. 4 456 DSQ4

P DSQ - Private Paging

When P DSQ feature is selected, the three digits of DSQ channel 4 (Remote Station Code), the "*" sign, and the three digits of DSQ channel 0 (Self Station Code), are transmitted automatically when the PTT is depressed. Any compatible transceiver with the proper programming will open squelch.

G DSQ - Group Paging

When G DSQ feature is selected, the three digits of the selected DSQ channel (1-3) (Group Code), the "*" sign, and the three digits of DSQ 0 (Self Station Code), are transmitted automatically when the PTT is depressed. Any compatible transceiver with the proper programming will open squelch.

PG DSQ - Individual within a Group Paging

When PG DSQ feature is selected, the three digits of the selected DSQ channel (1-3) (Group Code), the first digit of DSQ channel 4 (Remote Station Code), the "*" sign, and the first digit of DSQ channel 0 (Self Station Code). Any compatible transceiver with the proper programming will open squelch.

17.9 USING THE WILDCARD

DSQ has reserved the "#" mark as a wildcard. The wildcard allows for combining of groups. If the first (or first and second) digit of a several group codes are the same, you can replace the second and third digits (or just third digit) with a "#" mark, and thus transmit to all those groups.

Ex: Group Code (DSQ Channels 1-3)

Channel	DSQ Code	Wildcard
1	123	12#
2	124	12#
3	156	1##

In this example, the user could contact two (or all three) groups together, not separately as would be the case if "#" as wildcard was not used.

17.10 CHANGING VFO FREQUENCY

There are two methods of changing the VFO frequency of the main band (VHF or UHF) directly from the microphone.

Stepping by MHZ

1. Enter the programmed three digit access code.

2. Enter C08 to go up 1 MHz or C09 to go down 1 MHz.

Direct Entry

1. From the VFO mode, enter the new frequency desired. You must enter all 6 digits of the frequency If Step is set at 12.5 kHz you will only need to enter 5 digits to change the VFO frequency.

18 ADDITIONAL FUNCTIONS AND OPERATIONS

This section will cover all all operations and functions not previously described.

18.1 SIMULTANEOUS RECEIVING

Among the many useful features of the DR-600T/E is the ability to receive on both bands at the same time

1. Simply select the desired receiving frequencies on each band. Ensure that the MUTE function is not active on either band.

18.2 FULL DUPLEX OPERATION

Among other features of the DR-600T/E is the ability to operate in the "Full Duplex" mode. Full Duplex is similar to a telephone, where both parties can speak and listen simultaneously on two difference channels.

1. Select VFO and set the desired frequency on each band. Either band may be used to transmit. The selected Main Band will be the transmitting band. The sub-band will be the receiving band. In this mode you speak on the Main Band and listen on the sub-band. Avoid repeater frequencies. Restrict full duplex operation to established simplex frequencies only.

18.3 ABX (Automatic Band Exchange)

This function automatically selects whichever band is active (The presence of a signal) as the Main Band. To select the ABX Function;

1. Select VFO and set desired frequency.

2. Press FUNC key. The ABX indicator will appear on the LCD display.

If the microphone PTT switch is pressed while ABX has switched to the sub band, the ABX function is cancelled and the sub-band becomes the main band. If a priority function is active on the

sub-band it will be inactive when ABX switches to the main band. Priority will resume when ABX returns to the sub-band.

18.4 MUTE

The MUTE function permits temporary silencing of either band. To select the MUTE Function;

1. Press the MUTE key once for UHF, twice for VHF, three times for cancelling MUTE.

18.5 LOCK

This function prevents unintended function changes by locking out all functions except the main Power switch, and the microphone PTT switch. To select the LOCK Function;

1. Press the "FUNC" key and then the (LOCK) key to enable. To disable LOCK, follow step 1 again.

18.6 DIM

The DIM function allows selection of two different LCD display panel brightness levels. To change LCD brightness level;

1. Press the "FUNC" key, then the (DIM) key. Repeated pressing of those keys will raise and lower the brightness level of the LCD.

18.7 CANCEL

Some mistaken operations may be corrected with the CANCEL Function.

19 CROSS BAND

To manually place your DR-600 into Cross Band Repeat mode, you must modify your radio. These steps are straightforward, easy to perform, so take your time. We have broken this procedure into small distinct sub-sections called:

- o BEGIN CROSS BAND REPEATER MODIFICATION
- o FINISH CROSS BAND REPEATER MODIFICATION
- o RADIO RESETTING
- o CROSS BAND REPEATER MODIFICATION

19.1 BEGIN CROSS BAND REPEATER MODIFICATION

The DR-600T/E is capable of operating as a Cross Band Repeater. The DR-600T/E will receive a transmission on one band (VHF or UHF) and re-transmit on the other band.

It is necessary to perform a simple factory authorized modification (clipping a wire) to open the Cross Band Repeater function. After performing that modification, accessing Cross Band Repeater is accomplished through the front panel, or a remote unit.

1. Remove power source to the radio.

2. Remove four (04) screws holding the front panel to the unit main body. There are two screws on the right-hand side and two screws on the left-hand side of the front panel. The front panel can now be removed from the main body.

3. To separate the front panel from the main radio chassis, carefully unplug the cable in back of the front panel.

4. Remove two (02) screws holding the cover plate to the back of the front panel.

5. Carefully remove the back cover of the front panel, using a narrow blade, flat tip screw driver. Only slight pressure is required.

6. Cut or remove the "BLUE WIRE" Loop located on the exposed PC board. Go to "FINISH CROSS BAND REPEATER MODIFICATION".

19.2 FINISH CROSS BAND REPEATER MODIFICATION

7. Gently refit back cover to the front panel.

8. Insert the two (02) screws and secure.

9. Connect cable from main radio chassis to the front panel.

10. Refit front Panel to Main Body.

11. Attach front panel with four (04) small screws.

12. Go to "RADIO RESETTING".

19.3 RADIO RESETTING

1. Press and hold the "FUNC" key. While holding the "FUNC" key push the "Power" key on the front panel. The LCD will display 145.00 (VHF) and 445.00 (UHF), and you can now access Cross Band Repeat.

After performing the modification (described above), and resetting the radio, Cross Band Repeat can be accessed directly through the front panel or by remote control. For remote control, go to this section.

To engage cross band repeater function:

1. Press and hold the "FUNC" key, then press the "VHF" key.

To disengage cross band repeater function:

1. To disengage Cross Band Repeater function, press and hold the "FUNC" key, then press the UHF key.

20 MOBILE ANTENNA INSTALLATION

Connect the antenna for VHF to the VHF terminal located in the rear of the DR-600. Connect the antenna for UHF to the UHF terminal located in the rear of the DR-600. When using a single dual-band antenna, a DUPLEXER is required. The use of 50 ohm coaxial cable is required for all antenna installations. Mobile antennas required an appropriate mounting base for proper installation and operation. Please refer to the antenna manufacturers manual for the proper installation and mounting information. Antenna accessories are NOT available from ALINCO.