

# CW CONVENIENCE FEATURES

## CW SPOTTING (ZERO-BEATING)

“Spotting” (zeroing in on another CW station) is a handy technique to ensure you and the other station are precisely on the same frequency.

The Tuning Offset Indicator in the display may also be moved so you can adjust your receiver frequency to center the incoming station on the pitch corresponding to that of your transmitted signal.

### Using the Auto Zeroing System

(Only when the optional FFT unit is installed)

Press the [▲/▼/◀/▶] button to select the “ZIN/SPOT”. Press the [SELECT] switch momentarily to adjust the receiving frequency to the zero-in automatically while receiving the CW signal.

### Using the SPOT System

Press the [▲/▼/◀/▶] button to select the “ZIN/SPOT”. Press the [MONI] button, then while pressing the front panel [SELECT] button, the Spot tone will be heard through your speaker. This tone corresponds to the pitch of your transmitted signal. If you adjust the receiver frequency until the pitch of the received CW signal matches that of the Spot tone, your transmitted signal will be precisely matched to that of the other station.

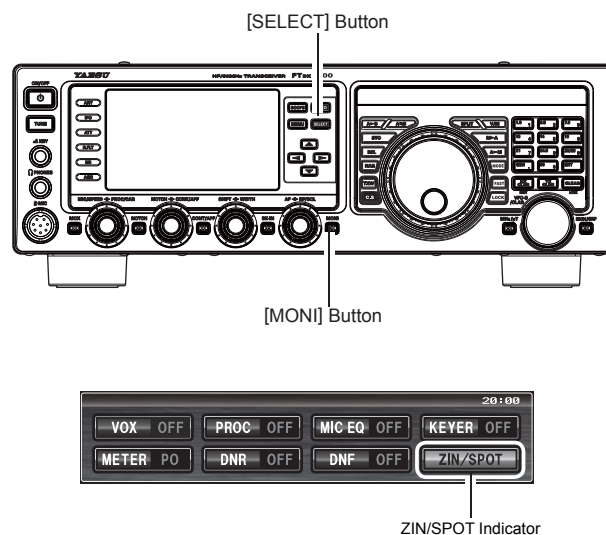
Release the [SELECT] button to turn the Spot tone off.

#### ADVICE:

- ❑ In a tough DX pile-up, you may actually want to use the SPOT system to find a “gap” in the spread of calling stations, instead of zeroing in precisely on the last station being worked by the DX station. From the DX side, if a dozen or more operators (also using Yaesu’s SPOT system) all call precisely on the same frequency, their dots and dashes merge into a single, long tone that the DX station cannot decipher. In such situations, calling slightly higher or lower in frequency may get your call through.
- ❑ The Tuning Offset Indicator in the display may be utilized for CW frequency adjustment, as well. Its configuration is set via Menu item “010 BAR DISPLAY SELECT” at the factory, and the Tuning Offset Indicator is already set to the “CW TUNE” selection.

#### QUICK POINTS:

- ❑ The CW Spotting process utilizes the Spot tone or the Tuning Offset Indicator. The actual offset pitch is set by Menu item “055 CW PITCH”. The offset pitch may be set to any frequency between 300 Hz and 1050 Hz, in 50 Hz steps. You can either match tones audibly (using the [SELECT] button) or tune the receiver frequency so that the central red marker on the Tuning Offset indicator lights up. Note that there are 31 “dots” on the Tuning Offset Indicator, and depending on the resolution selected, the incoming CW signal may fall outside the visible range of the bar indicator, if you are not reasonably close to the proper alignment of tones.



Retune: Shift to Higher Frequency



Retune: Shift to Lower Frequency



Zero-In



- ❑ The displayed frequency on CW normally reflects the “zero beat” frequency of your offset carrier. That is, if you were to listen on USB on 14.100.00 MHz to a signal with a 700 Hz offset, the “zero beat” frequency of that CW carrier would be 14.100.70 MHz; the latter frequency is what the FT-DX1200 displays, by default. However, you can change the display to be identical to what you would see on SSB by using Menu item “065 CW FREQ DISPLAY” and setting it to “DIRECT FREQ” instead of the default “PITCH OFFSET” setting.

# CW CONVENIENCE FEATURES

## USING CW REVERSE

If you experience a difficult interference situation, where an interfering station cannot readily be eliminated, you may wish to try receiving using the opposite sideband. This may move the interfering station's frequency in a direction that may lend itself more readily to rejection.

1. To start, let's use a typical example where you have set the CW mode (using the default "USB" injection).
2. Now be sure your mode selection is still set for VFO-A, and then press and hold in the **[MODE]** button for one second. The "LSB" and "CW" will appear in the display, indicating that the "LSB" injection side has now been selected.
3. To return to the normal (USB) injection side and cancel CW Reverse operation, press and hold in the **[MODE]** button for one second. (the "USB" and "CW" will appear in the display).

### NOTES:

- When CW Reverse is engaged, the action of the Tuning Offset Indicator will also be reversed
- When the incoming signal pitch tone is properly aligned, the central red marker lights up whether or not CW Reverse is engaged.

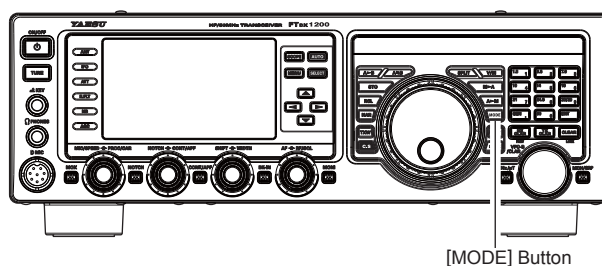
Retune: Shift to Lower Frequency



Retune: Shift to Higher Frequency



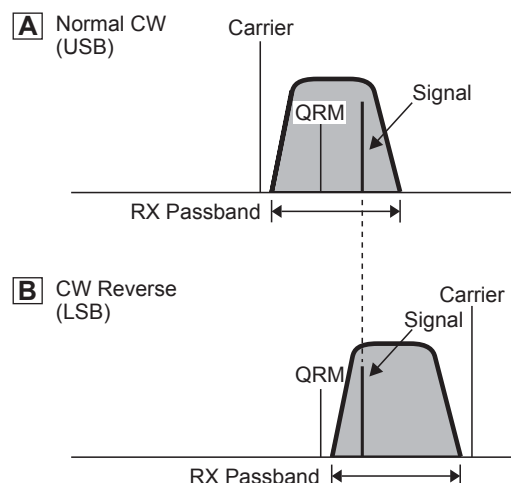
Zero-In



[MODE] Button

In the illustration, Figure "A" demonstrates the normal CW injection setup, using the USB side. In Figure "B", CW Reverse has been engaged to receive using LSB-side injection and eliminate interference.

The beneficial effect of switching sidebands can be clearly seen in this example.

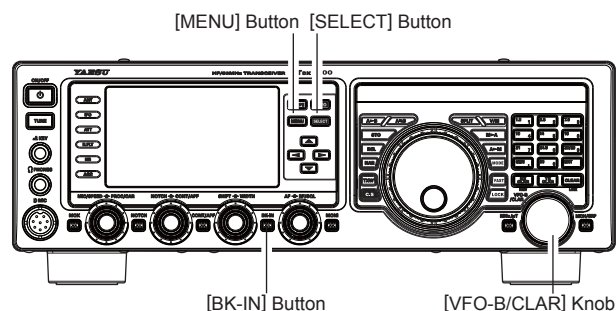


# CW CONVENIENCE FEATURES

## CW DELAY TIME SETTING

During semi-break-in (not QSK) operation, the hang time of the transmitter, after you have finished sending, may be adjusted to a comfortable value consistent with your sending speed. This is the functional equivalent of the “VOX Delay” adjustment used on voice modes, and the delay may be varied anywhere between 30 msec and 3 seconds via Menu item “063 CW BK-IN DELAY”.

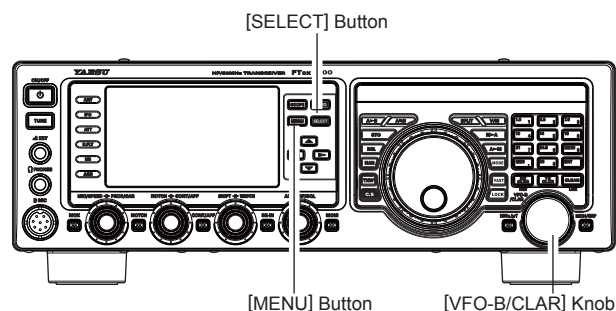
1. Press the **[BK-IN]** button to enable CW transmission (Menu item “062 CW BK-IN” must be set to “SEMI”).
2. Press the **[MENU]** button to enter the Menu mode.
3. Rotate the **[VFO-B/CLAR]** knob (or press the **▲/▼** button) to select Menu item “063 CW BK-IN DELAY”, then press the **[SELECT]** button.
4. Start sending and rotate the **[VFO-B/CLAR]** knob to adjust the hang time, as you prefer for comfortable operation.
5. When you are finished, press the **[SELECT]** button, then press the **[MENU]** button to save the new setting and exit to normal operation.



## CW PITCH ADJUSTMENT

You may adjust the center frequency of the receiver passband, and change the pitch of your offset CW carrier, to the tone you prefer via Menu item “055 CW PITCH”. The tone may be varied between 300 Hz and 1050 Hz, in 10 Hz steps.

1. Press the **[MENU]** button to enter the Menu mode.
2. Rotate the **[VFO-B/CLAR]** knob (or press the **▲/▼** button) to select Menu item “055 CW PITCH”.
3. Press the **[SELECT]** button, then rotate the **[VFO-B/CLAR]** knob or press the **▲/▼** button to select the desired tone.
4. When you are finished, press the **[SELECT]** button, then press the **[MENU]** button to save the new setting and exit to normal operation.



### ADVICE:

You may confirm the Spot tone frequency by pressing the **[SELECT]** button.

### TERMINOLOGY:

**CW Pitch:** If you tuned to an exact “zero beat” on an incoming CW signal, you could not copy it (“Zero beat” implies a 0 Hz tone). Therefore, the receiver is offset several hundreds of Hz (typically), to allow your ear to detect the tone. The BFO offset associated with this tuning (that produces the comfortable audio tone) is called the CW Pitch.

# CW CONVENIENCE FEATURES

## CONTEST MEMORY KEYS (USING THE OPTIONAL FH-2 REMOTE CONTROL KEYPAD)

You may also utilize the CW message capability of the FTdx1200 from the optional FH-2 Remote Control Keypad, which plugs into the rear panel REM jack.

### Message Memory

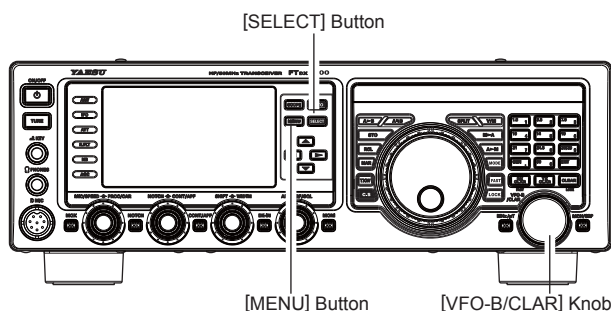
Five memory channels capable of retaining 50 characters each are provided (using the PARIS standard for characters and word length).

*Example:* CQ CQ CQ DE W6DXC K (19 characters)

..... - - - - . . . . - - - - . . . . - - - - . . . . - - - - . . . . - - - - . . . . - - - - . . . .  
(C) (Q) (C) (Q) (C) (Q) (D)(E) (W) (6) (D) (X) (C) (K)

### STORING A MESSAGE INTO MEMORY

1. Press the **[MENU]** button to enter the Menu mode.
2. Rotate the **[VFO-B/CLAR]** knob (or press the **▲/▼** button) to select the CW Memory Register into which you wish to store the message; for now, we are just setting the message entry technique to (Keyer entry).  
026 CW MEMORY 1  
027 CW MEMORY 2  
028 CW MEMORY 3  
029 CW MEMORY 4  
030 CW MEMORY 5
3. Press the **[SELECT]** button, then rotate the **[VFO-B/CLAR]** knob (or press the **▲/▼** button) to set the selected CW Memory Register to "MESSAGE". If you want to use your keyer paddle for message entry on all memories, set all five Menu items (#026 ~ 030) to "MESSAGE".
4. Press the **[SELECT]** button, then press the **[MENU]** button to save the new settings and exit.



### TERMINOLOGY:

**PARIS Word Length:** By convention among CW and Amateur operators (utilized by ARRL and others), the length of one "word" of CW is defined as the length of the Morse Code characters spelling the word "PARIS". This character (dot/dash/space) length is used for the specific definition of code speed in "words per minute".

### NOTE:

You must exercise care in sending to ensure that the spaces between letters and words are accurately done; if your timing is off, the spacing may not come out right in the stored message. For ease in setting up the keyer memories, we recommend you set Menu item "017 F KEYS TYPE" and/or "019 R KEYS TYPE" to "ACS" (Automatic Character Spacing) while you are programming the keyer memories.

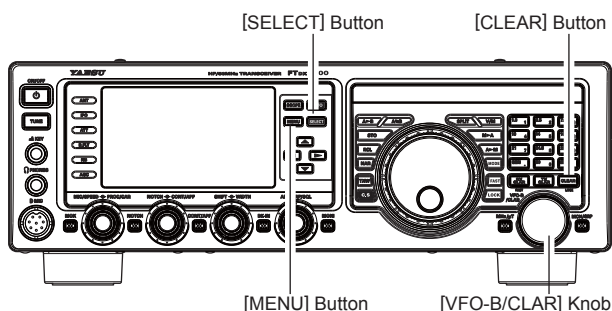
### Contest Number Programming

Use this process if you are starting a contest, or if you somehow get out of sync with the proper number in the middle of a contest.

1. Press the **[MENU]** button to enter the Menu mode.
2. Rotate the **[VFO-B/CLAR]** knob (or press the **▲/▼** button) to select Menu item "025 CONTEST NUMBER". The current contest number appears in the Multi-Display Window on the display.
3. Press the **[SELECT]** button, then rotate the **[VFO-B/CLAR]** knob (or press the **▲/▼** button) to set the Contest Number to the desired value.

### ADVICE:

Press the **[CLEAR]** button (located at the upper right of the **[VFO-B/CLAR]** knob) to reset the Contest Number to "1".



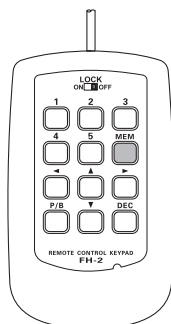
4. Press the **[SELECT]** button, then press the **[MENU]** button to store the new number and exit.

# CW CONVENIENCE FEATURES

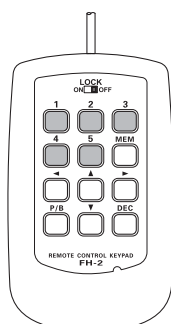
## CONTEST MEMORY KEYER (USING THE OPTIONAL FH-2 REMOTE CONTROL KEYPAD)

### MESSAGE MEMORY PROGRAMMING (USING YOUR PADDLE)

1. Set the operating mode to CW.
2. Set the [BK-IN] button to "Off".
3. Turn the internal Electronic Keyer "On".
4. Press the [MEM] key on the FH-2. A blinking "REC" icon will appear in the display.



5. Press any of the FH-2 keys numbered [1] through [5] to begin the memory storage process, and the "REC" icon will glow steadily.

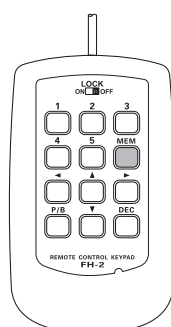


6. Send the desired message using your keyer paddle.

#### ADVICE:

If you do not start keying within ten seconds, the memory storage process will be cancelled.

7. Press the [MEM] key on the FH-2 once more at the end of your message. Up to 50 characters may be stored in each of the five memories.

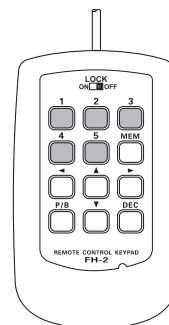


#### NOTE:

You must exercise care in sending to ensure that the spaces between letters and words are accurately done; if your timing is off, the spacing may not come out right in the stored message. For ease in setting up the keyer memories, we recommend you set Menu item "017 F KEYER TYPE" and/or "019 R KEYER TYPE" to "ACS" (Automatic Character Spacing) while you are programming the keyer memories.

### CHECKING THE CW MEMORY CONTENTS

1. Be sure that Break-in is still turned "Off" by the [BK-IN] button.
2. Press the [MONI] button to enable the CW monitor.
3. Press the FH-2 [1] ~ [5] key, whichever memory you just recorded in. You will hear the results in the sidetone monitor, but no RF energy will be transmitted.

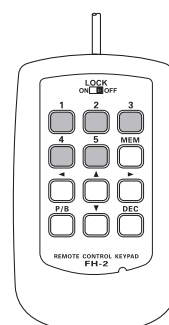


#### NOTE:

You may adjust the monitor level setting using Menu item "035 MONITOR LEVEL".

### ON-THE-AIR CW MESSAGE PLAYBACK

1. Press the [BK-IN] button to enable transmission. Either Full- or Semi-break-in will be engaged, depending on the setting of Menu item "062 CW BK-IN".
2. Press the FH-2 [1] ~ [5] key, depending on which CW Memory Register message you wish to transmit. The programmed message will be transmitted on the air.



#### NOTE:

If you subsequently decide to use the "Text Memory" technique for memory storage, please note that a message stored using keyer paddle input will not be transferred over when you select "Text Memory technique" on a particular memory register (the Menu Mode Setting is set to "TEXT").

# CW CONVENIENCE FEATURES

## CONTEST MEMORY KEYS (USING THE OPTIONAL FH-2 REMOTE CONTROL KEYPAD)

### TEXT Memory

The five channels of CW message memory (up to 50 characters each) may also be programmed using a text-entry technique. This technique is somewhat slower than when you send the message directly from your keyer paddle, but accuracy of character spacing is ensured.

*Example 1:* CQ CQ CQ DE W6DXC K (20 characters)

The sequential Contest Number (“Count up”) feature is another powerful feature of the CW Memory Keyer.

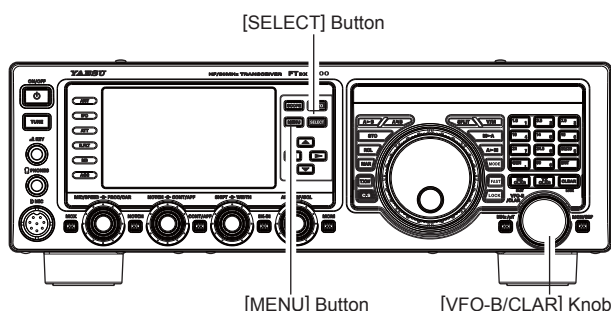
*Example 2:* 599 10 200 # K (15 characters)

### TEXT MEMORY STORAGE

1. Press and hold in the [MENU] button for one second to enter the Menu mode.
2. Rotate the [VFO-B/CLAR] knob or press the ▲/▼ button to select the CW Memory Register into which you wish to store the message; we are now setting the message entry technique to (Text entry).

- 026 CW MEMORY 1
- 027 CW MEMORY 2
- 028 CW MEMORY 3
- 029 CW MEMORY 4
- 030 CW MEMORY 5

3. Press the [SELECT] button, then rotate the [VFO-B/CLAR] knob or press the ▲/▼ button to set the selected CW Memory Register to “TEXT”. If you want to use text message entry on all memories, set all five Menu items (#026 ~ 030) to “TEXT”.
4. Press the [SELECT] button, then press the [MENU] button to save the new settings and exit.



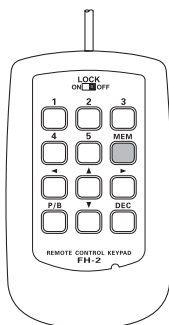
TEXT	CW CODE	TEXT	CW CODE	TEXT	CW CODE	TEXT	CW CODE	TEXT	CW CODE	TEXT	CW CODE
!	SN	&	AS	+	AR	:	OS	?	MI	^	—
"	AF	'	WG	,	MIM	;	KR	@	@	_	TQ
#	—	(	KN	-	DU	<	—	[	—	}	—
\$	SX	)	KK	.	AAA	=	BT	¥(N)	AL		
%	KA	*	—	/	DN	>	—	}	—		

# CW CONVENIENCE FEATURES

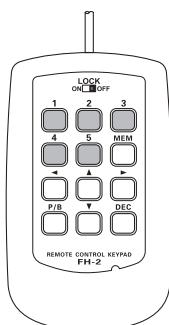
## CONTEST MEMORY KEYS (USING THE OPTIONAL FH-2 REMOTE CONTROL KEYPAD)

### TEXT MESSAGE PROGRAMMING

1. Press the **[MODE]** button to set the operating mode to CW.
2. Be sure that Break-in is "Off" by pressing the **[BK-IN]** button, if necessary.
3. Press the **FH-2 [MEM]** key. A blinking "REC" icon will appear in the display.



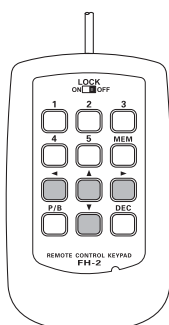
4. Press an **FH-2 [1] ~ [5]** key to select the desired CW Memory Register into which you wish to program the text, the blinking "REC" icon will disappear.



5. Use the **FH-2 [◀]** and **[▶]** keys to set the cursor position and use the **FH-2's [▲]** and **[▼]** keys to choose the letter/number to be programmed in each slot of the memory. In the case of the second example above, the " #" character designates the slot where the Contest Number will appear.

### ADVICE:

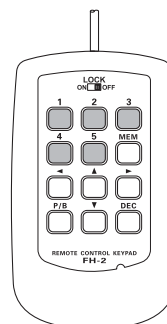
You may also use the Main Tuning Dial knob and the **[VFO-B/CLAR]** knobs to program the message characters.



6. When the message is complete, add the "}" character at the end to signify the termination of the message.
7. Press and hold in the **FH-2 [MEM]** key for one second to exit, once all characters (including "}") have been programmed.

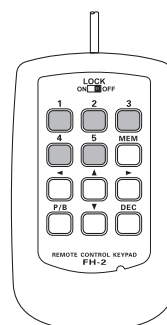
### CHECKING THE CW MEMORY CONTENTS

1. Be sure that Break-in is still turned "Off" by the **[BK-IN]** key.
2. Press the **[MONI]** button to enable the CW monitor.
3. Press an **FH-2 [1] ~ [5]** key, whichever memory you just recorded in. You will hear the results in the sidetone, but no RF energy will be transmitted.



### ON-THE-AIR CW MESSAGE PLAYBACK

1. Press the **[BK-IN]** button to enable transmission. Either Full-break-in or Semi-break-in will be engaged, depending on the setting of Menu item "062 CW BK-IN".
2. Press an **FH-2 [1] ~ [5]** key, depending on which CW Memory Register message you wish to transmit. The programmed message will be transmitted on the air.



# CW CONVENIENCE FEATURES

## CONTEST MEMORY KEYER (USING THE OPTIONAL FH-2 REMOTE CONTROL KEYPAD)

### NOTE:

If you subsequently decide to use the “Message Memory” technique for memory storage, please note that the contents of a message stored using text input will not be transferred over when you set entry to “Message Memory technique” on a particular memory register (the Menu Mode Setting is set to “MESSAGE”).

### Decrementing the Contest Number

Use this process if the current contest number gets slightly ahead of the actual number you want to send (in case of a duplicate QSO, for example).

Press the **FH-2 [DEC]** key momentarily. The current Contest Number will be reduced by one. Press of the **FH-2 [DEC]** key as many times as necessary to reach the desired number. If you go too far, use the “Contest Number Programming” technique described previously.

### Transmitting in the Beacon Mode

In “Beacon” mode, it is possible to repeatedly transmit any message programmed, either via paddle input, or via the “Text” input method. The time delay between message repeats may be set anywhere between 1 and 690 seconds (1 ~ 240 sec (1 sec/step) or 270 ~ 690 sec (30 sec/step)) via Menu item “023 BEACON TIME” If you do not wish the message to repeat in a “Beacon” mode, please set this Menu item to “OFF”.

To transmit the message:

1. Press the **[BK-IN]** button to enable transmission. Either Full-break-in or Semi-break-in will be engaged, depending on the setting of Menu item “062 CW BK-IN”.
2. Press an **FH-2 [1] ~ [5]** key. Repetitive transmission of the Beacon message will begin.



# CW CONVENIENCE FEATURES

## CW DECODE

When the optional FFT unit is installed, alphanumeric Morse code can be decoded and displayed as text on the TFT display.

1. Press the **[MODE]** button to set the operating mode to CW.
2. Tune the receiver to a CW signal, then press and hold the **[SCOPE]** switch for one second or longer.

**ADVICE:**

The CW DECODE screen is displayed, and the decoded message is displayed on the screen.

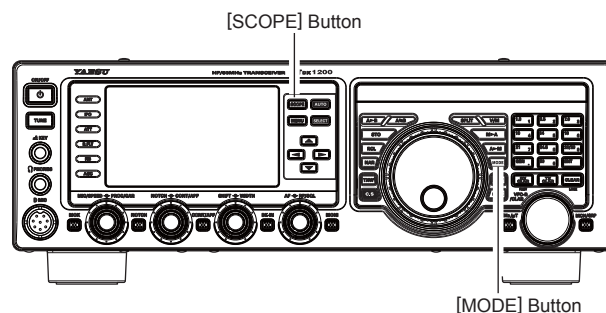
**NOTE:**

Interfering signals, noise, phasing, code accuracy, and the like may prevent accurate message copy.

To cancel the CW decode function, press and hold the **[SCOPE]** switch again for one second or longer.

**ADVICE:**

- If scrambled text is displayed due to noise and clutter, when a CW signal is not being received, turn the **[VFO-B/CLAR]** knob to adjust the threshold level.
- Decoding accuracy will increase if you turn the **[MIC/SPEED]** knob and adjust to a speed close to that of the CW signal being received.



### Threshold Level Adjustment

Scrambled text may be displayed due to noise and clutter, when a signal is not being received. You can adjust the threshold level to reduce or eliminate the scrambled text.

Turn the **[VFO-B/CLAR]** knob, and adjust the threshold level (between 0 and 100) so text is not displayed due to noise and the like.

- Note that text will no longer be displayed for weak signals if you increase the level too much.
- You switch between threshold level display and normal display each time you press the **[SELECT]** button.

- The threshold level is displayed in the VFO-B frequency display part.

# FM MODE OPERATION

## BASIC OPERATION

1. Press the **[MODE]** button repeatedly, until the “**FM**” icon appears in the display, to select the FM operating mode.
2. Rotate the Main Tuning Dial knob to select the desired operating frequency. Pressing the microphone **[UP]** or **[DWN]** buttons will cause frequency change in 5 kHz steps.
3. Press the microphone **PTT** switch (or press the front panel **[MOX]** button) to transmit. Speak into the microphone in a normal voice level. Release the **PTT** or **[MOX]** switch to return to receive.
4. Adjustment of the microphone gain may be accomplished in two ways. At the factory, a default level has been programmed that should be satisfactory for most situations. However, using Menu item “084 FM MIC GAIN”, you may set a different fixed value, or choose the “MCVR” option, which then lets you use the front panel **[MIC/SPEED]** knob to set the microphone gain in the FM mode.

### ADVICE:

- You may change the tuning step of the Main Tuning Dial knob via Menu item “152 AM/FM DIAL STEP”.
- You may change the tuning step of the microphone **[UP]**/**[DWN]** button via the Menu item “156 FM CH STEP”.
- The Transmit Monitor is another helpful way to verify proper adjustment of the FM MIC Gain. By pressing the **[MONI]** button, you will be able to hear the differences in deviation as you make adjustments.
- FM is only used in the 28 MHz and 50 MHz Amateur bands covered by the **FTdx1200**. Please do not use FM on any other bands.

