

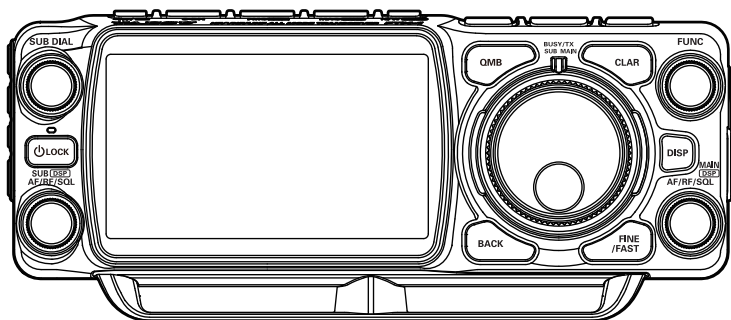
# ***YAESU***

*Radio for Professionals*

**HF/50/144/430MHz ALL MODE TRANSCEIVER**

## ***FTX-1series***

### **Advance Manual**



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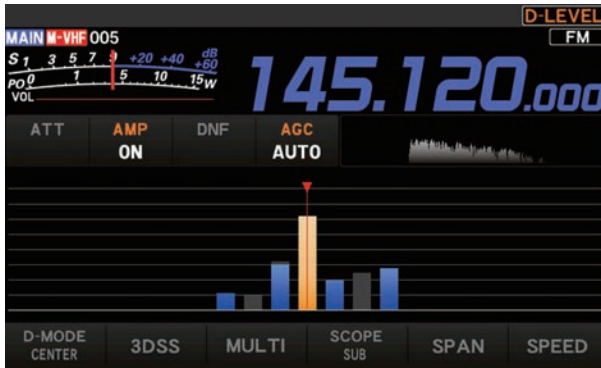
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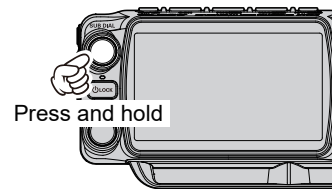
## Memory Channel Scope

The Memory Channel Scope presents a view of operating activity on channels above and below the current memory channel as the center.



1. Press the **SUB DIAL** knob to change MAIN-side.
2. Press the **[V/M (MW)]** key to enter the memory mode.
3. Press and hold the **SUB DIAL** knob.

With the current memory channel in the center, the signal strengths of 43 channels bandwidth are shown on a graph.



- When a signal on the scope screen is touched, the memory channel becomes the receive channel, and is set to the center memory channel of the scope.
  - The receive memory channel may also be changed by turning the **MAIN DIAL** knob.
4. To turn the Memory Channel Scope OFF, press and hold the **SUB DIAL** knob.

## Bluetooth Operation

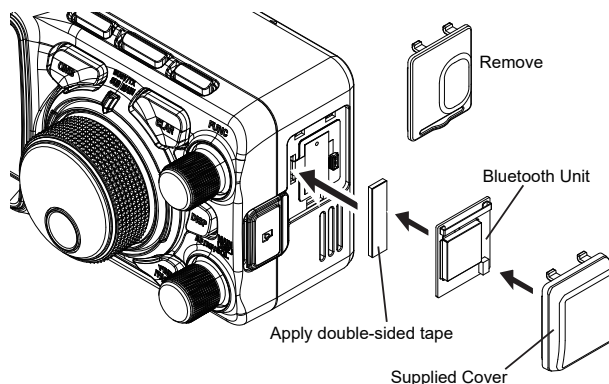
The FTX-1 can be equipped with the Bluetooth function by installing the optional Bluetooth unit "BU-6". Hands-free operation is possible using the optional Bluetooth headset (SSM-BT20) or a commercially available Bluetooth headset.



The operation of all commercially available Bluetooth headsets cannot be guaranteed.

### Installing the Bluetooth unit "BU-5"

1. Turn the transceiver OFF.
2. Remove the Bluetooth unit cover from the transceiver.
3. Apply double-sided tape to Bluetooth unit.  
Double-sided tape is included with the BU-6.
4. Align the Bluetooth unit connector with the connector on the board and install.
5. Carefully attach the supplied cover.



### Pairing the Bluetooth Headset

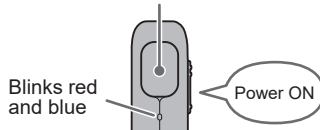
When using the Bluetooth Headset for the first time, the Bluetooth Headset and the FTX-1 must be paired.

This step is only necessary when first connecting the headset.

1. To start the Bluetooth headset in pairing mode.

**SSM-BT20:** Press and hold the Multi-function Button for 3 seconds, until the SSM-BT20 LED blinks red/blue alternately.

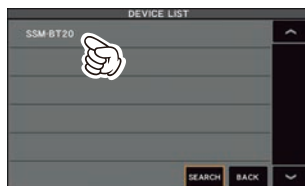
Press and hold the Multi Function Button for 3 seconds to turn ON.



2. Press and hold the **[FUNC]** knob.
3. Select **[OPERATION SETTING]** → **[OPTION]**.
4. Touch **[DONE]** on the **[Bluetooth]** item.
5. Touch **[Bluetooth]** set to "ON".
6. Touch **[DONE]** on the **[DEVECE LIST]** item.
7. The DEVECE LIST screen will be displayed.
8. Touch **[SEARCH]**.

The search starts, and the model name of the found Bluetooth device is displayed in the list.

9. When the headset to be connected is displayed, touch the Bluetooth head set to be connected.



While connected to a Bluetooth headset, the “” icon lights up on the FTX-1 screen, and the received audio and operation beep will be heard from the Bluetooth headset.

- The LED of SSM-BT20 blinks blue. The pairing is completed.

### **Disable the Bluetooth Function**

To cancel the Bluetooth operation, just repeat the above procedures, selecting “OFF” in step 5 above.

### **Transmit operation by pressing the button on the Bluetooth headset (when the VOX Function is OFF)**

When the VOX function is OFF, pressing the “Call button”\* on the Bluetooth headset once will engage the FTX-1 in transmit, and then a call can be made using the Bluetooth headset.

Press the “Call button”\* again to return the FTX-1 to receive.

\*The button name may differ depending on your Bluetooth headset.

1. To start the Bluetooth headset in pairing mode.

Press briefly to transmit

**SSM-BT20:** When the Multi-function Key is pressed, a beep will sound and the FTX-1 will continuously transmit.

Press the Multi-function Key again, a beep will sound and the FTX-1 will return to receive mode.



### **Hands-free VOX operation with a Bluetooth headset**

When FTX-1 VOX (automatic voice transmission) function is turned ON, the Bluetooth headset can perform hands-free operation and transmit automatically just by talking. Turn the VOX function ON according to “VOX Operation” (see page 25).

## **Bluetooth received audio output**

---

When a Bluetooth headset is connected, the received audio can automatically be output from the headset only, or from both the headset and the transceiver speaker.

1. Press and hold the **[FUNC]** knob.
2. Select [OPERATION SETTING] → [OPTION].
3. Touch [DONE] on the [Bluetooth] item.
4. Select [AUDIO].
5. Rotate the **[FUNC]** knob, or touch "<" or ">" on either side of the value to select "FIX" or "AUTO".

**AUTO:** The received audio comes from only the Bluetooth headset.

**FIX:** The received audio comes from both the Bluetooth headset and the speaker of this transceiver.

Factory default value: AUTO

6. Press the **[FUNC]** knob, or wait for about 3 seconds to save the setting.
7. Press the **[BACK]** key several times to return to normal operation.

## Parametric Microphone Equalizer

The FTX-1 includes a unique Three-Band Parametric Microphone Equalizer that provides precise, in- dependent control over the low, mid and treble ranges in the voice waveform. One group of settings may be utilized when the Speech Processor is Off, and an alternate group of settings when the Speech Processor is On (SSB mode only).



Parametric microphone equalizer function is activated only in LSB, USB, AM, AM-N, FM and FM-N modes.

### Setup the Parametric Microphone Equalizer

1. Set the RF output power to minimum value.



We recommend connecting a dummy load to one of the Antenna jacks, and monitoring the signal on a separate receiver, to prevent interference to other users.

2. Press and hold the **[FUNC]** knob.
3. Touch **[MIC EQ]**.

Parametric Microphone Equalizer function is activated.

- To adjust the Parametric Microphone Equalizer with the Speech Processor engaged, activated the Speech Processor.

4. Touch **[MONI LEVEL]**.

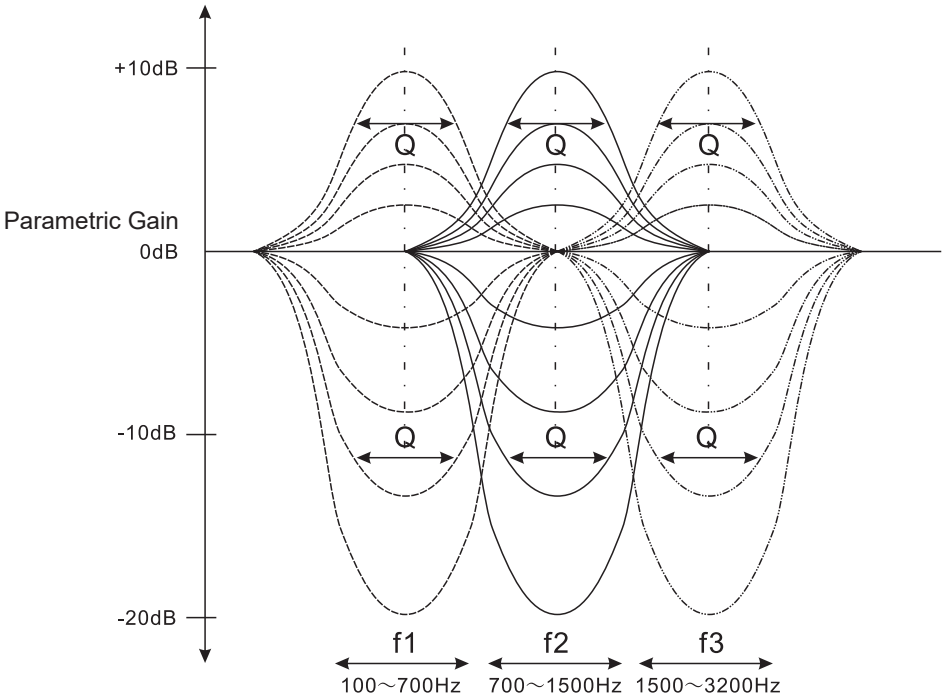


5. Rotate the **[FUNC]** knob to adjust the Monitor level.
6. Select **[OPERATION SETTING]** → **[TX AUDIO]**.
7. Rotate the **[FUNC]** knob to find Menu items **[PRMTRC EQ1 FREQ]** through **[PRMTRC EQ3 BWTH]**; these parameters apply to the adjustment of the Parametric Microphone Equalizer when the Speech Processor is disabled. Menu items **[P PRMTRC EQ1 FREQ]** through **[P PRMTRC EQ3 BWTH]** apply to the adjustment of the Parametric Microphone Equalizer when the Speech Processor is engaged.
8. Rotate the **[FUNC]** knob, or touch “<” or “>” on either side of the value to adjust a particular Menu item.
9. Press and hold the PTT switch, and speak into the microphone while listening to the effect of the adjustments being made. Because the overall sound will change with each adjustment, make several passes through each adjustment area, to be sure that the optimum settings are achieved.
  - The best way to hear the effects of the adjustments is to wear headphones (connected to the monitor receiver) while listening to the transmitted signal.
10. When all adjustments are satisfactory, press the **[FUNC]** knob, or wait for about 3 seconds to save the setting.
11. Press the **[BACK]** key several times to return to normal operation.

## Activate the Parametric Microphone Equalizer

1. Adjust the MIC gain.
2. Press and hold the **[FUNC]** knob.
3. Touch **[MIC EQ]**.  
Parametric Microphone Equalizer function is activated.
4. Press the PTT switch on the microphone, and speak into the microphone in a normal voice level.

To cancel the Parametric Microphone Equalizer function, repeat steps 2 and 3 above, and choose "OFF" in step 3.



### 3-Stage Parametric Equalizer Adjustments (Speech Processor: "OFF")

|                  |                  |                                        |     |
|------------------|------------------|----------------------------------------|-----|
| Center Frequency | PRMTRC EQ1 FREQ  | (Low) OFF / "100" (Hz) - "700" (Hz)    | OFF |
|                  | PRMTRC EQ2 FREQ  | (Mid) OFF / "700" (Hz) - "1500" (Hz)   |     |
|                  | PRMTRC EQ3 FREQ  | (High) OFF / "1500" (Hz) - "3200" (Hz) |     |
| Parametric Gain  | PRMTRC EQ1 LEVEL | (Low) "-20" (dB) - "+10" (dB)          | +5  |
|                  | PRMTRC EQ2 LEVEL | (Mid) "-20" (dB) - "+10" (dB)          |     |
|                  | PRMTRC EQ3 LEVEL | (High) "-20" (dB) - "+10" (dB)         |     |
| Q (Bandwidth)    | PRMTRC EQ1 BWTH  | (Low) "0" - "10"                       | 10  |
|                  | PRMTRC EQ2 BWTH  | (Mid) "0" - "10"                       |     |
|                  | PRMTRC EQ3 BWTH  | (High) "0" - "10"                      |     |

### 3-Stage Parametric Equalizer Adjustments (Speech Processor: “ON”)

|                  |                    |                                        |     |
|------------------|--------------------|----------------------------------------|-----|
| Center Frequency | P PRMTRC EQ1 FREQ  | (Low) OFF / “100” (Hz) - “700” (Hz)    | OFF |
|                  | P PRMTRC EQ2 FREQ  | (Mid) OFF / “700” (Hz) - “1500” (Hz)   |     |
|                  | P PRMTRC EQ3 FREQ  | (High) OFF / “1500” (Hz) - “3200” (Hz) |     |
| Parametric Gain  | P PRMTRC EQ1 LEVEL | (Low) “-20” (dB) - “+10” (dB)          | 0   |
|                  | P PRMTRC EQ2 LEVEL | (Mid) “-20” (dB) - “+10” (dB)          |     |
|                  | P PRMTRC EQ3 LEVEL | (High) “-20” (dB) - “+10” (dB)         |     |
| Q (Bandwidth)    | P PRMTRC EQ1 BWTH  | (Low) “0” - “10”                       | 2   |
|                  | P PRMTRC EQ2 BWTH  | (Mid) “0” - “10”                       | 1   |
|                  | P PRMTRC EQ3 BWTH  | (High) “0” - “10”                      |     |

Center Frequency: The center frequency of each of the three bands may be adjusted.

Gain: The amount of enhancement (or suppression) within each band may be adjusted.

Q: The bandwidth over which the equalization is applied may be adjusted.

## Adjustable Receiver Audio Filter

The FTX-1 incorporates an adjustable receiver audio filter, that affords precision control of the lower and upper audio ranges independently.

1. Press and hold the **[FUNC]** knob.
2. Select **[CW SETTING]** for CW mode and **[RADIO SETTING]** for other modes.
3. Select the Mode and Menu Item you want to set (see table below).
4. Rotate the **[FUNC]** knob, or touch "<" or ">" on either side of the value to adjust the receiver audio response as desired.
5. Press the **[FUNC]** knob, or wait for about 3 seconds to save the setting.
6. Press the **[BACK]** key several times to return to normal operation.



| Menu Item     |           | Available Values |                                | Default  |
|---------------|-----------|------------------|--------------------------------|----------|
| RADIO SETTING | MODE SSB  | LCUT FREQ        | OFF/100Hz - 1000Hz (50Hz step) | 100Hz    |
|               |           | LCUT SLOPE       | 6dB/oct / 18dB/oct             | 6dB/oct  |
|               |           | HCUT FREQ        | 700Hz - 4000Hz (50Hz step)/OFF | 3000Hz   |
|               |           | HCUT SLOPE       | 6dB/oct / 18dB/oct             | 6dB/oct  |
|               | MODE AM   | LCUT FREQ        | OFF/100Hz - 1000Hz (50Hz step) | OFF      |
|               |           | LCUT SLOPE       | 6dB/oct / 18dB/oct             | 6dB/oct  |
|               |           | HCUT FREQ        | 700Hz - 4000Hz (50Hz step)/OFF | OFF      |
|               |           | HCUT SLOPE       | 6dB/oct / 18dB/oct             | 6dB/oct  |
|               | MODE FM   | LCUT FREQ        | OFF/100Hz - 1000Hz (50Hz step) | 300Hz    |
|               |           | LCUT SLOPE       | 6dB/oct / 18dB/oct             | 18dB/oct |
|               |           | HCUT FREQ        | 700Hz - 4000Hz (50Hz step)/OFF | 3000Hz   |
|               |           | HCUT SLOPE       | 6dB/oct / 18dB/oct             | 18dB/oct |
|               | MODE DATA | LCUT FREQ        | OFF/100Hz - 1000Hz (50Hz step) | 100Hz    |
|               |           | LCUT SLOPE       | 6dB/oct / 18dB/oct             | 18dB/oct |
|               |           | HCUT FREQ        | 700Hz - 4000Hz (50Hz step)/OFF | 3200Hz   |
|               |           | HCUT SLOPE       | 6dB/oct / 18dB/oct             | 18dB/oct |
|               | MODE RTTY | LCUT FREQ        | OFF/100Hz - 1000Hz (50Hz step) | 300Hz    |
|               |           | LCUT SLOPE       | 6dB/oct / 18dB/oct             | 18dB/oct |
|               |           | HCUT FREQ        | 700Hz - 4000Hz (50Hz step)/OFF | 3000Hz   |
|               |           | HCUT SLOPE       | 6dB/oct / 18dB/oct             | 18dB/oct |
| CW SETTING    | MODE CW   | LCUT FREQ        | OFF/100Hz - 1000Hz (50Hz step) | 250Hz    |
|               |           | LCUT SLOPE       | 6dB/oct / 18dB/oct             | 18dB/oct |
|               |           | HCUT FREQ        | 700Hz - 4000Hz (50Hz step)/OFF | 1200Hz   |
|               |           | HCUT SLOPE       | 6dB/oct / 18dB/oct             | 18dB/oct |

## Change the sound quality of the received audio

You can change each of the high, mid, and low frequencies of the received audio to your liking. It can be set for each mode.

1. Press and hold the **[FUNC]** knob.
2. Select **[CW SETTING]** for CW mode and **[RADIO SETTING]** for other modes.
3. Select the Mode and Menu Item you want to set (see table below).
4. Rotate the **[FUNC]** knob, or touch "<" or ">" on either side of the value to adjust the receiver audio response as desired.
5. Press the **[FUNC]** knob, or wait for about 3 seconds to save the setting.
6. Press the **[BACK]** key several times to return to normal operation.



| Menu Item     |                                                          |                                                             | Available Values | Default |
|---------------|----------------------------------------------------------|-------------------------------------------------------------|------------------|---------|
| RADIO SETTING | MODE SSB<br>MODE AM<br>MODE FM<br>MODE DATA<br>MODE RTTY | High audio ranges setting<br>→ <b>AF TREBLE GAIN</b>        | -20 - 10         | 0       |
|               |                                                          | Middle audio ranges setting<br>→ <b>AF MIDDLE TONE GAIN</b> |                  |         |
|               |                                                          | Low audio ranges setting<br>→ <b>AF BASS GAIN</b>           |                  |         |
| CW SETTING    | MODE CW                                                  | High audio ranges setting<br>→ <b>AF TREBLE GAIN</b>        | -20 - 10         | 0       |
|               |                                                          | Middle audio ranges setting<br>→ <b>AF MIDDLE TONE GAIN</b> |                  |         |
|               |                                                          | Low audio ranges setting<br>→ <b>AF BASS GAIN</b>           |                  |         |

## Digital Group ID (DG-ID) feature

Digital Group ID (DG-ID) function allows using the two-digit ID numbers to communicate only with specific group members. The desired DG-ID number from 00 to 99 is set in advance by all the group members. This ID number may be set separately for transmit and receive, when the same ID number is set for both transmit and receive, only group members with the same ID number will be heard. This feature may be used to limit communication only to group members that have the same DG-ID number. The GM function may also be utilized to automatically monitor whether or not group member stations with the same DG-ID number are operating within communication range.

The DG-ID number 00 detects signals with all ID numbers. Normally setting the ID number to "00" for both transmit and receive will permit reception of the signals from all other stations using the digital C4FM mode, regardless of the transmit DG-ID number settings of the other stations.

Also note that when the receive DG-ID number of the transceiver is set to a DG-ID number other than "00", received signals that do not have the same DG-ID number may not be heard.

When accessing a C4FM digital repeater controlled by a DG-ID number, set the transmit DG-ID number of the FTX-1 to that of the repeater input. Even in that case, if the receive DG-ID number of the FTX-1 is set to "00", all the downlink signals from the repeater may be received.

## Communicating with the DG-ID feature



Digital C4FM mode transceivers compatible with the DG-ID function are required in order to utilize this function.

Setting the transmit and receive DG-ID number to "00" to communicate with all other stations using C4FM digital mode.

### Example: Set the DG-ID number of to "50"

1. Press and hold the **[FUNC]** knob.
2. Touch [DG-ID TX], and then rotate the **[FUNC]** knob to set transmit DG-ID (DG-ID TX) number to "50".
3. Touch [DG-ID RX], and then rotate the **[FUNC]** knob to set receive DG-ID (DG-ID RX) number to "50".



4. Press the **[FUNC]** knob, or wait for about 3 seconds to save the setting.
5. Press the **[BACK]** key several times to return to normal operation.

Tuning to the same frequency and setting the same DG-ID for all the group members will enable communication between the members and exclude other signals.

## Digital Personal ID (DP-ID) feature

### About the Digital Personal ID (DP-ID) feature

When operating in digital C4FM communications, each transceiver is programmed with, and sends its own individual ID information (Radio ID) in each transmission. The DP-ID function and the individual identification information, makes possible group communications between stations that are within communications range. The Digital Personal ID (DP-ID) feature opens the speaker audio only when a signal set to the same DP-ID in the Digital Mode is received, even if each transceiver is set to a different Digital Group ID (DG-ID) number.



To utilize this function, Digital C4FM mode transceivers compatible with the DG-ID function are required.

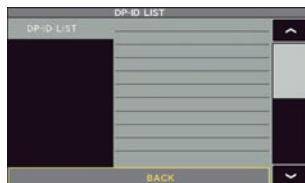
### Registering the DP-ID of other stations



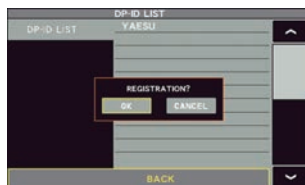
- Once registered, the DP-ID is stored until deleted.
- Register each other's DP-ID with nearby transceivers.
- When setting the DG-ID code to "00", the transceiver will receive signals from all digital C4FM stations. To utilize the DP-ID function, it is necessary to set the receive DG-ID code to a number other than "00".

1. Press and hold the **[FUNC]** knob → **[RADIO SETTING]** → **[DIGITAL]** → **[DP-ID LIST]** → Touch **[DONE]**.

- The DP-ID list is displayed.
- If several DP-IDs are displayed, rotate the **[FUNC]** knob to register the desired DP-ID.



2. A transmission in the digital C4FM mode from another transceiver will register the DP-ID. When a signal from the other station is received, the call sign and "REGISTRATION?" are displayed on the LCD.



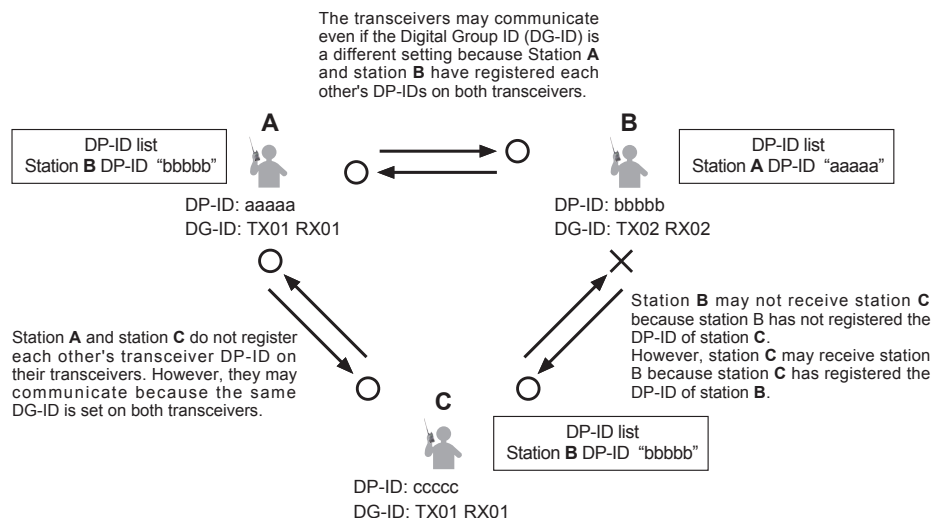
- When a signal from another registered transceiver is received, nothing is displayed on the LCD.
- When a transceiver is previously registered with a different call sign, the DP-ID listing is changed to the newly registered call sign.

3. Touch **[OK]** or press the **[FUNC]** knob to save the setting.
4. Touch display.
  - When registering the DP-ID is complete, the display returns to the DP-ID list screen.
  - If not registering a DP-ID, rotate the **[FUNC]** knob to select **[CANCEL]** then press the **[FUNC]** knob.
  - If registering several DP-IDs, repeat step 2 and 3.

5. Press the **[BACK]** several times to return to normal operation.
  - All the other communicating stations should similarly register the DP-IDs to the DP-ID lists of their transceivers.
  - The DP-ID setting is complete.



To communicate using the DP-ID function, register the DP-ID of each other's transceiver on both transceivers. By registering the DP-ID, users may communicate even if the Digital group ID (DG-ID) is a different setting.



## Deleting a registered DP-ID

1. Press and hold the **[FUNC]** knob → **[RADIO SETTING]** → **[DIGITAL]** → **[DP-ID LIST]** → Touch **[DONE]**.  
 The DP-ID list is displayed.
2. Touch or rotate the **[FUNC]** knob to select the call sign of the other transceiver, then press the **[FUNC]** knob. Confirmation screen "DELETE?" is displayed.
3. Touch **[OK]** or press the **[FUNC]** knob to delete.
  - If not deleting in the DP-ID list, select **[CANCEL]** then press the **[FUNC]** knob.
  - If deleting several DP-IDs, press the **[FUNC]** knob, then repeat step 2 and 3.
4. Press the **[BACK]** several times to return to normal operation.



## Communicating with specified stations in the Analog FM mode

### Selecting the squelch type in the analog FM mode

1. Press and hold the **[FUNC]** knob.
2. Touch or rotate the **[FUNC]** knob to select **[SQL TYPE]**.
3. Rotate the **[FUNC]** knob to select the type of squelch, refer to the table below.
4. Press the **[BACK]** key several times to return to normal operation.



Tone squelch (CTCSS) and DCS functions do not operate in the C4FM digital mode.

| Squelch type          | Description                                                                                                                                                                                                                                                       |
|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>OFF</b>            | Deactivates the CTCSS and DCS functions. Returns to the normal squelch operation in the Analog FM mode.                                                                                                                                                           |
| <b>ENC (TONE ENC)</b> | Activates the CTCSS tone for Analog FM Transmissions. Receives with normal squelch operation.                                                                                                                                                                     |
| <b>TSQ (TONE SQL)</b> | Activates the CTCSS tone squelch function on Analog FM receive.                                                                                                                                                                                                   |
| <b>DCS</b>            | Activates the Digital Code Squelch (DCS) function. The DCS code may be selected from 104 codes (from 023 to 754).                                                                                                                                                 |
| <b>PR FREQ</b>        | Activates the no-communication squelch function for radios. The no-communication signal tone frequencies may be specified within the range of 300 Hz to 3000 Hz in steps of 100 Hz.                                                                               |
| <b>REV TONE</b>       | Activates the reverse tone function. Used to monitor communications based on the squelch control system. When a signal contains the designated tone, the squelch is not opened, and when the tone signal disappears, the squelch opens, and communication starts. |



- The squelch type may be set for each frequency band (BAND).
- The CTCSS and DCS squelch settings are also active during scanning. If scanning is performed with the CTCSS and DCS squelch function activated, scanning stops only when a signal containing the specified CTCSS tone or DCS code is received.

## Tone squelch feature

The tone squelch opens the speaker audio only when a signal containing the specified CTCSS tone is received. The receiver will be quiet while waiting for a call from a specific station.



The Tone squelch feature only works in Analog FM mode or AMS function.

## Setting CTCSS Tone frequency

The tone may be selected from 50 frequencies (67.0 Hz to 254.1 Hz).

1. Press and hold the **[FUNC]** knob.
2. Touch **[SQL TYPE]**.
3. Rotate the **[FUNC]** knob to select **[TSQ]**.
4. Touch **[TONE FREQ]**.
5. Rotate the **[FUNC]** knob to select the tone frequency.
6. Press the **[BACK]** key several times to return to normal operation.



- The tone frequency setting is common with the squelch types as follows:  
“ENC (TONE ENC)”, “TSQ (TONE SQL)”, “REV TONE (REVERSE TONE)”
- The default setting is “100.0 Hz”

## Digital Code Squelch (DCS) feature

The Digital Code Squelch opens the speaker audio only when a signal containing the specified DCS code is received.



The DCS feature only works in Analog FM mode or AMS function.

## Setting the DCS CODE

The DCS code may be selected from 104 types (from 023 to 754).

1. Press and hold the **[FUNC]** knob.
2. Touch **[DCS]**.
3. Rotate the **[FUNC]** knob to select the DCS code.
4. Press the **[BACK]** key several times to return to normal operation.



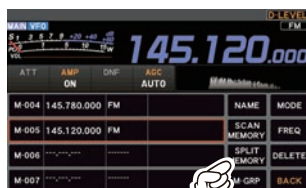
- The DCS code set in the above operation is common for all transmissions with a DCS Code (“DCS”, “D-ENC (DCS ENC)”, “T-DCS (TONE DCS)”, “D-TSQ (DCS TSQ)”).
- The default DCS code is “023”.

## Convenient memory function

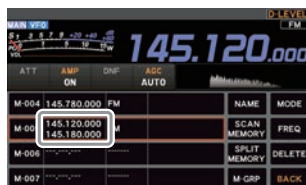
### Split Memory

Separate frequencies for transmit and receive can be registered for each memory channel.

1. Set the receive frequency, mode, and status, as desired.
2. Press and hold the **[V/M (MW)]** key.  
The memory channel list will be displayed.
3. From the channel list, touch and select the desired memory channel. Alternately, the memory channel may be selected by rotating the **[FUNC]** knob.
4. Press and hold the **[V/M (MW)]** key to store the receive frequency and other data into the selected memory channel.
5. Touch **[SPLIT MEMORY]**, to display the frequency input screen.



6. Enter the transmit frequency using the numeric keys.
7. Touch **[ENT]** to store the transmit frequency.



When a split-frequency memory channel is recalled, “**±**” is displayed on the LCD.



## Programmable Memory Channel Scan (PMS)

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### Registering to the Programmable Memory Channels

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50 sets of PMS memory channels (P-01L/P-01U to P-50L/P-50U) are available.

- Register the lower and upper frequencies of the frequency range in a pair of Programmable Memory Channels.

**P-nnL:** Lower limit memory channel

**P-nnU:** Upper limit memory channel

- PMS memory channels appear after the “last” memory channel (“M-999”).
- For more details on registering frequencies to the memory channels, see “Memory Storage” in the Operating Manual.



- Make sure to use the corresponding numbers for the lower and upper limit memory channels.
  - Set the Programmable Memory scanning (PMS) lower and upper limits as follows:
    - The lower and upper limit memory channels must be within the same frequency band.
    - The lower and upper limit memory channels must not be registered in reverse.
- 

### Performing Programmable Memory Channel Scan

---

The programmable memory channel scan allows scanning a specified frequency range within the same frequency band.

1. Press the **[V/M (MW)]** key to enter the memory mode.
2. Recall the PMS memory channel to which the lower limit (P-nnL) or upper limit (P-nnU) of the frequency band is registered.
3. Press and hold the **[M►V (MT)]** key.
4. Press and hold the **[UP]** or **[DWN]** switch of the microphone.
  - Programmable memory channel scanning starts.
  - If the **MAIN DIAL/SUB DIAL** knob is rotated while scanning is in progress, the scanning will continue up or down in frequency according to the direction of the **MAIN DIAL/SUB DIAL** knob rotation.
5. Press the **PTT** switch, to cancel the scanning.

In this state (displayed as “**PMS**” at the upper of the display), the frequency can be changed only in the range stored by the lower and upper PMS memories, by rotating the **MAIN DIAL/SUB DIAL** knob.

#### ● Disable the PMS function

1. Press the **[V/M (MW)]** key.

Returns to the normal memory mode.

## Receiving Weather Broadcast Channels

This transceiver includes the preprogrammed VHF Weather Broadcast Station Memory Channel Bank, and can receive the broadcast by recalling a desired channel.

The following channels are stored in the transceiver weather station memory bank:

| Channel No. | Frequency  |
|-------------|------------|
| WX-01       | 162.550MHz |
| WX-02       | 162.400MHz |
| WX-03       | 162.475MHz |
| WX-04       | 162.425MHz |
| WX-05       | 162.450MHz |

| Channel No. | Frequency  |
|-------------|------------|
| WX-06       | 162.500MHz |
| WX-07       | 162.525MHz |
| WX-08       | 161.650MHz |
| WX-09       | 161.775MHz |
| WX-10       | 163.275MHz |

### Recalling the weather channels

#### Rotate the MAIN DIAL/SUB DIAL knob to select an weather channel

1. Press the [V/M **MW**] key.
2. Rotate the **MAIN DIAL/SUB DIAL** knob, to select the desired weather channel.

#### Touch the display to select an weather channel

1. Press and hold the [V/M **MW**] key.  
The memory channel list will be displayed.
2. From the channel list, touch and select the desired weather channel.  
Alternately, the memory channel may be selected by rotating the [**FUNC**] knob.
3. Press the [**FUNC**] knob.

## DTMF Operation

DTMF (Dual Tone Multi Frequencies) are the tone signals sent to make telephone calls, or control repeaters and network links. Up to 9 registers of 16-digit DTMF tone codes can be stored as telephone numbers to make calls through the public telephone network using a phone patch or to connect through the WIRES-X analog node station.

### Registering the DTMF memory

1. Press and hold the **[FUNC]** knob.
2. Select **[RADIO SETTING]** → **[MODE FM]**.
3. Rotate the **[FUNC]** knob to select the desired channel (DTMF MEMORY1 to 9) to register the DTMF code, then press the **[FUNC]** knob.

The DTMF memory channel input screen is displayed.

4. Touch the numeric keypad of the screen to input the DTMF code up to a maximum of 16 digits.
5. Touch **[ENT]** to save the DTMF code.
6. Press the **[BACK]** key several times to return to normal operation.



### Transmitting DTMF code automatically using DTMF memory

1. Press and hold the **[FUNC]** knob.
2. Touch **[DTMF]** or rotate the **[FUNC]** knob to select **[DTMF]** and then press the **[FUNC]** knob.

The DTMF CODE screen is displayed.

3. Touch or rotate the **[FUNC]** knob to select the desired DTMF memory (1 to 9).
  - The DTMF code registered in the DTMF memory channel is automatically transmitted.
  - The transmission continues until the DTMF code is completed. The transceiver is automatically returned to receive mode.
4. Press the **[BACK]** key several times to return to normal operation.

### Manually Transmitting the DTMF Code

1. Press and hold the **[FUNC]** knob.
2. Touch **[DTMF]** or rotate the **[FUNC]** knob to select **[DTMF]** and then press the **[FUNC]** knob.

The DTMF CODE screen is displayed.

3. While pressing and holding the **PTT** switch, use the numeric keypad of the display and touch each digit of the DTMF code in sequence to transmit the code.

## Using the GPS function



Requires optional "FGPS-5" GPS antenna unit to use the GPS function.

The GPS information can be used as described in the following examples:

**The location can be set to frequently contacted stations. Then display the position, and distance, and other information for each members call sign on the screen.**

→ Refer to the separate "Operating Manual GM Edition"

**Exchange position information and messages through data communications with other stations.**

→ Refer to the separate "Operating Manual APRS Edition"

### Positioning Using GPS

The GPS receiver function is enabled (requires optional "FGPS-5") when the power of the **FTX-1** is turned ON. The satellite search will begin and the "📶" icon will be shown at the top of the display. The **FTX-1** automatically obtains the internal clock setting, and the location information setting from the GPS data.



- It may take several minutes to acquire the GPS satellites.
- When three or more satellites cannot be acquired, the "📶" icon will disappear. In this case, positioning is not possible, and the position information cannot be used.

### About Positioning by GPS

"Positioning" refers to calculation of the current position from the satellite orbit information and radio propagation time. At least 3 satellites must be acquired for successful positioning. If positioning fails, move away from buildings as far as possible away buildings and position the GPS receiver in an area with open sky.

#### ● About errors

The measurement environment may result in positioning errors of several hundred meters. Under favorable conditions, positioning can be performed successfully using only three satellites. However, under the following poor conditions, the positioning accuracy can decrease, or positioning can fail:

- Between tall buildings
- Narrow paths between buildings
- Indoors or near large buildings
- Between trees such as in forests or woods
- Under elevated roads or high voltage power lines
- Inside a tunnel or underground
- Through heat reflective glass
- Areas with strong magnetic fields

#### ● When not in use for a long time

When using the GPS functions for the first time after purchase, or when it has been unused in a while, a few minutes may be required to acquire the satellites. Also, if the GPS function has been turned OFF for several hours, a few minutes may be required to search for satellites.

## Functions used as needed

### VOX Operation

The VOX (Voice Operated Transmit) system may be used for hands-free activation of the transmitter, by the voice input to the microphone or Bluetooth Head-set.

#### Setting VOX Function

1. Press and hold the **[FUNC]** knob.
2. Select [OPERATION SETTING] → [TX GNRL].
3. Rotate the **[FUNC]** knob to select [VOX SELECT].
4. Rotate the **[FUNC]** knob, or touch "<" or ">" on either side of the value to select "MIC" or "Bluetooth".

**MIC:** The sound is automatically transmitted by voice from the connected microphone.

**Bluetooth:** The sound is automatically transmitted by voice from the connected Bluetooth headset.

5. Press the **[FUNC]** knob, or wait for about 3 seconds to save the setting.
6. Press the **[BACK]** key several times to return to normal operation.
7. Press and hold the **[FUNC]** knob.
8. Touch [VOX].
9. While the VOX function is activated, the "**VOX**" will be displayed.  
When VOX function is activated, the sound is automatically transmitted by voice from the connected Microphone or Bluetooth headset.

#### Disable the VOX Function

To cancel VOX and return to PTT operation, repeat steps 7 and 8 above.

#### Set the VOX Gain

The VOX Gain may be adjusted to prevent accidental transmitter activation in a noisy environment.

1. Press and hold the **[FUNC]** knob.
2. Touch [VOX GAIN].
3. While speaking into the microphone or Bluetooth head-set, rotate the **[FUNC]** knob, or touch "<" or ">" on either side of the value to the point where the transmitter is quickly activated by your voice, without background noise causing the transmitter to activate.
4. Press the **[FUNC]** knob, or wait for about 3 seconds to save the setting.
5. Press the **[BACK]** key several times to return to normal operation.

#### Set the VOX (Voice Operated Transmit) delay time

During transmissions using the VOX (Voice Operated Transmit) function, set the time to return to receive when speaking is paused:

1. Press and hold the **[FUNC]** knob.
2. Touch [VOX DELAY].
3. Rotate the **[FUNC]** knob to select the delay time (the transmit-receive delay after the cessation of speech).  
30ms / 50ms / 100ms to 3000ms  
Factory default value: "500ms".
4. Press the **[FUNC]** knob, or wait for about 3 seconds to save the setting.
5. Press the **[BACK]** key several times to return to normal operation.

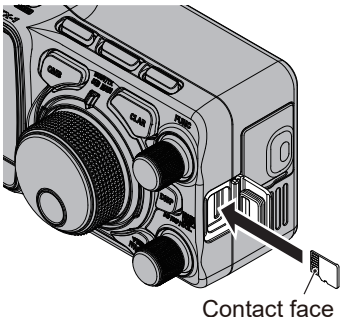
# Screen capture

The display on the TFT screen may be saved on the microSD card.



When performing screen capture, a commercially available microSD card is necessary.

1. Turn OFF the transceiver.
2. Insert the microSD card into the SD card slot, with the contact face on the front, until a click sound is heard.



3. Display the screen that is to be saved.
4. Hold down the [S-DX] key until “SCREEN SHOT” appears on the screen.  
Screen data is saved to the microSD card.



Data saved on the microSD card can be displayed on a personal computer or similar viewer.

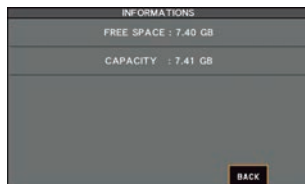
|                       |                                                                                                                                                                                              |
|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Data form             | bmp (Bitmap format)                                                                                                                                                                          |
| Image size            | 800×480                                                                                                                                                                                      |
| File Name             | yyyymmdd_hhmmss.bmp<br>The captured date and time will be the file name.<br>y (year), m (month), d (day), h (hour), m (minute), s (second)                                                   |
| Data storage location | “Capture” folder<br>Folder structure in microSD card<br>FTX-1 <ul style="list-style-type: none"><li>— Capture</li><li>— MemList</li><li>— Menu</li><li>— PlayList</li><li>— QSOLog</li></ul> |

## Display the SD Card Information

The memory free space of the microSD card may be checked:

1. Press and hold the **[FUNC]** knob.
2. Select **[EXTENSION SETTING]** → **[SD CARD]**.
3. Touch “DONE” of the **[INFORMATIONS]** item.

The capacity and free space of the microSD card are displayed.



4. Touch **[BACK]** to return to the “EXTENSION SETTING” menu screen.
5. Press the **[BACK]** key several times to return to normal operation.

## Memory Operation on “HOME” Channel Memories

Five special one-touch “HOME” channels are available, for special frequencies you use often. Special “Home” channels are available for HF (any frequency between 1.8 and 29.7 MHz), 50 MHz, AIR band, 144 MHz, and 430 MHz.

### Recalling the Home Channel

1. Press and hold the **[FUNC]** knob.
2. Touch **[HOME]** or rotate the **[FUNC]** knob to select **[HOME]** and then press the **[FUNC]** knob.

The home channel frequency will be shown in the display.

In the default setting, the Home channel frequencies of each band are set as follows.

**HF band:** 29.600MHz

**50MHz band:** 51.525MHz

**AIR band:** 118.000MHz

**144MHz band:** 146.520MHz

**430MHz band:** 446.000MHz

### Changing the Frequency of the Home Channel

The default frequency setting of the home channel when shipped from the factory can be changed.

1. Set the desired frequency.
2. Press and hold the **[V/M **MW**]** key.  
The memory channel list will be displayed.
3. Rotate the **[FUNC]** knob to select “HOME”.
4. Press and hold the **[V/M **MW**]** key to store the frequency and other data into the HOME channel.
5. Touch **[BACK]**, the memory is stored and the screen returns to normal.

## Screen Saver

A Screen saver, to prevent burning of the TFT screen will operate after a set time, if no transceiver function is operated.

1. Press and hold the **[FUNC]** knob.
2. Touch [DISPLAY SETTING] or rotate the **[FUNC]** knob to select [DISPLAY SETTING] and then press the **[FUNC]** knob.
3. Touch [SCREEN SAVER] / [SCREEN SAVER(BAT)] or rotate the **[FUNC]** knob to select [SCREEN SAVER] / [SCREEN SAVER(BAT)] and then press the **[FUNC]** knob.
  - Set to [SCREEN SAVER(BAT)] when using the SBR-52LI for operation.
4. Rotate the **[FUNC]** knob, or touch "<" or ">" on either side of the value to select the time until the screen saver is employed.
5. Press the **[FUNC]** knob, or wait for about 3 seconds to save the setting.
6. Press the [BACK] key several times to return to normal operation.

## Inputting the Call Sign

Registered call signs names, and characters can be displayed on the opening screen when the power is turned ON.

1. Press and hold the **[FUNC]** knob.
2. Touch [DISPLAY SETTING] or rotate the **[FUNC]** knob to select [DISPLAY SETTING] and then press the **[FUNC]** knob.
3. Touch [MY CALL] or rotate the **[FUNC]** knob to select [MY CALL] and then press the **[FUNC]** knob.
4. Touch a character key.
  - The touched character will be displayed at the top of the screen. Enter each character of your call sign.
  - Up to 10 characters (letters, numbers, and symbols) can be entered.
5. Touch [ENT] to save the new setting and exit to "DISPLAY SETTING" menu screen.
6. Press the [BACK] key several times to return to normal operation.

## Updating the transceiver firmware

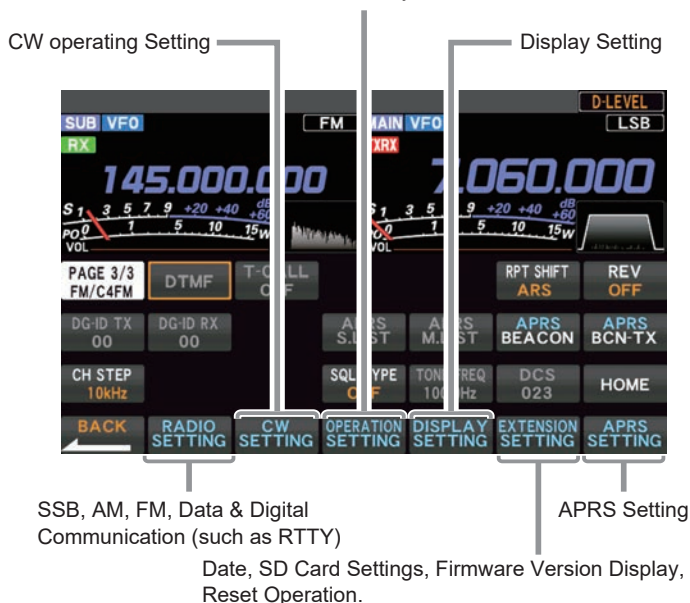
When updated firmware is available, the transceiver can be updated by connecting it to a personal computer. Download the latest version of the firmware and the firmware installation manual from the YAESU website.

## Setting Menu

The Setting Menu permits configuring the various functions to accommodate individual operating needs and preferences.

### Using the Menu

Comprehensive settings such as: Transmit & Receive, Interference Reduction, Memory, Scan, etc.



1. Press and hold the **[FUNC]** knob.  
The function Menu screen will be displayed.
2. Touch the category item that is to be set (see above).  
Or rotate the **[FUNC]** knob to select the category item in the function Menu, then press the **[FUNC]** knob.
3. Rotate the **[FUNC]** knob to select the desired item, then touch the item, or rotate the **[FUNC]** knob to select the desired item, then press the **[FUNC]** knob.
4. Rotate the **[FUNC]** knob, or touch "<" or ">" on either side of the value setting that is to be changed.
5. Press the **[FUNC]** knob, or wait for about 3 seconds to save the setting.
6. Press the **[BACK]** key several times to return to normal operation.

## Tables of Setup Menu Operations

| Menu Function        |                     | Available Settings (Default: Bold)                                                                                                                                     |
|----------------------|---------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>RADIO SETTING</b> |                     |                                                                                                                                                                        |
| MODE SSB             | AF TREBLE GAIN      | -20 - <b>0</b> - 10                                                                                                                                                    |
|                      | AF MIDDLE TONE GAIN | -20 - <b>0</b> - 10                                                                                                                                                    |
|                      | AF BASS GAIN        | -20 - <b>0</b> - 10                                                                                                                                                    |
|                      | AGC FAST DELAY      | 20 - <b>300</b> - 4000 (20msec/step)                                                                                                                                   |
|                      | AGC MID DELAY       | 20 - <b>1000</b> - 4000 (20msec/step)                                                                                                                                  |
|                      | AGC SLOW DELAY      | 20 - <b>3000</b> - 4000 (20msec/step)                                                                                                                                  |
|                      | LCUT FREQ           | OFF / <b>100</b> - 1000 (50Hz/step)                                                                                                                                    |
|                      | LCUT SLOPE          | <b>6dB/oct</b> / 18dB/oct                                                                                                                                              |
|                      | HCUT FREQ           | 700 - <b>3000</b> - 4000 (50Hz/step) / OFF                                                                                                                             |
|                      | HCUT SLOPE          | <b>6dB/oct</b> / 18dB/oct                                                                                                                                              |
|                      | USB OUT LEVEL       | 0 - <b>50</b> - 100                                                                                                                                                    |
|                      | TX BPF SEL          | 50-3050 / <b>100-2900</b> / 200-2800 / 300-2700 / 400-2600                                                                                                             |
|                      | MOD SOURCE          | MIC / USB / Bluetooth / <b>AUTO</b>                                                                                                                                    |
|                      | USB MOD GAIN        | 0 - <b>50</b> - 100                                                                                                                                                    |
|                      | RPTT SELECT         | <b>OFF</b> / RTS / DTR                                                                                                                                                 |
|                      | NAR WIDTH           | 300 / 400 / 600 / 850 / 1100 / 1200 / <b>1500</b> / 1650 / 1800 / 1950 / 2100 / 2250 / 2400 / 2450 / 2500 / 2600 / 2700 / 2800 / 2900 / 3000 / 3200 / 3500 / 4000 (Hz) |
| MODE AM              | CW AUTO MODE        | <b>OFF</b> / 50M / ON                                                                                                                                                  |
|                      | AF TREBLE GAIN      | -20 - <b>0</b> - 10                                                                                                                                                    |
|                      | AF MIDDLE TONE GAIN | -20 - <b>0</b> - 10                                                                                                                                                    |
|                      | AF BASS GAIN        | -20 - <b>0</b> - 10                                                                                                                                                    |
|                      | AGC FAST DELAY      | 20 - <b>1000</b> - 4000 (20msec/step)                                                                                                                                  |
|                      | AGC MID DELAY       | 20 - <b>2000</b> - 4000 (20msec/step)                                                                                                                                  |
|                      | AGC SLOW DELAY      | 20 - <b>4000</b> (20msec/step)                                                                                                                                         |
|                      | LCUT FREQ           | <b>OFF</b> / 100 - 1000 (50Hz/step)                                                                                                                                    |
|                      | LCUT SLOPE          | <b>6dB/oct</b> / 18dB/oct                                                                                                                                              |
|                      | HCUT FREQ           | 700 - 4000 (50Hz/step) / <b>OFF</b>                                                                                                                                    |
|                      | HCUT SLOPE          | <b>6dB/oct</b> / 18dB/oct                                                                                                                                              |
|                      | USB OUT LEVEL       | 0 - <b>50</b> - 100                                                                                                                                                    |
|                      | TX BPF SEL          | <b>50-3050</b> / 100-2900 / 200-2800 / 300-2700 / 400-2600                                                                                                             |
|                      | MOD SOURCE          | MIC / USB / Bluetooth / <b>AUTO</b>                                                                                                                                    |
|                      | USB MOD GAIN        | 0 - <b>50</b> - 100                                                                                                                                                    |
|                      | RPTT SELECT         | <b>OFF</b> / RTS / DTR                                                                                                                                                 |
| MODE FM              | AF TREBLE GAIN      | -20 - <b>0</b> - 10                                                                                                                                                    |
|                      | AF MIDDLE TONE GAIN | -20 - <b>0</b> - 10                                                                                                                                                    |
|                      | AF BASS GAIN        | -20 - <b>0</b> - 10                                                                                                                                                    |
|                      | AGC FAST DELAY      | <b>20</b> - 4000 (msec) (20msec/step)                                                                                                                                  |
|                      | AGC MID DELAY       | 20 - <b>240</b> - 4000 (msec) (20msec/step)                                                                                                                            |
|                      | AGC SLOW DELAY      | 20 - <b>500</b> - 4000 (msec) (20msec/step)                                                                                                                            |
|                      | LCUT FREQ           | OFF / 100 - <b>300</b> - 1000 (Hz) (50Hz/step)                                                                                                                         |
|                      | LCUT SLOPE          | 6dB/oct / <b>18dB/oct</b>                                                                                                                                              |

| Menu Function |                      | Available Settings (Default: Bold)                                                                                                              |
|---------------|----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
|               | HCUT FREQ            | 700 - <b>3000</b> - 4000 (Hz) (50Hz/step) /OFF                                                                                                  |
|               | HCUT SLOPE           | 6dB/oct / <b>18dB/oct</b>                                                                                                                       |
|               | USB OUT LEVEL        | 0 - <b>50</b> - 100                                                                                                                             |
|               | MOD SOURCE           | MIC / USB / Bluetooth / <b>AUTO</b>                                                                                                             |
|               | USB MOD GAIN         | 0 - <b>50</b> - 100                                                                                                                             |
|               | RPTT SELECT          | <b>OFF</b> / RTS / DTR                                                                                                                          |
|               | RPT SHIFT            | - / SIMP / + / <b>ARS</b>                                                                                                                       |
|               | RPT SFT FREQ(28MHz)  | 0 - <b>100</b> - 1000 (kHz) (10kHz/step)                                                                                                        |
|               | RPT SFT FREQ(50MHz)  | 0 - <b>500</b> - 4000 (kHz) (10kHz/step)                                                                                                        |
|               | RPT SFT FREQ(144MHz) | <b>0.00</b> - 100 (MHz) (50kHz/step)                                                                                                            |
|               | RPT SFT FREQ(430MHz) | 0.00 - <b>5.00</b> - 100 (MHz) (50kHz/step)                                                                                                     |
|               | SQL TYPE             | <b>OFF</b> / ENC / TSQ / DCS / PR FREQ / REV TONE                                                                                               |
|               | TONE FREQ            | 67.0 - <b>100.0</b> - 254.1 (Hz)                                                                                                                |
|               | DCS CODE             | <b>023</b> - 754                                                                                                                                |
|               | DCS RX REVERS        | <b>NORMAL</b> / REVERS / BOTH                                                                                                                   |
|               | DCS TX REVERS        | <b>NORMAL</b> / REVERS                                                                                                                          |
|               | PR FREQ              | 300 - <b>1600</b> - 3000 (Hz) (100Hz/step)                                                                                                      |
|               | DTMF DELAY           | 50 / 250 / <b>450</b> / 750 / 1000 (ms)                                                                                                         |
|               | DTMF SPEED           | <b>50</b> / 100 (ms)                                                                                                                            |
|               | DTMF MEMORY1 - 9     | -                                                                                                                                               |
| MODE DATA     | AF TREBLE GAIN       | -20 - <b>0</b> - 10                                                                                                                             |
|               | AF MIDDLE TONE GAIN  | -20 - <b>0</b> - 10                                                                                                                             |
|               | AF BASS GAIN         | -20 - <b>0</b> - 10                                                                                                                             |
|               | AGC FAST DELAY       | 20 - <b>160</b> - 4000 (20msec/step)                                                                                                            |
|               | AGC MID DELAY        | 20 - <b>500</b> - 4000 (20msec/step)                                                                                                            |
|               | AGC SLOW DELAY       | 20 - <b>1500</b> - 4000 (20msec/step)                                                                                                           |
|               | LCUT FREQ            | OFF / <b>100</b> - 1000 (50Hz/step)                                                                                                             |
|               | LCUT SLOPE           | 6dB/oct / <b>18dB/oct</b>                                                                                                                       |
|               | HCUT FREQ            | 700 - <b>3200</b> - 4000 (50Hz/step) /OFF                                                                                                       |
|               | HCUT SLOPE           | 6dB/oct / <b>18dB/oct</b>                                                                                                                       |
|               | USB OUT LEVEL        | 0 - <b>50</b> - 100                                                                                                                             |
|               | TX BPF SEL           | <b>50-3050</b> / 100-2900 / 200-2800 / 300-2700 / 400-2600                                                                                      |
|               | MOD SOURCE           | MIC / USB / Bluetooth / <b>AUTO</b>                                                                                                             |
|               | USB MOD GAIN         | 0 - <b>50</b> - 100                                                                                                                             |
|               | RPTT SELECT          | <b>OFF</b> / RTS / DTR                                                                                                                          |
|               | NAR WIDTH            | 50 / 100 / 150 / 200 / 250 / <b>300</b> / 350 / 400 / 450 / 500 / 600 / 800 / 1200 / 1400 / 1700 / 2000 / 2400 / 3000 / 3200 / 3500 / 4000 (Hz) |
|               | PSK TONE             | <b>1000</b> / 1500 / 2000 (Hz)                                                                                                                  |
|               | DATA SHIFT (SSB)     | 0 - <b>1500</b> - 3000 (10Hz/step)                                                                                                              |
| MODE RTTY     | AF TREBLE GAIN       | -20 - <b>0</b> - 10                                                                                                                             |
|               | AF MIDDLE TONE GAIN  | -20 - <b>0</b> - 10                                                                                                                             |
|               | AF BASS GAIN         | -20 - <b>0</b> - 10                                                                                                                             |
|               | AGC FAST DELAY       | 20 - <b>160</b> - 4000 (20msec/step)                                                                                                            |
|               | AGC MID DELAY        | 20 - <b>500</b> - 4000 (20msec/step)                                                                                                            |

| Menu Function |                  | Available Settings (Default: Bold)                                                                                                              |
|---------------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
|               | AGC SLOW DELAY   | 20 - <b>1500</b> - 4000 (20msec/step)                                                                                                           |
|               | LCUT FREQ        | OFF / 100Hz - <b>300Hz</b> - 1000Hz (50Hz/step)                                                                                                 |
|               | LCUT SLOPE       | 6dB/oct / <b>18dB/oct</b>                                                                                                                       |
|               | HCUT FREQ        | 700Hz - <b>3000Hz</b> - 4000Hz (50Hz/step) / OFF                                                                                                |
|               | HCUT SLOPE       | 6dB/oct / <b>18dB/oct</b>                                                                                                                       |
|               | USB OUT LEVEL    | 0 - <b>50</b> - 100                                                                                                                             |
|               | RPTT SELECT      | <b>OFF</b> / RTS / DTR                                                                                                                          |
|               | NAR WIDTH        | 50 / 100 / 150 / 200 / 250 / <b>300</b> / 350 / 400 / 450 / 500 / 600 / 800 / 1200 / 1400 / 1700 / 2000 / 2400 / 3000 / 3200 / 3500 / 4000 (Hz) |
|               | MARK FREQUENCY   | 1275 / <b>2125</b> (Hz)                                                                                                                         |
|               | SHIFT FREQUENCY  | <b>170</b> / 200 / 425 / 850 (Hz)                                                                                                               |
|               | POLARITY TX      | <b>NOR</b> / REV                                                                                                                                |
| DIGITAL       | DIGITAL POPUP    | OFF / 2 - <b>10</b> - 60 / CONTINUE                                                                                                             |
|               | LOCATION SERVICE | OFF / <b>ON</b>                                                                                                                                 |
|               | STANDBY BEEP     | OFF / <b>ON</b>                                                                                                                                 |
|               | DP-ID LIST       | —                                                                                                                                               |
|               | RADIO ID         | — (cannot be edited)                                                                                                                            |

| CW SETTING |                     |                                                                                                                                                 |
|------------|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| MODE CW    | AF TREBLE GAIN      | -20 - <b>0</b> - 10                                                                                                                             |
|            | AF MIDDLE TONE GAIN | -20 - <b>0</b> - 10                                                                                                                             |
|            | AF BASS GAIN        | -20 - <b>0</b> - 10                                                                                                                             |
|            | AGC FAST DELAY      | 20 - <b>160</b> - 4000 (msec) (20msec/step)                                                                                                     |
|            | AGC MID DELAY       | 20 - <b>500</b> - 4000 (msec) (20msec/step)                                                                                                     |
|            | AGC SLOW DELAY      | 20 - <b>1500</b> - 4000 (msec) (20msec/step)                                                                                                    |
|            | LCUT FREQ           | OFF / 100 - <b>250</b> - 1000 (Hz) (50Hz/step)                                                                                                  |
|            | LCUT SLOPE          | 6dB/oct / <b>18dB/oct</b>                                                                                                                       |
|            | HCUT FREQ           | 700 - <b>1200</b> - 4000 (Hz) (50Hz/step) / OFF                                                                                                 |
|            | HCUT SLOPE          | 6dB/oct / <b>18dB/oct</b>                                                                                                                       |
|            | USB OUT LEVEL       | 0 - <b>50</b> - 100                                                                                                                             |
|            | RPTT SELECT         | <b>OFF</b> /RTS/DTR                                                                                                                             |
|            | NAR WIDTH           | 50 / 100 / 150 / 200 / <b>250</b> / 300 / 350 / 400 / 450 / 500 / 600 / 800 / 1200 / 1400 / 1700 / 2000 / 2400 / 3000 / 3200 / 3500 / 4000 (Hz) |
|            | PC KEYING           | <b>OFF</b> / RTS / DTR                                                                                                                          |
|            | CW BK-IN TYPE       | <b>SEMI</b> / FULL                                                                                                                              |
|            | CW FREQ DISPLAY     | DIRECT FREQ / <b>PITCH OFFSET</b>                                                                                                               |
|            | QSK DELAY TIME      | <b>15</b> / 20 / 25 / 30 (msec)                                                                                                                 |
|            | CW INDICATOR        | OFF / <b>ON</b>                                                                                                                                 |
| KEYER      | KEYER TYPE          | OFF / BUG / ELEKEY-A / <b>ELEKEY-B</b> / ELEKEY-Y / ACS                                                                                         |
|            | KEYER DOT/DASH      | <b>NOR</b> / REV                                                                                                                                |
|            | CW WEIGHT           | 2.5 - <b>3.0</b> - 4.5                                                                                                                          |
|            | NUMBER STYLE        | <b>1290</b> / AUNO / AUNT / A2NO / A2NT / 12NO / 12NT                                                                                           |
|            | CONTEST NUMBER      | <b>1</b> - 9999                                                                                                                                 |
|            | CW MEMORY 1 - 5     | <b>TEXT</b> / MESSAGE                                                                                                                           |

| Menu Function     |                      | Available Settings (Default: Bold)                |
|-------------------|----------------------|---------------------------------------------------|
|                   | REPEAT INTERVAL      | 1 - <b>5</b> - 60 (sec)                           |
| OPERATION SETTING |                      |                                                   |
| GENERAL           | BEEP LEVEL           | 0 - <b>30</b> - 100                               |
|                   | RF/SQL VR            | RF / SQL / <b>AUTO</b>                            |
|                   | TUN/LIN PORT SELECT  | <b>OPTION</b> / BAND DATA / CAT-3 / GPO           |
|                   | TUNER SELECT         | <b>OPTION</b> / ATAS                              |
|                   | CAT-1 RATE           | 4800 / 9600 / 19200 / <b>38400</b> / 115200 (bps) |
|                   | CAT-1 TIME OUT TIMER | <b>10</b> / 100 / 1000 / 3000 (msec)              |
|                   | CAT-1 CAT-3 STOP BIT | <b>1bit</b> / 2bit                                |
|                   | CAT-2 RATE           | <b>4800</b> / 9600 / 19200 / 38400 / 115200 (bps) |
|                   | CAT-2 TIME OUT TIMER | <b>10</b> / 100 / 1000 / 3000 (msec)              |
|                   | CAT-3 RATE           | 4800 / 9600 / 19200 / <b>38400</b> / 115200 (bps) |
|                   | CAT-3 TIME OUT TIMER | <b>10</b> / 100 / 1000 / 3000 (msec)              |
|                   | TX TIME OUT TIMER    | <b>OFF</b> / 1 - 30 (min)                         |
|                   | REF FREQ FINE ADJ    | -25 - <b>0</b> - 25                               |
|                   | CHARGE CONTROL       | OFF / <b>ON</b>                                   |
|                   | SUB BAND MUTE        | <b>OFF</b> / ON                                   |
|                   | SPEAKER SELECT       | Auto / INT / <b>BOTH</b>                          |
|                   | DITHER               | OFF / <b>ON</b>                                   |
| BAND/SCAN         | QMB CH               | <b>5ch</b> / 10ch                                 |
|                   | BAND STACK           | OFF / <b>ON</b>                                   |
|                   | BAND EDGE            | <b>OFF</b> / ON                                   |
|                   | SCAN RESUME          | <b>BUSY</b> / HOLD / 1sec / 3sec / 5sec           |
| RX DSP            | IF NOTCH WIDTH       | NARROW / <b>WIDE</b>                              |
|                   | NB REJECTION         | LOW / <b>MID</b> / HIGH                           |
|                   | NB WIDTH             | NARROW / <b>MEDIUM</b> / WIDE                     |
|                   | APF WIDTH            | NARROW / <b>MEDIUM</b> / WIDE                     |
|                   | CONTOUR LEVEL        | -40 - <b>15</b> - 0 - 20                          |
|                   | CONTOUR WIDTH        | 1 - <b>10</b> - 11                                |
| TX AUDIO          | AMC RELEASE TIME     | FAST / <b>MID</b> / SLOW                          |
|                   | PRMTRC EQ1 FREQ      | <b>OFF</b> / 100 - 700 (100Hz/step)               |
|                   | PRMTRC EQ1 LEVEL     | -20 - 0 - <b>5</b> - 10                           |
|                   | PRMTRC EQ1 BWTH      | 0 - <b>10</b>                                     |
|                   | PRMTRC EQ2 FREQ      | <b>OFF</b> / 700 - 1500 (100Hz/step)              |
|                   | PRMTRC EQ2 LEVEL     | -20 - 0 - <b>5</b> - 10                           |
|                   | PRMTRC EQ2 BWTH      | 0 - <b>10</b>                                     |
|                   | PRMTRC EQ3 FREQ      | <b>OFF</b> / 1500 - 3200 (100Hz/step)             |
|                   | PRMTRC EQ3 LEVEL     | -20 - 0 - <b>5</b> - 10                           |
|                   | PRMTRC EQ3 BWTH      | 0 - <b>10</b>                                     |
|                   | P PRMTRC EQ1 FREQ    | <b>OFF</b> / 100 - 700 (100Hz/step)               |
|                   | P PRMTRC EQ1 LEVEL   | -20 - <b>0</b> - 10                               |
|                   | P PRMTRC EQ1 BWTH    | 0 - <b>2</b> - 10                                 |
|                   | P PRMTRC EQ2 FREQ    | <b>OFF</b> / 700 - 1500 (100Hz/step)              |
|                   | P PRMTRC EQ2 LEVEL   | -20 - <b>0</b> - 10                               |

| Menu Function |                     | Available Settings (Default: Bold)                                                                                                                               |
|---------------|---------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|               | P PRMTRC EQ2 BWTH   | 0 - <b>1</b> - 10                                                                                                                                                |
|               | P PRMTRC EQ3 FREQ   | <b>OFF</b> / 1500 - 3200 (100Hz/step)                                                                                                                            |
|               | P PRMTRC EQ3 LEVEL  | -20 - <b>0</b> - 10                                                                                                                                              |
|               | P PRMTRC EQ3 BWTH   | 0 - <b>1</b> - 10                                                                                                                                                |
| TX GNRL       | MAX POWER(BAT)      | 0.5 - <b>6.0</b> (W)                                                                                                                                             |
|               | QRP MODE            | <b>OFF</b> / ON                                                                                                                                                  |
|               | HF MAX POWER        | 0.5 - <b>10.0</b> (W)                                                                                                                                            |
|               | 50M MAX POWER       | 0.5 - <b>10.0</b> (W)                                                                                                                                            |
|               | 70M MAX POWER       | 0.5 - <b>6.0</b> (W)                                                                                                                                             |
|               | 144M MAX POWER      | 0.5 - <b>10.0</b> (W)                                                                                                                                            |
|               | 430M MAX POWER      | 0.5 - <b>10.0</b> (W)                                                                                                                                            |
|               | AM HF/50 MAX POWER  | 0.5 - <b>2.5</b> (W)                                                                                                                                             |
|               | AM V/U MAX POWER    | 0.5 - <b>2.5</b> (W)                                                                                                                                             |
|               | VOX SELECT          | <b>MIC</b> / USB / BLUETOOTH                                                                                                                                     |
|               | EMERGENCY FREQ TX   | <b>OFF</b> / ON                                                                                                                                                  |
|               | TX INHIBIT          | <b>OFF</b> / ON                                                                                                                                                  |
|               | METER DETECTOR      | <b>AVERAGE</b> / PEAK                                                                                                                                            |
| KEY/DIAL      | SSB/CW DIAL STEP    | 5 / 10 / <b>20</b> (Hz)                                                                                                                                          |
|               | RTTY/PSK DIAL STEP  | 5 / <b>10</b> / 20 (Hz)                                                                                                                                          |
|               | FM DIAL STEP        | 5 / 10 / 20 / <b>Auto</b> (Hz)                                                                                                                                   |
|               | CH STEP             | 1 / 2.5 / 5 / <b>10</b> (kHz)                                                                                                                                    |
|               | AM CH STEP          | 2.5 / <b>5</b> / 9 / 10 / 12.5 / 25 (kHz)                                                                                                                        |
|               | FM CH STEP          | <b>5</b> / 6.25 / 10 / 12.5 / 20 / 25 (kHz)                                                                                                                      |
|               | MAIN STEPS PER REV. | 50 / 100 / <b>200</b>                                                                                                                                            |
|               | MIC P1 - MIC P4     | LOCK / QMB / A/B / V/M / TUNER / VOX/MOX / MODE / ZIN / SPOT / SPLIT / FINE / NAR / NB / DNR / FREQ UP / FREQ DOWN / BAND UP / BAND DOWN / ATT / IPO / DNF / AGC |
|               | MIC UP              | MIC P1: <b>LOCK</b><br>MIC P2: <b>QMB</b><br>MIC P3: <b>BAND UP</b><br>MIC P4: <b>V/M</b>                                                                        |
|               | MIC DOWN            | MIC UP: <b>FREQ UP</b><br>MIC DOWN: <b>FREQ DOWN</b>                                                                                                             |
|               | MIC SCAN            | OFF / <b>ON</b>                                                                                                                                                  |
| OPTION        | TUNER TYPE SEL ANT1 | <b>INT</b> / INT(FAST) / EXT / ATAS                                                                                                                              |
|               | TUNER TYPE SEL ANT2 | <b>INT</b> / INT(FAST) / EXT / ATAS                                                                                                                              |
|               | ANT2 OPERATION      | <b>TRX</b> / TX-ANT1,RX-ANT2 / TRX-ANT1,RX-ANT2 /                                                                                                                |
|               | HF ANT SELECT       | <b>ANT1</b> / ANT2                                                                                                                                               |
|               | HF MAX POWER        | 5 - <b>100</b> (W)                                                                                                                                               |
|               | 50M MAX POWER       | 5 - <b>100</b> (W)                                                                                                                                               |
|               | 70M MAX POWER       | 5 - <b>50</b> (W)                                                                                                                                                |
|               | 144M MAX POWER      | 5 - <b>50</b> (W)                                                                                                                                                |
|               | 430M MAX POWER      | 5 - <b>50</b> (W)                                                                                                                                                |
|               | AM MAX POWER        | 5 - <b>25</b> (W)                                                                                                                                                |
|               | AM V/U MAX POWER    | 5 - <b>13</b> (W)                                                                                                                                                |
|               | GPS                 | <b>OFF</b> / ON                                                                                                                                                  |

| Menu Function |                       | Available Settings (Default: Bold)   |
|---------------|-----------------------|--------------------------------------|
|               | GPS PINNING           | OFF / <b>ON</b>                      |
|               | GPS BAUDRATE          | 4800 / 9600 / 19200 / 38400 / 115200 |
|               | BLUETOOTH             | <b>OFF</b> / ON                      |
|               | BLUETOOTH DEVICE LIST | DISCONNECT / <b>CONNECT</b>          |
|               | BLUETOOTH AUDIO       | FIX / <b>AUTO</b>                    |

| DISPLAY SETTING |                       |                                             |
|-----------------|-----------------------|---------------------------------------------|
| DISPLAY         | MY CALL               | Max 10 characters ( <b>FTX-1</b> )          |
|                 | MY CALL TIME          | OFF / <b>1</b> / 2 / 3 / 4 / 5 (sec)        |
|                 | POP-UP TIME           | FAST / <b>MID</b> / SLOW                    |
|                 | SCREEN SAVER          | OFF / 1 / 2 / 5 / 15 / 30 / <b>60</b> (min) |
|                 | SCREEN SAVER(BAT)     | OFF / 1 / 2 / <b>5</b> / 15 / 30 / 60 (min) |
|                 | SAVER TYPE            | Logo / DIMMER / <b>DISP OFF</b>             |
|                 | AUTO POWER OFF        | <b>OFF</b> / 0.5 - 12 (hour) (0.5hour/step) |
|                 | LED DIMMER            | OFF / 1 - <b>20</b>                         |
| UNIT            | POSITION UNIT         | <b>MM.MM</b> / MM.ss                        |
|                 | DISTANCE UNIT         | km / <b>mile</b>                            |
|                 | SPEED UNIT            | km/h / knot / <b>mph</b>                    |
|                 | ALTITUDE UNIT         | m / <b>ft</b>                               |
|                 | TEMP UNIT             | c / <b>f</b>                                |
|                 | RAIN UNIT             | mm / <b>INCH</b>                            |
|                 | WIND UNIT             | m/s / <b>mph</b>                            |
|                 |                       |                                             |
| SCOPE           | RBW                   | <b>HIGH</b> / MID / LOW                     |
|                 | SCOPE CTR             | FILTER / <b>CARRIER</b>                     |
|                 | 2D DISP SENSITIVITY   | NORMAL / <b>HI</b>                          |
|                 | 3DSS DISP SENSITIVITY | NORMAL / <b>HI</b>                          |
|                 | AVERAGE               | <b>OFF</b> / 2 / 4 / 8                      |
| VFO IND COLOR   | VMI COLOR VFO         | <b>BLUE</b> / GREEN / WHITE / NONE          |
|                 | VMI COLOR MEMORY      | BLUE / GREEN / <b>WHITE</b> / NONE          |
|                 | VMI COLOR CLAR        | <b>RED</b> / NONE                           |

| EXTENSION SETTING |                       |                           |
|-------------------|-----------------------|---------------------------|
| DATE&TIME         | TIME ZONE             | -12.0 - <b>0.0</b> - 14.0 |
|                   | DAY                   | —                         |
|                   | MONTH                 | —                         |
|                   | YEAR                  | —                         |
|                   | HOUR                  | —                         |
|                   | MINUTE                | —                         |
|                   | GPS TIME SET          | <b>AUTO</b> / MANUAL      |
|                   |                       |                           |
| MY POSITION       | MY POSITION           | <b>GPS</b> / MANUAL       |
|                   | MY POSITION LATITUDE  | <b>N 00° 00.00'(00")</b>  |
|                   | MY POSITION LONGITUDE | <b>E 000° 00.00'(00")</b> |
| SD CARD           | MEM LIST LOAD         | —                         |
|                   | MEM LIST SAVE         | —                         |
|                   | MENU LOAD             | —                         |

| Menu Function |                 | Available Settings (Default: Bold) |
|---------------|-----------------|------------------------------------|
|               | MENU SAVE       | –                                  |
|               | INFORMATIONS    | –                                  |
|               | FIRMWARE UPDATE | –                                  |
|               | FORMAT          | –                                  |
| SOFT VERSION  | –               | –                                  |
| CALIBRATION   | CALIBRATION     | –                                  |
| RESET         | MEMORY CLEAR    | –                                  |
|               | MENU CLEAR      | –                                  |
|               | ALL RESET       | –                                  |
| CERTIFICATION | –               | –                                  |

| APRS SETTING |                   |                                                                                                                                 |
|--------------|-------------------|---------------------------------------------------------------------------------------------------------------------------------|
| GENERAL      | MODEM SELECT      | <b>OFF</b> / AUTO / MAIN / SUB                                                                                                  |
|              | MODEM TYPE        | 1200bps / <b>9600bps</b>                                                                                                        |
|              | APRS AF MUTE      | OFF / <b>ON</b>                                                                                                                 |
|              | APRS TX DELAY     | 100 / 200 / <b>300</b> / 400 / 500 / 750 / 1000 (ms)                                                                            |
|              | CALLSIGN (APRS)   | *****_**                                                                                                                        |
|              | APRS DESTINATION  | APYX01 (FIX)                                                                                                                    |
| MSG TEMPLATE | MESSAGE TEXT1     | –                                                                                                                               |
|              | MESSAGE TEXT2     | –                                                                                                                               |
|              | MESSAGE TEXT3     | –                                                                                                                               |
|              | MESSAGE TEXT4     | –                                                                                                                               |
|              | MESSAGE TEXT5     | –                                                                                                                               |
|              | MESSAGE TEXT6     | –                                                                                                                               |
|              | MESSAGE TEXT7     | –                                                                                                                               |
|              | MESSAGE TEXT8     | –                                                                                                                               |
| MY SYMBOL    | MY SYMBOL         | <b>ICON1</b> / ICON2 / ICON3                                                                                                    |
|              | ICON1             | /> ( <b>Car</b> )                                                                                                               |
|              | ICON2             | /R ( <b>REC.Vehicle</b> )                                                                                                       |
|              | ICON3             | /- ( <b>House QTH(VHF)</b> )                                                                                                    |
|              | USER              | <b>YY</b> (Yaesu Radios)                                                                                                        |
| DIGI PATH    | PATH SELECT       | <b>WIDE1-1</b> / WIDE1-1.WIDE2-1                                                                                                |
| BEACON SET.  | BEACON TYPE       | <b>OFF</b> / AUTO / SMART                                                                                                       |
|              | INFO AMBIGUITY    | <b>OFF</b> / 1dig / 2dig / 3dig / 4dig                                                                                          |
|              | INFO SPEED/COURSE | OFF / <b>ON</b>                                                                                                                 |
|              | INFO ALTITUDE     | OFF / <b>ON</b>                                                                                                                 |
|              | POSITION COMMENT  | <b>Off duty</b> / En Route / In Service / Returning / Committed / Special / Priority / Custom 0 to Custom 6 / <b>EMERGENCY!</b> |
|              | EMERGENCY BEACON  | <b>OFF</b> / ON                                                                                                                 |
| AUTO BEACON  | INTERVAL TIME     | 30sec / 1min / 2min / 3min / <b>5min</b> / 10min / 15min / 20min / 30min / 60min                                                |
|              | PROPORTIONAL      | OFF / <b>ON</b>                                                                                                                 |
|              | DECAY             | OFF / <b>ON</b>                                                                                                                 |
|              | AUTO LOW SPEED    | 1mph - <b>5mph</b> - 99mph                                                                                                      |
|              | BEACON DELAY      | 5sec - <b>30sec</b> - 180sec                                                                                                    |

| Menu Function |                    | Available Settings (Default: Bold)         |
|---------------|--------------------|--------------------------------------------|
| SmartBeac.    | SMART LOW SPEED    | 2mph - <b>5mph</b> - 30mph                 |
|               | SMART HIGH SPEED   | 3mph - <b>70mph</b> - 90mph                |
|               | SMART SLOW RATE    | 1min - <b>30min</b> - 100min               |
|               | SMART FAST RATE    | 10sec - <b>120sec</b> - 180sec             |
|               | SMART TURN ANGLE   | 5degree - <b>28degree</b> - 90degree       |
|               | SMART TURN SLOPE   | 1 - <b>26</b> - 255                        |
|               | SMART TURN TIME    | 5sec - <b>30sec</b> - 180sec               |
| BEACON TEXT   | STATUS TEXT SELECT | <b>OFF</b> / TEXT1 to TEXT5                |
|               | TX RATE            | <b>1/1</b> to 1/8                          |
|               | BEACON FREQUENCY   | <b>None</b> / FREQUENCY / FREQ & SQL SHIFT |
|               | STATUS TEXT1       | —                                          |
|               | STATUS TEXT2       | —                                          |
|               | STATUS TEXT3       | —                                          |
|               | STATUS TEXT4       | —                                          |
|               | STATUS TEXT5       | —                                          |
| LIST SETTING  | STATION LIST SORT  | <b>TIME</b> (fix)                          |
| STATION LIST  | Mic-E              | OFF / <b>ON</b>                            |
|               | POSITION           | OFF / <b>ON</b>                            |
|               | WEATHER            | OFF / <b>ON</b>                            |
|               | OBJECT             | OFF / <b>ON</b>                            |
|               | ITEM               | OFF / <b>ON</b>                            |
|               | STATUS             | OFF / <b>ON</b>                            |
|               | OTHER              | <b>OFF</b> / ON                            |
|               | ALTNET             | <b>OFF</b> / ON                            |
| POPUP         | BEACON             | OFF / 3sec / 5sec / <b>10sec</b> / HOLD    |
|               | MESSAGE            | OFF / 3sec / 5sec / <b>10sec</b> / HOLD    |
|               | MY PACKET          | <b>OFF</b> / ON                            |
| RINGER        | TX BEACON          | OFF / <b>ON</b>                            |
|               | RX BEACON          | OFF / <b>ON</b>                            |
|               | TX MESSAGE         | OFF / <b>ON</b>                            |
|               | RX MESSAGE         | OFF / <b>ON</b>                            |
|               | MY PACKET          | OFF / <b>ON</b>                            |
| MSG FIL.      | MESSAGE GROUP1     | ALL*****                                   |
|               | MESSAGE GROUP2     | CQ*****                                    |
|               | MESSAGE GROUP3     | QST*****                                   |
|               | MESSAGE GROUP4     | YAESU****                                  |
|               | MESSAGE GROUP5     | -----                                      |
|               | MESSAGE GROUP6     | -----                                      |
|               | BULLETIN1          | BLN*****                                   |
|               | BULLETIN2          | BLN*                                       |
|               | BULLETIN3          | BLN*                                       |

### RADIO SETTING - MODE SSB -

#### AF TREBLE GAIN

**Function:** Sets the amount of gain in the treble range of the received audio.

Available Values: -20 to +10

Default Setting: 0

**Description:** The amount of gain in the treble range can be set in the range of -20 to +10.

#### AF MIDDLE TONE GAIN

**Function:** Setting the amount of gain in the middle range of the received audio.

Available Values: -20 to +10

Default Setting: 0

**Description:** The amount of gain in the middle range can be set in the range of -20 to +10.

#### AF BASS GAIN

**Function:** Setting the amount of gain in the bass range of the received audio.

Available Values: -20 to +10

Default Setting: 0

**Description:** The amount of gain in the bass range can be set in the range of -20 to +10.

#### AGC FAST DELAY

**Function:** Sets the AGC-FAST DELAY voltage decay characteristics for SSB mode.

Available Values: 20 - 4000msec

Default Setting: 300msec

**Description:** Sets the AGC voltage decay characteristics in 20msec steps after the input signal level becomes lower than the AGC detection level and the HOLD time has expired.

#### AGC MID DELAY

**Function:** Sets the AGC-MID DELAY voltage decay characteristics for SSB mode.

Available Values: 20 - 4000msec

Default Setting: 1000msec

**Description:** Sets the AGC voltage decay characteristics in 20msec steps after the input signal level becomes lower than the AGC detection level and the HOLD time has expired.

## AGC SLOW DELAY

**Function:** Sets the AGC-SLOW DELAY voltage decay characteristics for SSB mode.

Available Values: 20 - 4000msec

Default Setting: 3000msec

**Description:** Sets the AGC voltage decay characteristics in 20msec steps after the input signal level becomes lower than the AGC detection level and the HOLD time has expired.

## LCUT FREQ

**Function:** Sets the low-frequency cutoff audio filter in SSB mode.

Available Values: OFF / 100Hz - 1000Hz

Default Setting: 100Hz

**Description:** The cutoff frequency can be set at 50Hz increments between 100Hz and 1000Hz.

## LCUT SLOPE

**Function:** Sets the slope of the low-frequency cutoff audio filter in SSB mode.

Available Values: 6dB/oct / 18dB/oct

Default Setting: 6dB/oct

## HCUT FREQ

**Function:** Sets the high-frequency cutoff audio filter in SSB mode.

Available Values: 700Hz - 4000Hz / OFF

Default Setting: 3000Hz

**Description:** The cutoff frequency can be set at 50Hz increments between 700Hz and 4000Hz.

## HCUT SLOPE

**Function:** Sets the slope of the high-frequency cutoff audio filter in SSB mode.

Available Values: 6dB/oct / 18dB/oct

Default Setting: 6dB/oct

## USB OUT LEVEL

**Function:** Sets the level of the receive SSB signal output from the USB jack.

Available Values: 0 - 100

Default Setting: 50

## TX BPF SEL

**Function:** Selects the audio passband of the DSP modulator on the SSB mode.

Available Values: 50-3050 / 100-2900 / 200-2800 / 300-2700 / 400-2600 (Hz)

Default Setting: 100-2900 Hz

## MOD SOURCE

**Function:** Selects the transmit audio input jack in the SSB mode.

Available Values: MIC / USB / Bluetooth / AUTO

Default Setting: AUTO

**Description:**

**MIC:** Audio is input from the MIC jack on the field head.

**USB:** Disables the microphone circuit on the field head and inputs audio/data from the USB jack on the field head.

**Bluetooth:** Disables the microphone circuit on the field head and inputs audio/data from the Bluetooth.

**AUTO:** Modulation is automatically selected according to the transmission method.

**PTT:** The MIC jack on the front panel.

**MOX:** The MIC jack on the front panel.

**CAT:** The USB jack on the rear panel.

**RTS:** The USB jack on the rear panel.

**DTR:** The USB jack on the rear panel.

**VOX:** Terminal set with "VOX SELECT".

## USB MOD GAIN

**Function:** Sets the level of the SSB signal input when "MOD SOURCE" is set to "USB".

Available Values: 0 - 100

Default Setting: 50

## RPTT SELECT

**Function:** Sets the PTT control for the SSB transmit signal.

Available Values: OFF / RTS / DTR

Default Setting: OFF

**Description:**

**OFF:** No PTT control.

**RTS:** Controls the SSB transmit signal from the USB virtual COM/RTS ports.

**DTR:** Controls the SSB transmit signal from the USB virtual COM/DTR ports.

## NAR WIDTH

**Function:** Sets the IF BANDWIDTH of the digital filter when the [NAR] key is pressed in LSB/USB mode.

**Available Values:** 300 / 400 / 600 / 850 / 1100 / 1200 / 1500 / 1650 / 1800 / 1950 / 2100 / 2250 / 2400 / 2450 / 2500 / 2600 / 2700 / 2800 / 2900 / 3000 / 3200 / 3500 / 4000 (Hz)

Default Setting: 1500Hz

## CW AUTO MODE

---

**Function:** Enables/disables CW keying while operating on SSB.

Available Values: OFF / 50M (50MHz) / ON

Default Setting: OFF

**Description:**

**OFF:** Disables CW keying while operating on SSB.

**50M:** Enables CW keying while operating SSB on 50 MHz (but not HF).

**ON:** Enables CW keying while operating SSB on all TX bands.

## RADIO SETTING - MODE AM -

### AF TREBLE GAIN

**Function:** Sets the amount of gain in the treble range of the received audio.

Available Values: -20 to +10

Default Setting: 0

**Description:** The amount of gain in the treble range can be set in the range of -20 to +10.

### AF MIDDLE TONE GAIN

**Function:** Setting the amount of gain in the middle range of the received audio.

Available Values: -20 to +10

Default Setting: 0

**Description:** The amount of gain in the middle range can be set in the range of -20 to +10.

### AF BASS GAIN

**Function:** Setting the amount of gain in the bass range of the received audio.

Available Values: -20 to +10

Default Setting: 0

**Description:** The amount of gain in the bass range can be set in the range of -20 to +10.

### AGC FAST DELAY

**Function:** Sets the AGC-FAST DELAY voltage decay characteristics for AM mode.

Available Values: 20 - 4000msec

Default Setting: 1000msec

**Description:** Sets the AGC voltage decay characteristics in 20msec steps after the input signal level becomes lower than the AGC detection level and the HOLD time has expired.

### AGC MID DELAY

**Function:** Sets the AGC-MID DELAY voltage decay characteristics for AM mode.

Available Values: 20 - 4000msec

Default Setting: 2000msec

**Description:** Sets the AGC voltage decay characteristics in 20msec steps after the input signal level becomes lower than the AGC detection level and the HOLD time has expired.

### AGC SLOW DELAY

**Function:** Sets the AGC-SLOW DELAY voltage decay characteristics for AM mode.

Available Values: 20 - 4000msec

Default Setting: 4000msec

**Description:** Sets the AGC voltage decay characteristics in 20msec steps after the input signal level becomes lower than the AGC detection level and the HOLD time has expired.

## LCUT FREQ

---

**Function:** Sets the low-frequency cutoff audio filter in AM mode.

Available Values: OFF / 100Hz - 1000Hz

Default Setting: OFF

**Description:** The cutoff frequency can be set at 50Hz increments between 100Hz and 1000Hz.

## LCUT SLOPE

---

**Function:** Sets the slope of the low-frequency cutoff audio filter in AM mode.

Available Values: 6dB/oct / 18dB/oct

Default Setting: 6dB/oct

## HCUT FREQ

---

**Function:** Sets the high-frequency cutoff audio filter in AM mode.

Available Values: 700Hz - 4000Hz / OFF

Default Setting: OFF

**Description:** The cutoff frequency can be set at 50Hz increments between 700Hz and 4000Hz.

## HCUT SLOPE

---

**Function:** Sets the slope of the high-frequency cutoff audio filter in AM mode.

Available Values: 6dB/oct / 18dB/oct

Default Setting: 6dB/oct

## USB OUT LEVEL

---

**Function:** Sets the level of the receive AM signal output from the USB jack.

Available Values: 0 - 100

Default Setting: 50

## TX BPF SEL

---

**Function:** Selects the audio passband of the DSP modulator on the AM mode.

Available Values: 50-3050 / 100-2900 / 200-2800 / 300-2700 / 400-2600 (Hz)

Default Setting: 50-3050 Hz

## MOD SOURCE

---

**Function:** Selects the transmit audio input jack in the AM mode.

Available Values: MIC / USB / Bluetooth / AUTO

Default Setting: AUTO

**Description:**

**MIC:** Audio is input from the MIC jack on the field head.

**USB:** Disables the microphone circuit on the field head and inputs audio/data from the USB jack on the field head.

**Bluetooth:** Disables the microphone circuit on the field head and inputs audio/data from the Bluetooth.

**AUTO:** Modulation is automatically selected according to the transmission method.

**PTT:** The MIC jack on the front panel.

**MOX:** The MIC jack on the front panel.

**CAT:** The USB jack on the rear panel.

**RTS:** The USB jack on the rear panel.

**DTR:** The USB jack on the rear panel.

**VOX:** Terminal set with "VOX SELECT".

## USB MOD GAIN

---

**Function:** Sets the level of the AM signal input when "MOD SOURCE" is set to "USB".

Available Values: 0 - 100

Default Setting: 50

## RPTT SELECT

---

**Function:** Sets the PTT control for the AM transmit signal.

Available Values: OFF / RTS / DTR

Default Setting: OFF

**Description:**

**OFF:** No PTT control.

**RTS:** Controls the AM transmit signal from the USB virtual COM/RTS ports.

**DTR:** Controls the AM transmit signal from the USB virtual COM/DTR ports.

## RADIO SETTING - MODE FM -

### AF TREBLE GAIN

**Function:** Sets the amount of gain in the treble range of the received audio.

Available Values: -20 to +10

Default Setting: 0

**Description:** The amount of gain in the treble range can be set in the range of -20 to +10.

### AF MIDDLE TONE GAIN

**Function:** Setting the amount of gain in the middle range of the received audio.

Available Values: -20 to +10

Default Setting: 0

**Description:** The amount of gain in the middle range can be set in the range of -20 to +10.

### AF BASS GAIN

**Function:** Setting the amount of gain in the bass range of the received audio.

Available Values: -20 to +10

Default Setting: 0

**Description:** The amount of gain in the bass range can be set in the range of -20 to +10.

### AGC FAST DELAY

**Function:** Sets the AGC-FAST DELAY voltage decay characteristics for FM mode.

Available Values: 20 - 4000msec

Default Setting: 20msec

**Description:** Sets the AGC voltage decay characteristics in 20msec steps after the input signal level becomes lower than the AGC detection level and the HOLD time has expired.

### AGC MID DELAY

**Function:** Sets the AGC-MID DELAY voltage decay characteristics for FM mode.

Available Values: 20 - 4000msec

Default Setting: 240msec

**Description:** Sets the AGC voltage decay characteristics in 20msec steps after the input signal level becomes lower than the AGC detection level and the HOLD time has expired.

### AGC SLOW DELAY

**Function:** Sets the AGC-SLOW DELAY voltage decay characteristics for FM mode.

Available Values: 20 - 4000msec

Default Setting: 500msec

**Description:** Sets the AGC voltage decay characteristics in 20msec steps after the input signal level becomes lower than the AGC detection level and the HOLD time has expired.

## LCUT FREQ

**Function:** Sets the low-frequency cutoff audio filter in FM mode.

Available Values: OFF / 100Hz - 1000Hz

Default Setting: 300 Hz

**Description:** The cutoff frequency can be set at 50Hz increments between 100Hz and 1000Hz.

## LCUT SLOPE

**Function:** Sets the slope of the low-frequency cutoff audio filter in FM mode.

Available Values: 6dB/oct / 18dB/oct

Default Setting: 18dB/oct

## HCUT FREQ

**Function:** Sets the high-frequency cutoff audio filter in FM mode.

Available Values: 700Hz - 4000Hz/OFF

Default Setting: 3000Hz

**Description:** The cutoff frequency can be set at 50Hz increments between 700Hz and 4000Hz.

## HCUT SLOPE

**Function:** Sets the slope of the high-frequency cutoff audio filter in FM mode.

Available Values: 6dB/oct / 18dB/oct

Default Setting: 18dB/oct

## USB OUT LEVEL

**Function:** Sets the level of the receive FM signal output from the USB jack.

Available Values: 0 - 100

Default Setting: 50

## MOD SOURCE

**Function:** Selects the transmit audio input jack in the FM mode.

Available Values: MIC / USB / Bluetooth / AUTO

Default Setting: AUTO

**Description:**

**MIC:** Audio is input from the MIC jack on the field head.

**USB:** Disables the microphone circuit on the field head and inputs audio/data from the USB jack on the field head.

**Bluetooth:** Disables the microphone circuit on the field head and inputs audio/data from the Bluetooth.

**AUTO:** Modulation is automatically selected according to the transmission method.

**PTT:** The MIC jack on the front panel.

**MOX:** The MIC jack on the front panel.

**CAT:** The USB jack on the rear panel.

**RTS:** The USB jack on the rear panel.

**DTR:** The USB jack on the rear panel.

**VOX:** Terminal set with "VOX SELECT".

## USB MOD GAIN

**Function:** Sets the level of the FM signal input when “MOD SOURCE” is set to “USB”.

Available Values: 0 - 100

Default Setting: 50

## RPTT SELECT

**Function:** Sets the PTT control for the FM transmit signal.

Available Values: OFF / RTS / DTR

Default Setting: OFF

Description:

**OFF:** No PTT control.

**RTS:** Controls the FM transmit signal from the USB virtual COM/RTS ports.

**DTR:** Controls the FM transmit signal from the USB virtual COM/DTR ports.

## RPT SHIFT

**Function:** Sets the direction of the repeater transmit shift setting.

Available Values: - / SIMP / + / ARS

Default Setting: ARS

Description:

**-:** Shifts to the lower frequency offset.

**SIMP:** The frequency does not shift.

**+:** Shifts to the higher frequency offset.

**ARS:** The auto repeater shift function is enabled.

## RPT SFT FREQ(28MHz)

**Function:** Sets the RPT offset frequency on the 28MHz band.

Available Values: 0 - 1000kHz

Default Setting: 100kHz

**Description:** The RPT offset frequency can be set at 10kHz increments between 0kHz and 1000kHz.

## RPT SFT FREQ(50MHz)

**Function:** Sets the RPT offset frequency on the 50MHz band.

Available Values: 0 - 4000kHz

Default Setting: 500kHz

**Description:** The RPT offset frequency can be set at 10kHz increments between 0kHz and 4000kHz.

## RPT SFT FREQ(144MHz)

**Function:** Sets the RPT offset frequency on the 144MHz band.

Available Values: 0 - 100MHz

Default Setting: 0.60MHz

**Description:** The RPT offset frequency can be set at 50kHz increments between 0MHz and 100kHz.

## **RPT SFT FREQ(430MHz)**

**Function:** Sets the RPT offset frequency on the 430MHz band.

Available Values: 0 - 100MHz

Default Setting: 5.00MHz

**Description:** The RPT offset frequency can be set at 50kHz increments between 0MHz and 100kHz.

## **SQL TYPE**

**Function:** Sets the squelch type in the analog FM mode.

Available Values: OFF / ENC / TSQ / DCS / PR FREQ / REV TONE

Default Setting: OFF

For details, see “Selecting the squelch type in the analog FM mode” (see page 18).

## **STONE FREQ**

**Function:** Setting of the CTCSS Stone Frequency.

Available Values: 50 standard CTCSS tones

Default Setting: 100.0Hz

## **DCS CODE**

**Function:** Setting of the DCS Code.

Available Values: 104 standard DCS codes

Default Setting: 023

## **DCS RX REVERS**

**Function:** The receive DCS code phase may be inverted when using the digital code squelch function. To select the phase combination for receive.

Available Values: NORMAL / REVERS / BOTH

Default Setting: NORMAL

## **DCS TX REVERS**

**Function:** The transmit DCS code phase may be inverted when using the digital code squelch function. To select the phase combination for transmit.

Available Values: NORMAL / REVERS

Default Setting: NORMAL

## **PR FREQ**

**Function:** Set a no-communication squelch frequency in steps of 100 Hz within the range from 300 Hz to 3000 Hz.

Available Values: 300 Hz to 3000 Hz

Default Setting: 1600 Hz

## **DTMF DELAY**

**Function:** Selects the DTMF Autodialer Delay Time.

Available Values: 50ms / 250ms / 450ms / 750ms / 1000ms

Default Setting: 450ms

## **DTMF SPEED**

---

**Function:** Selects the DTMF Autodialer Sending Speed.

Available Values: 50ms / 100ms

Default Setting: 50ms

## **DTMF MEMORY1-10**

---

The maximum of 16 digit DTMF code can be registered for a telephone number to make a call through the public telephone line from a phone patch.

For details, see “Registering the DTMF memory” (see page 23).

## RADIO SETTING - MODE DATA -

### AF TREBLE GAIN

**Function:** Sets the amount of gain in the treble range of the received audio.

Available Values: -20 to +10

Default Setting: 0

**Description:** The amount of gain in the treble range can be set in the range of -20 to +10.

### AF MIDDLE TONE GAIN

**Function:** Setting the amount of gain in the middle range of the received audio.

Available Values: -20 to +10

Default Setting: 0

**Description:** The amount of gain in the middle range can be set in the range of -20 to +10.

### AF BASS GAIN

**Function:** Setting the amount of gain in the bass range of the received audio.

Available Values: -20 to +10

Default Setting: 0

**Description:** The amount of gain in the bass range can be set in the range of -20 to +10.

### AGC FAST DELAY

**Function:** Sets the AGC-FAST DELAY voltage decay characteristics for PSK/DATA mode.

Available Values: 20 - 4000msec

Default Setting: 160msec

**Description:** Sets the AGC voltage decay characteristics in 20msec steps after the input signal level becomes lower than the AGC detection level and the HOLD time has expired.

### AGC MID DELAY

**Function:** Sets the AGC-MID DELAY voltage decay characteristics for PSK/DATA mode.

Available Values: 20 - 4000msec

Default Setting: 500msec

**Description:** Sets the AGC voltage decay characteristics in 20msec steps after the input signal level becomes lower than the AGC detection level and the HOLD time has expired.

### AGC SLOW DELAY

**Function:** Sets the AGC-SLOW DELAY voltage decay characteristics for PSK/DATA mode.

Available Values: 20 - 4000msec

Default Setting: 1500msec

**Description:** Sets the AGC voltage decay characteristics in 20msec steps after the input signal level becomes lower than the AGC detection level and the HOLD time has expired.

## LCUT FREQ

**Function:** Sets the low-frequency cutoff audio filter in DATA mode.

Available Values: OFF / 100Hz - 1000Hz

Default Setting: 100

**Description:** The cutoff frequency can be set at 50Hz increments between 100Hz and 1000Hz.

## LCUT SLOPE

**Function:** Sets the slope of the low-frequency cutoff audio filter in DATA mode.

Available Values: 6dB/oct / 18dB/oct

Default Setting: 18dB/oct

## HCUT FREQ

**Function:** Sets the high-frequency cutoff audio filter in DATA mode.

Available Values: 700Hz - 4000Hz / OFF

Default Setting: 3200Hz

**Description:** The cutoff frequency can be set at 50Hz increments between 700Hz and 4000Hz.

## HCUT SLOPE

**Function:** Sets the slope of the high-frequency cutoff audio filter in DATA mode.

Available Values: 6dB/oct / 18dB/oct

Default Setting: 18dB/oct

## USB OUT LEVEL

**Function:** Sets the level of the receive DATA signal output from the USB jack.

Available Values: 0 - 100

Default Setting: 50

## TX BPF SEL

**Function:** Selects the audio passband of the DSP modulator on the DATA mode.

Available Values: 50-3050 / 100-2900 / 200-2800 / 300-2700 / 400-2600 (Hz)

Default Setting: 50-3050 Hz

## MOD SOURCE

**Function:** Selects the transmit audio input jack in the DATA mode.

Available Values: MIC / USB / Bluetooth / AUTO

Default Setting: AUTO

**Description:**

**MIC:** Audio is input from the MIC jack on the field head.

**USB:** Disables the microphone circuit on the field head and inputs audio/data from the USB jack on the field head.

**Bluetooth:** Disables the microphone circuit on the field head and inputs audio/data from the Bluetooth.

**AUTO:** Modulation is automatically selected according to the transmission method.

**PTT:** The MIC jack on the front panel.

**MOX:** The MIC jack on the front panel.

**CAT:** The USB jack on the rear panel.

**RTS:** The USB jack on the rear panel.

**DTR:** The USB jack on the rear panel.

**VOX:** Terminal set with "VOX SELECT".

## USB MOD GAIN

**Function:** Sets the level of the DATA signal input when "MOD SOURCE" is set to "USB".

Available Values: 0 - 100

Default Setting: 50

## RPTT SELECT

**Function:** Sets the PTT control for the DATA transmit signal.

Available Values: OFF / RTS / DTR

Default Setting: OFF

**Description:**

**OFF:** No PTT control.

**RTS:** Controls the DATA transmit signal from the USB virtual COM/RTS ports.

**DTR:** Controls the DATA transmit signal from the USB virtual COM/DTR ports.

## NAR WIDTH

**Function:** Sets the IF BANDWIDTH of the digital filter when the [N/W(MODE)] key is pressed in DATA mode.

Available Values: 50 / 100 / 150 / 200 / 250 / 300 / 350 / 400 / 450 / 500 / 600 / 800 / 1200 / 1400 / 1700 / 2000 / 2400 / 3000 / 3200 / 3500 / 4000 (Hz)

Default Setting: 300Hz

## PSK TONE

**Function:** Set the PSK tone

Available Values: 1000 / 1500 / 2000 (Hz)

Default Setting: 1000Hz

## DATA SHIFT(SSB)

**Function:** Sets the carrier point in DATA mode.

Available Values: 0 - 3000 (Hz)

Default Setting: 1500Hz

**Description:** The frequency can be set in steps of 10Hz.

## RADIO SETTING - MODE RTTY -

### AF TREBLE GAIN

**Function:** Sets the amount of gain in the treble range of the received audio.

Available Values: -20 to +10

Default Setting: 0

**Description:** The amount of gain in the treble range can be set in the range of -20 to +10.

### AF MIDDLE TONE GAIN

**Function:** Setting the amount of gain in the middle range of the received audio.

Available Values: -20 to +10

Default Setting: 0

**Description:** The amount of gain in the middle range can be set in the range of -20 to +10.

### AF BASS GAIN

**Function:** Setting the amount of gain in the bass range of the received audio.

Available Values: -20 to +10

Default Setting: 0

**Description:** The amount of gain in the bass range can be set in the range of -20 to +10.

### AGC FAST DELAY

**Function:** Sets the AGC-FAST DELAY voltage decay characteristics for RTTY mode.

Available Values: 20 - 4000msec

Default Setting: 160msec

**Description:** Sets the AGC voltage decay characteristics in 20msec steps after the input signal level becomes lower than the AGC detection level and the HOLD time has expired.

### AGC MID DELAY

**Function:** Sets the AGC-MID DELAY voltage decay characteristics for RTTY mode.

Available Values: 20 - 4000msec

Default Setting: 500msec

**Description:** Sets the AGC voltage decay characteristics in 20msec steps after the input signal level becomes lower than the AGC detection level and the HOLD time has expired.

### AGC SLOW DELAY

**Function:** Sets the AGC-SLOW DELAY voltage decay characteristics for RTTY mode.

Available Values: 20 - 4000msec

Default Setting: 1500msec

**Description:** Sets the AGC voltage decay characteristics in 20msec steps after the input signal level becomes lower than the AGC detection level and the HOLD time has expired.

## LCUT FREQ

**Function:** Sets the low-frequency cutoff audio filter in RTTY mode.

Available Values: OFF / 100Hz - 1000Hz

Default Setting: 300Hz

**Description:** The cutoff frequency can be set at 50Hz increments between 100Hz and 1000Hz.

## LCUT SLOPE

**Function:** Sets the slope of the low-frequency cutoff audio filter in RTTY mode.

Available Values: 6dB/oct / 18dB/oct

Default Setting: 18dB/oct

## HCUT FREQ

**Function:** Sets the high-frequency cutoff audio filter in RTTY mode.

Available Values: 700Hz - 4000Hz / OFF

Default Setting: 3000Hz

**Description:** The cutoff frequency can be set at 50Hz increments between 700Hz and 4000Hz.

## HCUT SLOPE

**Function:** Sets the slope of the high-frequency cutoff audio filter in RTTY mode.

Available Values: 6dB/oct / 18dB/oct

Default Setting: 18dB/oct

## USB OUT LEVEL

**Function:** Sets the level of the receive RTTY signal output from the USB jack.

Available Values: 0 - 100

Default Setting: 50

## RPTT SELECT

**Function:** Sets the PTT control for the RTTY transmit signal.

Available Values: OFF / RTS / DTR

Default Setting: OFF

**Description:**

**OFF:** No PTT control.

**RTS:** Controls the RTTY transmit signal from the USB virtual COM/RTS ports.

**DTR:** Controls the RTTY transmit signal from the USB virtual COM/DTR ports.

## NAR WIDTH

**Function:** Sets the IF BANDWIDTH of the digital filter when the [NAR] key is pressed in RTTY mode.

**Available Values:** 50 / 100 / 150 / 200 / 250 / 300 / 350 / 400 / 450 / 500 / 600 / 800 / 1200 / 1400 / 1700 / 2000 / 2400 / 3000 / 3200 / 3500 / 4000 (Hz)

Default Setting: 300Hz

## MARK FREQUENCY

---

**Function:** Sets the mark frequency for RTTY mode.

Available Values: 1275 / 2125 (Hz)

Default Setting: 2125Hz

## SHIFT FREQUENCY

---

**Function:** Sets the shift width for RTTY mode.

Available Values: 170 / 200 / 425 / 850 (Hz)

Default Setting: 170Hz

## POLARITY TX

---

**Function:** Sets the shift direction for transmitting in RTTY mode.

Available Values: NOR / REV

Default Setting: NOR

Description:

**NOR:** The space frequency will be lower than the mark frequency.

**REV:** The mark frequency will be lower than the space frequency

## RADIO SETTING - DIGITAL -

### DIGITAL POPUP

**Function:** Set the time duration to display the remote station information (such as the call sign) on the LCD.

Available Values: OFF / 2 - 60 (sec) / CONTINUE

Default Setting: 10 sec

**Description:**

**OFF:** The remote station information is not displayed.

**2 - 60 (sec):** Set the time duration to display the remote station information.

**CONTINUE:** The remote station information is continuously displayed.

### LOCATION SERVICE

**Function:** Set whether to transmit this station position in digital mode.

Available Values: OFF / ON

Default Setting: ON

### STANDBY BEEP

**Function:** Set whether or emit the standby beep sound when the remote station completes transmission.

Available Values: OFF / ON

Default Setting: ON

### DP-ID LIST

The DP-ID list is displayed.

For details, see "Digital Personal ID (DP-ID) feature" (see page 16).

### RADIO ID

Display of RADIO ID.

**Description:** In the GM function, each transceiver transmits its own ID along with the call sign.

RADIO ID is a 5-digit code consisting of alphanumeric characters that are written into the transceiver during factory production.

The RADIO ID cannot be edited.

## CW SETTING - MODE CW -

### AF TREBLE GAIN

**Function:** Sets the amount of gain in the treble range of the received audio.

Available Values: -20 to +10

Default Setting: 0

**Description:** The amount of gain in the treble range can be set in the range of -20 to +10.

### AF MIDDLE TONE GAIN

**Function:** Setting the amount of gain in the middle range of the received audio.

Available Values: -20 to +10

Default Setting: 0

**Description:** The amount of gain in the middle range can be set in the range of -20 to +10.

### AF BASS GAIN

**Function:** Setting the amount of gain in the bass range of the received audio.

Available Values: -20 to +10

Default Setting: 0

**Description:** The amount of gain in the bass range can be set in the range of -20 to +10.

### AGC FAST DELAY

**Function:** Sets the AGC-FAST DELAY voltage decay characteristics for CW mode.

Available Values: 20 - 4000msec

Default Setting: 160msec

**Description:** Sets the AGC voltage decay characteristics in 20 msec steps after the input signal level becomes lower than the AGC detection level and the HOLD time has expired.

### AGC MID DELAY

**Function:** Sets the AGC-MID DELAY voltage decay characteristics for CW mode.

Available Values: 20 - 4000msec

Default Setting: 500msec

**Description:** Sets the AGC voltage decay characteristics in 20msec steps after the input signal level becomes lower than the AGC detection level and the HOLD time has expired.

### AGC SLOW DELAY

**Function:** Sets the AGC-SLOW DELAY voltage decay characteristics for CW mode.

Available Values: 20 - 4000msec

Default Setting: 1500msec

**Description:** Sets the AGC voltage decay characteristics in 20msec steps after the input signal level becomes lower than the AGC detection level and the HOLD time has expired.

## LCUT FREQ

**Function:** Sets the low-frequency cutoff audio filter in CW mode.

Available Values: OFF / 100Hz - 1000Hz

Default Setting: 250Hz

**Description:** The cutoff frequency can be set at 50Hz increments between 100Hz and 1000Hz.

## LCUT SLOPE

**Function:** Sets the slope of the low-frequency cutoff audio filter in CW mode.

Available Values: 6dB/oct / 18dB/oct

Default Setting: 18dB/oct

## HCUT FREQ

**Function:** Sets the high-frequency cutoff audio filter in CW mode.

Available Values: 700Hz - 4000Hz / OFF

Default Setting: 1200Hz

**Description:** The cutoff frequency can be set at 50Hz increments between 700Hz and 4000Hz.

## HCUT SLOPE

**Function:** Sets the slope of the high-frequency cutoff audio filter in CW mode.

Available Values: 6dB/oct / 18dB/oct

Default Setting: 18dB/oct

## USB OUT LEVEL

**Function:** Sets the level of the receive CW signal output from the USB jack.

Available Values: 0 - 100

Default Setting: 50

## RPTT SELECT

**Function:** Sets the PTT control for the CW transmit signal.

Available Values: OFF / RTS / DTR

Default Setting: OFF

**Description:**

**OFF:** No PTT control.

**RTS:** Controls the CW transmit signal from the USB virtual COM/RTS ports.

**DTR:** Controls the CW transmit signal from the USB virtual COM/DTR ports.

## NAR WIDTH

**Function:** Sets the IF BANDWIDTH of the digital filter when the [NAR] key is pressed in CW mode.

**Available Values:** 50 / 100 / 150 / 200 / 250 / 300 / 350 / 400 / 450 / 500 / 600 / 800 / 1200 / 1400 / 1700 / 2000 / 2400 / 3000 / 3200 / 3500 / 4000 (Hz)

Default Setting: 250Hz

## PC KEYING

**Function:** Sets the RTTY/DATA jack for PC keying.

Available Values: OFF / RTS / DTR

Default Setting: OFF

**Description:**

**OFF:** Disables PC keying from DATA PTT (pin 3) of the RTTY/DATA jack.

**RTS:** Controls the transmit from the USB virtual COM/RTS ports.

**DTR:** Controls the transmit from the USB virtual COM/DTR ports.

## CW BK-IN TYPE

**Function:** Sets the CW brake-in function.

Available Values: SEMI / FULL

Default Setting: SEMI

**Description:**

**SEMI:** A brief delay is provided after the CW keying operation, before the transceiver returns to receive mode.

The receiver recovery time may be changed using "CW BK-IN DELAY".

**FULL:** The transceiver immediately returns to receive mode after every CW key-up (QSK mode).

## CW FREQ DISPLAY

**Function:** Sets the PITCH frequency offset.

Available Values: DIRECT FREQ / PITCH OFFSET

Default Setting: PITCH OFFSET

**Description:** Sets the displayed frequency offset when switching the transceiver mode between SSB and CW.

**DIRECT FREQ:** Displays the same frequency in CW mode as in SSB mode without any offset added.

**PITCH OFFSET:** Displays the frequency in CW mode with the pitch offset added. When CW BFO is set to USB, the displayed frequency will be increased and when CW BFO is set to LSB, the displayed frequency will be decreased with pitch offset added.

## QSK DELAY TIME

**Function:** Sets the time delay before transmitting the keying signal.

Available Values: 15 / 20 / 25 / 30 msec

Default Setting: 15 msec

**Description:** The QSK mode delay time before transmitting the CW signal may be set in 5msec steps.

**Notes:**

- When the keying speed of the CW is "45 wpm" or more, delay time will be "15 msc" regardless of the delay time setting.
- This setting is valid in all communication modes and the set TX delay time works effectively for the TX GND pin of the LINEAR jack on the Field head rear panel.

## CW INDICATOR

---

**Function:** Bar display settings shown below the filter function display in CW mode.

Available Values: OFF / ON

Default Setting: ON

**Description:** In CW mode, the bar shown below the filter function display may be set to ON or OFF.

## CW SETTING - KEYER -

### KEYER TYPE

**Function:** Selects the desired keyer operation mode for the device connected to the rear panel KEY jack.

Available Values: OFF / BUG / ELEKEY-A / ELEKEY-B / ELEKEY-Y / ACS

Default Setting: ELEKEY-B

**Description:**

**OFF:** Disables the keyer function.

**BUG:** Functions as a "BUG key". Only the "Dot" side is automatically generated (the "Dash" side is generated manually).

**ELEKEY-A:** A code element ("Dot" or "Dash" side) is transmitted upon pressing both sides of the paddle.

**ELEKEY-B:** Pressing both sides of the paddle transmits the currently generated "Dash" side followed by "Dot" side (or reverse order).

**ELEKEY-Y:** Pressing both sides of the paddle transmits the currently generated "Dash" side followed by "Dot" side (or reverse order).

While transmitting the "Dash" side, the first transmitted "Dot" side will not be stored.

**ACS:** Functions as the "Keyer with automatic spacing control feature" which sets spacing between characters precisely to be the same length as a dash (three dots in length).

### KEYER DOT/DASH

**Function:** Selects the keyer paddle wiring configuration for the KEY jack on the front panel.

Available Values: NOR / REV

Default Setting: NOR

**Description:**

**NOR:** Tip = Dot, Ring = Dash, Shaft = Ground.

**REV:** Tip = Dash, Ring = Dot, Shaft = Ground.

### CW WEIGHT

**Function:** Adjusts the keyer CW weight.

Available Values: 2.5 - 4.5

Default Setting: 3.0

**Description:** Sets the "Dot": "Dash" ratio for the built-in electronic keyer.

## NUMBER STYLE

---

**Function:** Selects the contest number “Cut” format for an imbedded contest number.

Available Values: 1290 / AUNO / AUNT / A2NO / A2NT / 12NO / 12NT

Default Setting: 1290

**Description:** Abbreviates numbers “One”, “Two”, “Nine” and “Zero” using Morse code when sending the contest number.

1290: Does not abbreviate the contest number.

AUNO: Abbreviates to “A” for “One”, “U” for “Two”, “N” for “Nine”, and “O” for “Zero”.

AUNT: Abbreviates to “A” for “One”, “U” for “Two”, “N” for “Nine”, and “T” for “Zero”.

A2NO: Abbreviates to “A” for “One”, “N” for “Nine”, and “O” for “Zero”. Does not abbreviate number “Two”.

A2NT: Abbreviates to “A” for “One”, “N” for “Nine”, and “T” for “Zero”. Does not abbreviate number “Two”.

12NO: Abbreviates to “N” for “Nine”, and “O” for “Zero”. Does not abbreviate numbers “One” and “Two”.

12NT: Abbreviates to “N” for “Nine”, and “T” for “Zero”. Does not abbreviate numbers “One” and “Two”.

## CONTEST NUMBER

---

**Function:** Enters the initial contest number that will increment/decrement each time the CW message is sent during contest QSOs.

Available Values: 1 - 9999

Default Setting: 1

## CW MEMORY 1 - 5

---

**Function:** Selects the registration method for the contest keyer “CW MEMORY 1” to “CW MEMORY 5”.

Available Values: TEXT / MESSAGE

Default Setting: TEXT

**Description:**

**TEXT:** The touch panel to enter text.

**MESSAGE:** Use the keyer to register text to the contest memory keyer.

## REPEAT INTERVAL

---

**Function:** Sets the interval time between each repition of the beacon message.

Available Values: 1 - 60 (sec)

Default Setting: 5 sec

**Description:** Set the interval for transmitting the CW code registered in the contest memory keyer as a beacon.

On the “CW MESSAGE MEMORY” screen, press and hold the number registered with the code to be sent.

The CW Morse code message will be transmitted at the set intervals.

## OPERATION SETTING

### - GENERAL -

#### BEEP LEVEL

**Function:** Sets the beep volume level.

Available Values: 0 - 100

Default Setting: 30

**Description:** The higher the setting, the louder the sound becomes.

#### RF/SQL VR

**Function:** Selects the operation mode of the RF/SQL knob.

Available Values: RF / SQL / AUTO

Default Setting: AUTO

**Description:**

**RF:** Functions as the RF gain adjustment knob.

**SQL:** Functions as the Squelch level adjustment knob.

**AUTO:** Functions as the squelch level adjustment knob in FM, FM-N, DATA-FM and D-FMN modes, and as the RF gain adjustment knob in other modes.

#### TUN/LIN PORT SELECT

**Function:** Selects the function of the Field head TUNER/LINEAR terminal.

Available Values: OPTION / BAND DATA / CAT-3 / GPO

Default Setting: OPTION

**Description:** Select the antenna tuner to be used.

**OPTION:** Select this item when using an external antenna tuner (the optional FC-80, SPA-1).

**BAND DATA:** Select this item when using a Power Amplifier.

**CAT-3:** Select this item when used as a CAT terminal.

**GPO:** H/L signal is output by CAT command "GP".

#### TUNER SELECT

**Function:** External antenna tuner settings.

Available Values: OPTION / ATAS

Default Setting: OPTION

**Description:** Select the antenna tuner to be used.

**OPTION:** Select this item when using an external antenna tuner (the optional FC-80, etc.).

**ATAS:** Select this item when using the active tuning antenna system ATAS-120A.

#### CAT-1 RATE

**Function:** Sets the baud rate for a CAT command input of the USB jack (Enhanced COM Port).

Available Values: 4800 / 9600 / 19200 / 38400 / 115200 bps

Default Setting: 38400 bps

## CAT-1 TIME OUT TIMER

**Function:** Sets the Time-Out Timer for a CAT command input.

Available Values: 10 / 100 / 1000 / 3000 (msec)

Default Setting: 10msec

**Description:** Sets the Time-Out Timer countdown time for a CAT command input of the USB jack (Enhanced COM Port).

## CAT-1 CAT-3 STOP BIT

**Function:** Stop bit setting when operating with CAT-1 and CAT-3. The stop bit of CAT-2 is "1bit" and cannot be "2bit".

Available Values: 1bit / 2bit

Default Setting: 1bit

## CAT-2 RATE

**Function:** Sets the baud rate for a CAT-2 command input of the USB jack (Standard COM Port).

Available Values: 4800 / 9600 / 19200 / 38400 / 115200 bps

Default Setting: 4800 bps

## CAT-2 TIME OUT TIMER

**Function:** Sets the Time-Out Timer for a CAT-2 command input.

Available Values: 10 / 100 / 1000 / 3000 (msec)

Default Setting: 10msec

**Description:** Sets the Time-Out Timer countdown time for a CAT-2 command input of the USB jack (Standard COM Port).

## CAT-3 RATE

**Function:** Sets the baud rate for a CAT-3 command input of the TUNER/LINEAR jack.

Available Values: 4800 / 9600 / 19200 / 38400 / 115200 bps

Default Setting: 38400 bps

## CAT-3 TIME OUT TIMER

**Function:** Sets the Time-Out Timer for a CAT-3 command input.

Available Values: 10 / 100 / 1000 / 3000 (msec)

Default Setting: 10 msec

**Description:** Sets the Time-Out Timer countdown time for a CAT-3 command input of the TUNER/LINEAR jack.

## TX TIME OUT TIMER

**Function:** Sets the Time-Out Timer countdown time.

Available Values: OFF / 1 - 30 min

Default Setting: OFF

**Description:** When the time-out timer function is active, a beep is emitted when a continuous transmission nears the set time. About 10 seconds later, the transmitter is forced to return to the receiving mode.

## REF FREQ FINE ADJ

**Function:** Adjusts the reference oscillator.

Available Values: -25 - 0 - 25

Default Setting: 0

**Description:** The frequency may be calibrated by connecting a frequency counter to the transceiver, or by receiving a standard frequency such as WWV or WWVH.

## CHARGE CONTROL

**Function:** Set whether to charge the battery (SBR-52LI) when the transceiver is turned ON.

Available Values: OFF / ON

Default Setting: ON

## SUB BAND MUTE

**Function:** While receiving signals in the MAIN-side and SUB-side at the same time, the SUB-side can be automatically muted or not muted.

Available Values: OFF / ON

Default Setting: OFF (Disable the muting audio.)

## SPEAKER SELECT

**Function:** Speaker operation settings when external speakers are connected.

Available Values: Auto / INT / BOTH

Default Setting: BOTH

**Auto:** The received audio is heard only through the External speaker.

**INT:** The received audio is heard from only the Internal speaker.

**BOTH:** The received audio is heard from both the Internal speaker and the External speaker.

## DITHER

**Function:** Enable/Disable the dithering.

Available Values: OFF / ON

Default Setting: ON

## OPERATION SETTING - BAND/SCAN -

### QMB CH

**Function:** Number of channels setting of the Quick Memory bank.

Available Values: 5ch / 10ch

Default Setting: 5ch

**Description:** Set the number of channels that can be registered in the Quick Memory Bank.

### BAND STACK

**Function:** Enable/Disable the band stack function.

Available Values: OFF / ON

Default Setting: ON

**Description:**

**ON:** Enable the band stack function.

**OFF:** Disable the band stack function.

### BAND EDGE

**Function:** Sets the frequency tuning range while operating in VFO mode.

Available Values: OFF / ON

Default Setting: OFF

**Description:**

**ON:** Tuning continues to the other end of the current band when reaching the end of the band.

**OFF:** Tuning continues to the next band when reaching the end of a band.

### SCAN RESUME

**Function:** Set the time interval to resume scanning after a received signal ends during scanning.

Available Values: BUSY / HOLD / 1sec / 3sec / 5sec

Default Setting: BUSY

**Description:**

**BUSY:** Continue receiving the frequency until the signal disappears.

**HOLD:** Stop scanning and receive that frequency.

**1sec / 3sec / 5sec:** Restart scanning after receiving the frequency for the set amount of time.

## OPERATION SETTING - RX DSP -

### IF NOTCH WIDTH

**Function:** Sets the attenuation bandwidth characteristic of the DSP IF notch filter.

**Available Values:** NARROW / WIDE

**Default Setting:** WIDE

**Description:** Sets the attenuation bandwidth characteristic setting of the DSP IF notch filter to "NARROW" or "WIDE".

### NB REJECTION

**Function:** Selects the level of noise attenuation.

**Available Values:** LOW / MID / HIGH

**Default Setting:** MID

### NB WIDTH

**Function:** Sets the duration of the noise blanking pulse to match various types of noise compatible with the noise blanker function.

**Available Values:** NARROW / MEDIUM / WIDE

**Default Setting:** MEDIUM

**Description:** Reduces long duration noise as well as pulse noise by changing the setting.

### APF WIDTH

**Function:** Sets the bandwidth of the Audio Peak Filter.

**Available Values:** NARROW / MEDIUM / WIDE

**Default Setting:** MEDIUM

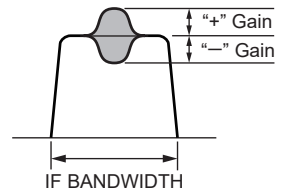
**Description:** In CW mode the APF peak center frequency is set according to the CW PITCH frequency and the chosen APF bandwidth value. In order to listen to the desired signal comfortably, select one of the three bandwidths of the peak filter.

### CONTOUR LEVEL

**Function:** Adjusts the GAIN of the CONTOUR circuit.

**Available Values:** -40 - 0 - 20

**Default Setting:** -15

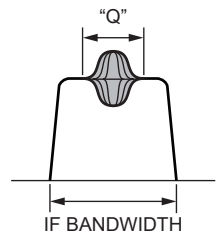


### CONTOUR WIDTH

**Function:** Sets the bandwidth ("Q") of the CONTOUR circuit.

**Available Values:** 1 - 11

**Default Setting:** 10



## OPERATION SETTING

### - TX AUDIO -

#### AMC RELEASE TIME

**Function:** AMC level adjustment tracking speed setting

**Available Values:** FAST / MID / SLOW

**Default Setting:** MID

**Description:** Set the input audio level tracking speed of the AMC function.

#### PRMTRC EQ1 FREQ

**Function:** Sets the center frequency of the low range for the 3 band parametric microphone equalizer.

**Available Values:** OFF / 100 - 700 (Hz)

**Default Setting:** OFF

**Description:** Selects the center frequency setting of the low range of the 3 Band Parametric Microphone Equalizer in 100Hz steps between "100Hz" and "700Hz".

#### PRMTRC EQ1 LEVEL

**Function:** Sets the gain for the low range of the 3 Band Parametric Microphone Equalizer.

**Available Values:** -20 - 0 - 10 (dB)

**Default Setting:** 5

**Description:** Selects the gain setting for the low range of the 3 Band Parametric Microphone Equalizer between "-20 dB" and "+10 dB".

#### PRMTRC EQ1 BWTH

**Function:** Sets the width ("Q") for the low range of the 3 Band Parametric Microphone Equalizer.

**Available Values:** 0 - 10

**Default Setting:** 10

**Description:** Selects the width (Q) setting for the low range for the 3 Band Parametric Microphone Equalizer between "0" and "10".

#### PRMTRC EQ2 FREQ

**Function:** Sets the center frequency for the middle range of the 3 Band Parametric Microphone Equalizer.

**Available Values:** OFF / 700 - 1500 (Hz)

**Default Setting:** OFF

**Description:** Selects the center frequency setting for the middle range of the 3 Band Parametric Microphone Equalizer in 100Hz steps between "700Hz" and "1500Hz".

#### PRMTRC EQ2 LEVEL

**Function:** Sets the gain for the middle range of the 3 Band Parametric Microphone Equalizer.

**Available Values:** -20 - 0 - 10 (dB)

**Default Setting:** 5

**Description:** Selects the gain setting for the middle range of the 3 Band Parametric Microphone Equalizer between "-20 dB" and "+10 dB".

## **PRMTRC EQ2 BWTH**

**Function:** Sets the width ("Q") for the middle range of the 3 Band Parametric Microphone Equalizer.

**Available Values:** 0 - 10

**Default Setting:** 10

**Description:** Selects the width ("Q") setting for the middle range of the 3 Band Parametric Microphone Equalizer between "0" and "10".

## **PRMTRC EQ3 FREQ**

**Function:** Sets the center frequency for the high range of the 3 Band Parametric Microphone Equalizer.

**Available Values:** OFF / 1500 - 3200 (Hz)

**Default Setting:** OFF

**Description:** Selects the center frequency setting for the high range of the 3 Band Parametric Microphone Equalizer in 100Hz steps between "1500Hz" and "3200Hz".

## **PRMTRC EQ3 LEVEL**

**Function:** Sets the gain for the high range of the 3 Band Parametric Microphone Equalizer.

**Available Values:** -20 - 0 - 10 (dB)

**Default Setting:** 5

**Description:** Selects the gain setting for the high range of the 3 Band Parametric Microphone Equalizer between "-20 dB" and "+10 dB".

## **PRMTRC EQ3 BWTH**

**Function:** Sets the width ("Q") for the high range of the 3 Band Parametric Microphone Equalizer.

**Available Values:** 0 - 10

**Default Setting:** 10

**Description:** Selects the width ("Q") setting for the high range of the 3 Band Parametric Microphone Equalizer between "0" and "10".

## **P PRMTRC EQ1 FREQ**

**Function:** Sets the center frequency of the low range for the 3 Band Parametric Microphone Equalizer when the Speech Processor is activated.

**Available Values:** OFF / 100 - 700 (Hz)

**Default Setting:** OFF

**Description:** Activates when the Speech Processor is "ON", and selects the center frequency setting for the low range of the 3 Band Parametric Microphone Equalizer in 100Hz steps between "100Hz" and "700Hz".

## **P PRMTRC EQ1 LEVEL**

**Function:** Sets the gain for the low range of the 3 Band Parametric Microphone Equalizer when the Speech Processor is activated.

**Available Values:** -20 - 0 - 10 (dB)

**Default Setting:** 0

**Description:** Activates when the Speech Processor is "ON" and selects the gain setting for the low range of the 3 Band Parametric Microphone Equalizer between "-20 dB" and "+10 dB".

## **P PRMTRC EQ1 BWTH**

**Function:** Sets the width ("Q") for the low range of the 3 Band Parametric Microphone Equalizer when the Speech Processor is activated.

**Available Values:** 0 - 10

**Default Setting:** 2

**Description:** Activates when the Speech Processor is "ON", and selects the width ("Q") setting for the low range of the 3 Band Parametric Microphone Equalizer between "0" and "10".

## **P PRMTRC EQ2 FREQ**

**Function:** Sets the center frequency for the middle range of the 3 Band Parametric Microphone Equalizer when the Speech Processor is activated.

**Available Values:** OFF / 700 - 1500 (Hz)

**Default Setting:** OFF

**Description:** Activates when the Speech Processor is "ON", and selects the center frequency setting for the middle range of the 3 Band Parametric Microphone Equalizer in 100Hz steps between "700Hz" and "1500Hz".

## **P PRMTRC EQ2 LEVEL**

**Function:** Sets the gain for the middle range of the 3 Band Parametric Microphone Equalizer when the Speech Processor is activated.

**Available Values:** -20 - 0 - 10 (dB)

**Default Setting:** 0

**Description:** Activates when the Speech Processor is "ON", and selects the gain setting for the middle range of the 3 Band Parametric Microphone Equalizer between "-20 dB" and "+10 dB".

## **P PRMTRC EQ2 BWTH**

**Function:** Sets the width ("Q") for the middle range of the 3 Band Parametric Microphone Equalizer when the Speech Processor is activated.

**Available Values:** 0 - 10

**Default Setting:** 1

**Description:** Activates when the Speech Processor is "ON", and selects the width ("Q") setting for the middle range of the 3 Band Parametric Microphone Equalizer between "0" and "10".

## **P PRMTRC EQ3 FREQ**

**Function:** Sets the center frequency for the high range of the 3 Band Parametric Microphone Equalizer when the Speech Processor is activated.

**Available Values:** OFF/1500 - 3200 (Hz)

**Default Setting:** OFF

**Description:** Activates when the Speech Processor is "ON", and selects the center frequency setting for the high range of the 3 Band Parametric Microphone Equalizer in 100Hz steps between "1500Hz" and "3200Hz".

## **P PRMTRC EQ3 LEVEL**

**Function:** Sets the gain for the high range of the 3 Band Parametric Microphone Equalizer when the Speech Processor is activated.

**Available Values:** -20 - 0 - 10 (dB)

**Default Setting:** 0

**Description:** Activates when the Speech Processor is "ON", and selects the gain setting for the high range of the 3 Band Parametric Microphone Equalizer between "-20 dB" and "+10 dB".

## **P PRMTRC EQ3 BWTH**

**Function:** Sets the width ("Q") for the high range of the 3 Band Parametric Microphone Equalizer when the Speech Processor is activated.

**Available Values:** 0 - 10

**Default Setting:** 1

**Description:** Activates when the Speech Processor is "ON", and selects the width ("Q") setting for the high range of the 3 Band Parametric Microphone Equalizer between "0" and "10".

## OPERATION SETTING

### - TX GNRL -

#### MAX POWER(BAT)

**Function:** Sets the transmit RF power output when using the SBR-52LI for operation.

**Available Values:** 0.5 - 6.0W

**Default Setting:** 6.0W

#### QRP MODE

**Function:** To set the maximum transmission output to "5W" on all bands.

**Available Values:** OFF / ON

**Default Setting:** OFF

#### HF MAX POWER

**Function:** Sets the transmit RF power output of the HF band for the FTX-1 Field.

**Available Values:** 0.5 - 10.0W

**Default Setting:** 10.0W

#### 50M MAX POWER

**Function:** Sets the transmit RF power output of the 50 MHz band for the FTX-1 Field.

**Available Values:** 0.5 - 10.0W

**Default Setting:** 10.0W

#### 70M MAX POWER

**Function:** Sets the transmit RF power output of the 70 MHz band for the FTX-1 Field.

**Available Values:** 0.5 - 6.0W

**Default Setting:** 6.0W

#### 144M MAX POWER

**Function:** Sets the transmit RF power output of the 144 MHz band for the FTX-1 Field.

**Available Values:** 0.5 - 10.0W

**Default Setting:** 10.0W

#### 430M MAX POWER

**Function:** Sets the transmit RF power output of the 430 MHz band for the FTX-1 Field.

**Available Values:** 0.5 - 10.0W

**Default Setting:** 10.0W

#### AM HF/50 MAX POWER

**Function:** Sets the transmit RF power output of the AM mode for HF and 50 MHz band for the FTX-1 Field.

**Available Values:** 0.5 - 2.5W

**Default Setting:** 2.5W

#### AM V/U MAX POWER

**Function:** Sets the transmit RF power output of the AM mode for 144 MHz and 430 MHz band for the FTX-1 Field.

**Available Values:** 0.5 - 2.5W

**Default Setting:** 2.5W

## VOX SELECT

**Function:** Selects the function of the VOX operation.

**Available Values:** MIC / USB / BLUETOOTH

**Default Setting:** MIC

**Description:**

**MIC:** Operates via input from the MIC jack (microphone).

**USB:** Operates via input from the USB jack.

**BLUETOOTH:** Operates via input from the Bluetooth.

## EMERGENCY FREQ TX

**Function:** Enables TX/RX operation on the Alaska Emergency Channel, 5167.5kHz.

**Available Values:** OFF / ON

**Default Setting:** OFF

**Description:** When this Menu Item is set to "ON", the spot frequency of 5167.5 kHz will be enabled.

**Important:** The use of this frequency is restricted to stations operating in or near Alaska, and only for emergency purposes (never for routine operations).  
See §97.401(c) of the FCC regulations.

## TX INHIBIT

**Function:** Enable/Disable the TX INHIBIT function.

**Available Values:** OFF / ON

**Default Setting:** OFF

**Description:**

**ON:** Enable the TX INHIBIT function.

**OFF:** Disable the TX INHIBIT function.

## METER DETECTOR

**Function:** Setting of the PO meter display.

**Available Values:** AVERAGE / PEAK

**Default Setting:** AVERAGE

**Description:** Select the transmit power output indication method.

**AVERAGE:** Displays the average transmit power.

(Even if the transmit power is 10W, the meter rarely swings to 10W.)

**PEAK:** Displays the maximum transmit power.

(When the transmit output power is 10W, the meter swings up to 10W.)

## OPERATION SETTING - KEY/DIAL -

### SSB/CW DIAL STEP

**Function:** Setting of the MAIN/SUB dial tuning speed in the SSB and CW mode.

**Available Values:** 5 / 10 / 20 (Hz)

**Default Setting:** 20Hz

### RTTY/PSK DIAL STEP

**Function:** Setting of the MAIN/SUB dial knob tuning speed in the RTTY and PSK mode.

**Available Values:** 5 / 10 / 20 (Hz)

**Default Setting:** 10Hz

### FM DIAL STEP

**Function:** Setting of the MAIN/SUB dial knob tuning speed in the FM mode.

**Available Values:** 5 / 10 / 20 (Hz) / Auto

**Default Setting:** Auto

### CH STEP

**Function:** Selects the tuning steps for the MAIN/SUB dial knob.

**Available Values:** 1 / 2.5 / 5 / 10 (kHz)

**Default Setting:** 10kHz

### AM CH STEP

**Function:** Selects the tuning steps for the MAIN/SUB dial knob in the AM mode.

**Available Values:** 2.5 / 5 / 9 / 10 / 12.5 / 25 (kHz)

**Default Setting:** 5kHz

### FM CH STEP

**Function:** Selects the tuning steps for the MAIN/SUB dial knob in the FM mode.

**Available Values:** 5 / 6.25 / 10 / 12.5 / 20 / 25 (kHz)

**Default Setting:** 5kHz

### MAIN STEPS PER REV.

**Function:** Setting the steps per rotation of the MAIN dial.

**Available Values:** 50 / 100 / 200

**Default Setting:** 200

### MIC P1 - MIC P4

**Function:** The functions of the [P1] / [P2] / [P3] / [P4] keys can be assigned the other functions.

**Available Values:** LOCK / QMB / >< / V\_M / TUNER / VOX\_MOX / MODE / ZIN\_SPOT / SPLIT / FINE / NAR / NB / DNR / FREQ UP / FREQ DOWN / BAND UP / BAND DOWN / ATT / IPO / DNF / AGC /

**Default Setting:**

**MIC P1:** LOCK

**MIC P2:** QMB

**MIC P3:** BAND UP

**MIC P4:** V/M

## MIC UP

---

**Function:** The functions of the [UP] key of the supplied microphone can be assigned the other functions.

**Available Values:** Same as MIC P1 to MIC P4.

**Default Setting:** FREQ UP

## MIC DOWN

---

**Function:** The functions of the [DWN] key of the supplied microphone can be assigned the other functions.

**Available Values:** Same as MIC P1 to MIC P4.

**Default Setting:** FREQ DOWN

## MIC SCAN

---

**Function:** Activates the microphone automatic scanning function.

**Available Values:** OFF / ON

**Default Setting:** ON

**Description:** Sets the operation of the UP/DWN keys on the microphone.

**ON:** Starts scanning automatically by pressing and holding the UP/DWN key for 1 second or more (Scanning continues even after releasing the button). To stop scanning, press the UP/DWN key again briefly or press the PTT button to transmit.

**OFF:** Scans only while pressing and holding the UP/DWN key. To stop scanning, release the button.

## OPERATION SETTING - OPTION -

### TUNER TYPE SEL ANT1

**Function:** Internal and external antenna tuner settings of the ANT1 connector.

**Available Values:** INT / INT(FAST) / EXT / ATAS

**Default Setting:** INT

**Description:** Select the antenna tuner to be used of the ANT1 connector.

**INT:** Select this item when using the internal antenna tuner. (An external antenna tuner cannot be used.)

**INT(FAST):** Select this item when using the internal antenna tuner. Tuning is performed at a higher speed than normal, although accuracy is slightly reduced. (An external antenna tuner cannot be used.)

**EXT:** Select this item when using an external antenna tuner (the optional FC-40, etc.).

**ATAS:** Select this item when using the active tuning antenna system ATAS-120A.

### TUNER TYPE SEL ANT2

**Function:** Internal and external antenna tuner settings of the ANT2 connector.

**Available Values:** INT / INT(FAST) / EXT / ATAS

**Default Setting:** INT

**Description:** Select the antenna tuner to be used of the ANT2 connector.

**INT:** Select this item when using the internal antenna tuner. (An external antenna tuner cannot be used.)

**INT(FAST):** Select this item when using the internal antenna tuner. Tuning is performed at a higher speed than normal, although accuracy is slightly reduced. (An external antenna tuner cannot be used.)

**EXT:** Select this item when using an external antenna tuner (the optional FC-40, etc.).

**ATAS:** Select this item when using the active tuning antenna system ATAS-120A.

### ANT2 OPERATION

**Function:** Selects the operation mode of the ANT2 connector.

**Available Values:** TRX / TX-ANT1,RX-ANT2 / TRX-ANT1,RX-ANT2

**Default Setting:** TRX

|                   | TX Antenna (output) | RX Antenna (input) |
|-------------------|---------------------|--------------------|
| TRX               | ANT2                |                    |
| TX-ANT1, RX-ANT2  | ANT1                | ANT2               |
| TRX-ANT1, RX-ANT2 | ANT1                | ANT1 / ANT2        |

### HF ANT SELECT

**Function:** Select the antenna connector to be used on HF/50MHz, either "ANT1" or "ANT2".

**Available Values:** ANT1 / ANT2

**Default Setting:** ANT1

## **HF MAX POWER**

**Function:** Sets the transmit RF power output of the HF band for the FTX-1 optima or FTX-1 Field with the SPA-1.

**Available Values:** 5 - 100W

**Default Setting:** 100W

## **50M MAX POWER**

**Function:** Sets the transmit RF power output of the 50 MHz band for the FTX-1 optima or FTX-1 Field with the SPA-1.

**Available Values:** 5 - 100W

**Default Setting:** 100W

## **70M MAX POWER**

**Function:** Sets the transmit RF power output of the 70 MHz band for the FTX-1 optima or FTX-1 Field with the SPA-1.

**Available Values:** 5 - 50W

**Default Setting:** 50W

## **144M MAX POWER**

**Function:** Sets the transmit RF power output of the 144 MHz band for the FTX-1 optima or FTX-1 Field with the SPA-1.

**Available Values:** 5 - 50W

**Default Setting:** 50W

## **430M MAX POWER**

**Function:** Sets the transmit RF power output of the 430 MHz band for the FTX-1 optima or FTX-1 Field with the SPA-1.

**Available Values:** 5 - 50W

**Default Setting:** 50W

## **AM MAX POWER**

**Function:** Sets the transmit RF power output of the AM mode for the FTX-1 optima or FTX-1 Field with the SPA-1.

**Available Values:** 5 - 25W

**Default Setting:** 25W

## **AM V/U MAX POWER**

**Function:** Sets the transmit RF power output of the AM mode for 144 MHz and 430 MHz band for the FTX-1 optima or FTX-1 Field with the SPA-1.

**Available Values:** 5 - 13W

**Default Setting:** 13W

## **GPS**

**Function:** ON/OFF setting for the GPS function.

**Available Values:** OFF / ON

**Default Setting:** OFF

## **GPS PINNING**

---

**Function:** Select the pinning item of the GPS function.

**Available Values:** OFF / ON

**Default Setting:** ON

**ON:** The latitude and longitude data is fixed when the movement speed of this device is 0.

**OFF:** The latitude and longitude are constantly calculated when the movement speed of this device is 0.

## **GPS BAUDRATE**

---

**Function:** Sets the GPS baud rate.

**Available Values:** 4800bps / 9600bps / 19200bps / 38400bps / 115200bps

**Default Setting:** 9600bps

## **BLUETOOTH**

---

Make Bluetooth settings and connect to the optional Bluetooth Headset SSM-BT20.

For details, see “Bluetooth Operation” (see page 7).

## DISPLAY SETTING

### - DISPLAY -

#### MY CALL

**Function:** Programs a Call Sign or Name.

**Available Values:** Up to 10 alphanumeric characters

**Default Setting:** FTX-1

**Description:** Set characters to be displayed on the power ON opening screen.

#### MY CALL TIME

**Function:** Set the time for displaying characters registered in "MY CALL".

**Available Values:** OFF / 1 / 2 / 3 / 4 / 5 (sec)

**Default Setting:** 1sec

**Description:** Set the time "My Call is displayed on the opening screen after power ON.

#### POP-UP TIME

**Function:** Sets the display time of the pop-up screen when setting various functions

**Available Values:** FAST / MID / SLOW

**Default Setting:** MID

**Description:**

**FAST:** Pop-up screen display time is shorter than normal.

**MID:** Pop-up screen display time is normal.

**SLOW:** Pop-up screen display time is longer than normal.

#### SCREEN SAVER

**Function:** Time setting before the screen saver to activate.

**Available Values:** OFF / 1 / 2 / 5 / 15 / 30 / 60 (min)

**Default Setting:** 60min

**Description:** If the transceiver is not operated for the set time, a screen saver will activate to prevent TFT screen burn-in.

#### SCREEN SAVER(BAT)

**Function:** Time setting before the screen saver activates when using the SBR-52LI for operation.

**Available Values:** OFF / 1 / 2 / 5 / 15 / 30 / 60 (min)

**Default Setting:** 5min

**Description:** If the transceiver is not operated for the set time when using battery (SBR-52LI) power, a screen saver will activate to prevent TFT screen burn-in.

#### SAVER TYPE

**Function:** Sets the Screen Saver type.

**Available Values:** Logo / DIMMER / DISP OFF

**Default Setting:** DISP OFF

**Description:**

**Logo:** The "YAESU" logo appears.

**DIMMER:** The screen dims.

**DISP OFF:** The screen turns OFF.

## **AUTO POWER OFF**

---

**Function:** The transceiver can be set to automatically power OFF when there is no operation for a period.

**Available Values:** OFF / 0.5 to 12.0 (hour)

**Default Setting:** OFF

## **LED DIMMER**

---

**Function:** Sets the key LED brightness level.

**Available Values:** OFF / 1 - 20

**Default Setting:** 20

**Description:** The higher the setting, the brighter the illumination becomes.

## DISPLAY SETTING - UNIT -

### POSITION UNIT

**Function:** Unit display of minute of Longitude/Latitude (dd°mm'ss" can be changed. mm' is displayed in 1/100 minute and ss" in seconds.

**Available Values:** MM.MM / MM.ss

**Default Setting:** MM.MM

### DISTANCE UNIT

**Function:** Set the measurement unit for distance.

**Available Values:** km / mile

**Default Setting:** mile

### SPEED UNIT

**Function:** Set the measurement unit for speed.

**Available Values:** km/h / knot / mph

**Default Setting:** mph

### ALTITUDE UNIT

**Function:** Set the measurement unit for altitude.

**Available Values:** m / ft

**Default Setting:** ft

### TEMP UNIT

**Function:** Set the measurement unit for temperature.

**Available Values:** °C / °F

**Default Setting:** °F

### RAIN UNIT

**Function:** Set the measurement unit for precipitation.

**Available Values:** mm / INCH

**Default Setting:** INCH

### WIND UNIT

**Function:** Set the measurement unit for Wind speed.

**Available Values:** m/s / mph

**Default Setting:** mph

## DISPLAY SETTING - SCOPE -

### RBW

**Function:** Sets the resolution of Spectrum Scope display.

**Available Values:** HIGH / MID / LOW

**Default Setting:** HIGH

**Description:** When set to HIGH, the image is finely divided.

### SCOPE CTR

**Function:** Sets the scope screen center and marker position.

**Available Values:** FILTER / CARRIER

**Default Setting:** CARRIER

**Description:**

**FILTER:** Relative to the center of the filter.

**CARRIER:** Based on signal carrier points.

### 2D DISP SENSITIVITY

**Function:** Change the Waterfall Display sensitivity.

**Available Values:** NORMAL / HI

**Default Setting:** HI

**Description:**

**NORMAL:** Display at normal sensitivity.

**HI:** Display at high sensitivity.

### 3DSS DISP SENSITIVITY

**Function:** Change the 3DSS Display sensitivity.

**Available Values:** NORMAL / HI

**Default Setting:** HI

**Description:**

**NORMAL:** Display at normal sensitivity.

**HI:** Display at high sensitivity.

### AVERAGE

**Function:** Set the Scope display averaging function between 2 to 8, or OFF.

**Available Values:** OFF / 2 / 4 / 8

**Default Setting:** OFF

**OFF:** The Scope display refreshes at each sweep interval. Assists in displaying critical spectrum view information.

**2 / 4 / 8:** The Scope display averages 2 to 8 sweeps to smooth the spectrum view.

## DISPLAY SETTING

### - VFO IND COLOR -

#### VMI COLOR VFO

**Function:** Sets the color of VMI (VFO mode indicator) when operating on VFO mode.

**Available Values:** BLUE / GREEN / WHITE / NONE

**Default Setting:** BLUE

#### VMI COLOR MEMORY

**Function:** Sets the color of VMI (VFO mode indicator) when operating on Memory mode.

**Available Values:** BLUE / GREEN / WHITE / NONE

**Default Setting:** WHITE

#### VMI COLOR CLAR

**Function:** Sets the color of VMI (VFO mode indicator) when operating in Clarifier Function.

**Available Values:** RED / NONE

**Default Setting:** RED

## EXTENSION SETTING

### - DATA&TIME -

#### TIME ZONE

**FUNCTION:** Sets the time zone.

**Available Values:** -12.0 - 0.0 - +14.0

**Default Setting:** 0.0

**Description:** Sets the time difference with respect to the UTC (Coordinated Universal Time) in 30 minute increments.

#### DAY

Set the date (Day).

#### MONTH

Set the date (Month).

#### YEAR

Set the date (Year).

#### HOUR

Set the time (Hour).

Set to 24-hour format.

#### MINUTE

Set the time (Minute).

## GPS TIME SET

**FUNCTION:** ON/OFF of the GPS time and date automatic acquisition function.

**Available Values:** AUTO / MANUAL

**Default Setting:** AUTO

**Description:**

**AUTO:** Time data for the internal clock is automatically obtained from the GPS function.

**MANUAL:** GPS time data is not used, and time set manually to the internal clock of this transceiver is prioritized.

## EXTENSION SETTING - MY POSITION -

### MY POSITION

**Function:** Setting the station position.

**Available Values:** GPS / MANUAL

**Default Setting:** GPS

**Description:** Set whether position information for your station is obtained via GPS, or manually entered.

**GPS:** Acquire the station position automatically via GPS.

**MANUAL:** Manually set the station position.

### MY POSITION LATITUDE

**Function:** Setting the latitude of your station.

### MY POSITION LONGITUDE

**Function:** Setting the longitude of your station.

## EXTENSION SETTING - SD CARD -

### MEM LIST LOAD

**Function:** Load the Memory Channel information saved on the SD memory card into the transceiver.

### MEM LIST SAVE

**Function:** Save the Memory Channel information to the SD memory card.

### MENU LOAD

**Function:** Load the Setting Menu information saved on the SD memory card into the transceiver.

### MENU SAVE

**Function:** Save the Setting Menu information to the SD memory card.

### INFORMATIONS

**Function:** Display information from microSD Memory Card.

**Description:** Displays the total capacity and free space of the microSD Memory Card.

### FIRMWARE UPDATE

**Function:** Update the firmware of the FTX-1.

**Description:** When a new firmware update for the FTX-1 is available, go to the YAESU web site to download the programming data and update the FTX-1 Firmware.

### FORMAT

**Function:** Format (initialize) the microSD memory card.

**Description:** Format a microSD Memory Card for use with this transceiver.

## EXTENSION SETTING - SOFT VERSION -

### SOFT VERSION

**Description:** Displays the software version.

## EXTENSION SETTING - CALIBRATION -

### CALIBRATION

**Function:** Display touch position calibration.

**Description:** If the touch position and the operation are different, that is touch does not work or another function works, perform touch position calibration of the TFT display.

1. Select [CALIBRATION] then press the [FUNC] knob.
2. Touch [DONE].
3. Touch “+” at the top left of the display.
4. Touch “+” displayed at another place.
5. Repeat step 3 and finally touch “+” in the center of the display to complete the calibration.

## EXTENSION SETTING - RESET -

### MEMORY CLEAR

**Function:** Memory reset

**Description:** Only the information stored in the Memory Channel is initialized (all erased).



The contents of the memory channel “M-001” will return to the initial setting “7.000.000 MHz, LSB” and cannot be deleted.



Memory information can be saved on the microSD card.

### MENU CLEAR

**Function:** Setting Menu reset

**Description:** Only the contents of the Setting Menu is initialized (factory default).



Information in the setting menu can be saved on the microSD card.

### ALL RESET

**Function:** ALL reset

**Description:** The Memory, Setting Menu and all other settings are initialized and set to the factory default.

## APRS

The APRS of the transceiver is a communication system for data such as messages and station positions using the APRS format. Refer to the separate Operating Manual APRS Edition for details (download the manual from the YAESU website).

# ***YAESU***

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## ***Radio for Professionals***

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### **YAESU MUSEN CO., LTD.**

Omori Bellport Building D-3F  
6-26-3 Minami-Oi, Shinagawa-ku, Tokyo, 140-0013, Japan

### **YAESU USA**

6125 Phyllis Drive, Cypress, CA 90630, U.S.A.

### **YAESU UK**

Unit 4, Concorde Park, Concorde Way, Segensworth North,  
Fareham, Hampshire PO15 5FG, United Kingdom