

YAESU

AIR BAND TRANSCEIVER

FTA-450L

Operating Manual

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IMPORTANT NOTICE!

FCC RF Exposure Compliance Requirements for Occupational Use Only:

The **FTA-450L** has been tested and complies with the Federal Communications Commission (FCC) RF exposure limits for Occupational Use/Controlled Exposure Environment. In addition, the radio complies with the following Standards and Guidelines:

- FCC 96-326, Guidelines for Evaluating the Environmental Effects of Radio-Frequency Radiation.
- FCC OET Bulletin 65 Edition 97-01 (1997) Supplement C, Evaluating Compliance with FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields.
- ANSI/IEEE C95.1-1992, IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz.
- ANSI/IEEE C95.3-1992, IEEE Recommended Practice for the Measurement of Potentially Hazardous Electromagnetic Fields - RF and Microwave.
- This radio is NOT approved for use by the general population in an uncontrolled environment. This radio is restricted to occupational use, work related operations only where the radio operator must have the knowledge to control its RF exposure conditions.**
- When transmitting, hold the radio in a vertical position with its microphone 1 to 2 inches (2.5 to 5 cm) away from your mouth and keep the antenna at least 1 inch (2.5 cm) away from your head and body.**
- The radio must be used with a maximum operating duty cycle not exceeding 50%, in typical Push-to-Talk configurations. DO NOT transmit for more than 50% of total radio use time (50% duty cycle). Transmitting more than 50% of the time can cause FCC RF exposure compliance requirements to be exceeded.**
The radio is transmitting when the “TX” icon is displayed on the upper left corner of the screen of the radio. You can cause the radio to transmit by pressing the PTT button.
- Always use YAESU authorized accessories.**

NOTICE

There are no user-serviceable points inside this transceiver.
All service jobs must be referred to your Authorized Service Center.

INTRODUCTION

The YAESU **FTA-450L** is compact, stylish, solid hand-held transceivers providing communication (transmit and receive) capability on the International Aircraft Communication Band (“COM” band: 118 to 136.975 MHz).

The **FTA-450L** boast a 1.7” x 1.7” (43.2 x 43.2 mm) full dot matrix LCD displaying a plenty of information in a row. The **FTA-450L** includes NOAA weather band monitoring and 200 memory channels. The channel configurations can be easily reprogrammed in minutes using the optional PC Programming Software and your PC.

We recommend that you read this manual in its entirety, so as to understand the many features of the **FTA-450L** completely. Keep this manual handy, so you may use it for reference.

Congratulations!

You now have at your fingertips a valuable communications tool, a YAESU two-way radio! Rugged, reliable and easy to use, your YAESU radio will keep you in constant touch with your friends and colleagues for years to come, with negligible maintenance or down-time.

Please take a few minutes to read this manual carefully. The information presented here will allow you to derive maximum performance from your radio, in case questions arise later on.

We’re glad you joined the YAESU team. YAESU products cover the entire spectrum of radio communications applications, and our worldwide support network is here to serve you. Let us help you get your message across.

ACCESSORIES AND OPTIONS

Supplied Accessories

SBR-12LI	Lithium-ion Battery Pack (7.4V)
SAD-11	AC Charger
SBH-11	Charger Cradle
SDD-12	Cigarette Lighter DC/DC Converter
SRA-13A *1	Helical Antenna
SHB-11	Belt Clip
SCU-15	Headset Adapter Cable
SBT-12	Alkaline Battery Tray
T9101606	USB Cable
L9190192	Ferrite Core

Operating Manual

Warranty Card

- *1 Antenna gain: 2.15 dBi
Impedance: 50 ohms

Available Options

SSM-10A	Speaker Microphone
SEP-10A	Earphone (available only with the SSM-10A)
SEP-11A	Earphone
YCE01	PC Programming Software (Download the YCE01 PC Programming Software from the YAESU website.)

Availability of accessories may vary. Some accessories are supplied as standard per local requirements, while others may be unavailable in some regions. Consult your YAESU Dealer for details regarding these and any newly-available options.

Connection of any non-YAESU-approved accessory, should it cause damage, may void the Limited Warranty for the FTA-450L.

SAFETY PRECAUTIONS

Be sure to read the safety precautions to use this product safely.

Yaesu is not liable for failures and other problems caused due to misuse or use of this product by you or a third party. Also, Yaesu is not liable for damages caused through use of this product by you or a third party except in the case where ordered to pay for damages under the laws.

Type and meaning of the marks



DANGER

Indicates an imminently hazardous situation which, if not avoided, could result in death or serious injury.



WARNING

Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.




CAUTION


Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury or only property damage.

Type and meaning of symbols



Indicates a prohibited action, not to be done in order to use this product safely. For example,  indicates that the product should not be disassembled.



Indicates a required action, to be done in order to use this product safely. For example,  indicates that the power plug should be re-moved.



DANGER



Do not use this product in “an area where use of it is prohibited”, e.g., inside the hospital or train.”

This product can affect electronic or medical devices.



Do not use this product while riding a bicycle or driving a car. Accidents can result.

Be sure to stop the bicycle or car at a safe place before using this product.



Do not perform transmission in a crowded place for the safety of persons using a medical device such as a cardiac pacemaker.

The radio wave emitted from this product can cause the medical device to malfunction and result in an accident.



Do not touch any material leaking from the battery pack with bare hands.

The chemical that has stuck to your skin or entered your eye can cause chemical burns. In such a case, consult the doctor immediately.



Those who are carrying a medical device such as a cardiac pacemaker should not perform transmission near the device. When transmitting, use an external antenna and keep as far as possible away from the external antenna.

The radio wave emitted by the transmitter can cause the medical device to malfunction and result in an accident.



Do not use this product or the battery charger in a place where inflammable gas is generated.

A fire or explosion can occur.



Do not solder or short-circuit the terminal of the battery pack.

A fire, leak, overheating, explosion, or ignition can result. Do not carry the battery pack together with a necklace, hair pin, or small metal objects. A short circuit can result.



WARNING



Do not power this transceiver with a voltage other than the specified power supply voltage.

A fire, electric shock, or damage may result.

SAFETY PRECAUTIONS



Do not use the battery pack for any model other than the specified transceiver.

A fire, leak, overheating, explosion, or ignition can result.



Do not make very long transmissions.

The main body of the transceiver may overheat, resulting in a failure or burns.



Do not disassemble or make any alteration to this product.

An injury, electric shock, or failure can result.



Keep the terminals of the battery pack clean.

If terminal contacts are dirty or corroded, a fire, leak, overheating, explosion, or ignition can result.



Do not handle the battery pack or charger with wet hands. Do not insert or remove the power plug with wet hands.

An injury, leak, fire, or failure can result.



If smoke or strange odor is emitted from the main body, battery pack, or battery charger, immediately turn the transceiver off; remove the battery pack, and remove the power plug from the outlet.

A fire, leak, overheating, damage, ignition, or failure can result. Contact the dealer from which you purchased this product or Yaesu Customer Support.



Do not use the battery pack which is externally damaged or deformed.

A fire, leak, heating, explosion, or ignition can result.



Do not use any battery charger which is not specified by Yaesu.

A fire or failure can result.



When transmitting, keep the transceiver at least 5.0 mm (3/16 inch) away from your body. Use only the supplied antenna. Do not use modified or damaged antennas.



If charging of the battery pack cannot be completed within the specified charging time, immediately remove the power plug of the battery charger from the outlet.

A fire, leak, overheating, explosion, or ignition can result.



CAUTION



Do not dangle or throw this product by holding its antenna.

This product can hit and injure someone. In addition, doing so can result in a transceiver failure or damage.



Do not use transceiver in a crowded place.

The antenna can hit someone, resulting in an injury.



Do not place this transceiver in a place subject to direct sun-light or near a heater.

The transceiver can deform or discolor.



Do not place this transceiver in a humid or dusty place.

A fire or failure can result.



During transmission, keep the antenna as far from you as possible.

Long-time exposure to electromagnetic waves can have a negative impact on your health.



Do not clean the case with thinner or benzene.

Use a soft, dry cloth to clean the case.



If the transceiver is not being used for an extended period, turn it off and remove the battery pack for safety.



Do not drop, strike, or throw the transceiver.

A failure or damage may result.



Keep magnetic cards and video tape away from the transceiver.

The data recorded on cash cards or video tape can be erased.



Charge the battery pack within the temperature range from +5 °C to +35 °C (+41 °F to +95 °F).

Charging the battery pack outside this temperature range can cause leak, overheating, decrease in performance, or reduction in service life can result.

SAFETY PRECAUTIONS



When unplugging the power cord of the battery charger, be sure to hold the power plug.

Pulling the power cord can damage it and cause a fire or electronic shock.



Do not use the earphones or head-phones at an extremely high volume level.

Hearing impairment can result.



Keep this product out of reach of children.

An injury, etc. can result.



Install the belt clip securely.

If they are installed improperly, the FTA-250L may fall or drop, resulting in an injury or damage.



Do not place a heavy object on the power cord of the battery charger.

The battery cord can be damaged, resulting in a fire or electric shock.



Do not use the included battery charger to charge any battery pack which is not specified for use with the charger.

A fire can result.



Do not operate the transmitter near the TV or radio.

Radio disturbance can occur in the transceiver, the TV, or the radio.



Do not use any products other than the specified options and accessories.

A failure can result.



When the battery charger is not in use, remove its power plug from the outlet.



Before discarding the worn battery pack, affix tape or the like to its terminals.



Before using this transceiver in a hybrid or fuel-saving car, be sure to check with the auto-mobile manufacturer regarding use of the transceiver in that car.

Noise generated by an onboard electrical device (inverter, etc.) can disrupt the normal operation of the transceiver.

CONTROLS & CONNECTORS (TOP PANEL)

① **Antenna Jack**

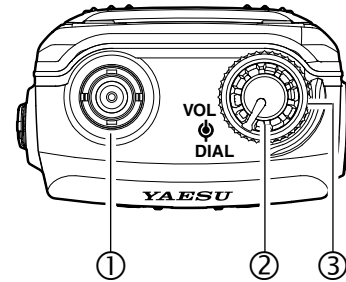
This BNC connector accepts the supplied flexible antenna, or an external antenna designed to provide 50 Ω impedance on the Aircraft Communication Band.

② **VOLUME (Inner) Knob**

Turn this (inner) control clockwise to increase the volume.

③ **DIAL Selector (Outer) Knob**

This (outer) 20-position detented rotary switch tunes the operating frequency or selects the memory channels.



CONTROLS & CONNECTORS (FRONT PANEL)

① LCD (Liquid Crystal Display)

The display shows selected operating conditions, as indicated on page 11.

② Microphone

To transmit, speak into the mic opening in a normal voice level, while pressing the **PTT** switch.

③ Cursor Keys and **ENT** Key

The cursor keys [◀] and [▶] are used to select an item displayed on the LCD.

Press the **ENT** key to determine the selection or entered values.

④ Control Keys

Press the **MENU** key to display the MENU screen.

Press the **BACK** key to return the display to the previous screen.

Press the **SAVE** key to store the current channel information to the memory.

Press and hold the lock key [🔒] to enable the lock feature. Controls and keys will be disabled.

Press and hold again to disable the lock feature.

⑤ **COMM** Key

Press this key to enter the COMM mode instantly.

⑥ Numeric Keypad

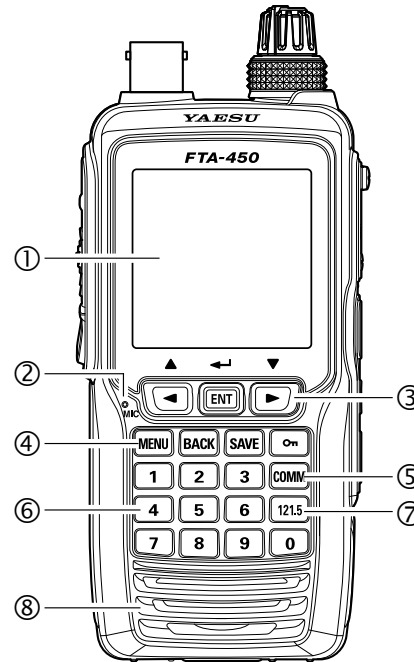
The keypad is used when setting frequencies.

⑦ **121.5** Key

Press and hold this key to access the emergency frequency (121.5 MHz) instantly.

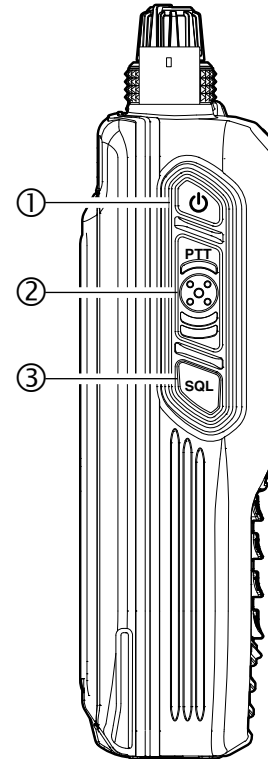
⑧ Loudspeaker

The internal speaker is located in this position.



CONTROLS & CONNECTORS (LEFT SIDE)

- ① **POWER** Switch
Press and hold this button to turn the radio on and off.
- ② **PTT** (Push To Talk) Switch
Press and hold this button to transmit when you are operating in the COM band. Release this button to return to the “Receive” mode. See page 21 for details.
- ③ **SQL** (Squelch) Switch
This button may be pressed to “open” the squelch manually, allowing you to listen for very weak signals. Press and hold this button for 2 seconds to “open” the squelch continuously. Press this button again to resume normal (quiet) monitoring. See page 19 for details.



CONTROLS & CONNECTORS (RIGHT SIDE)

① MIC/SP Jack

You may connect the supplied **SCU-15** Headset Adapter Cable, the optional **SSM-10A** Speaker/Microphone or the optional **SEP-11A** Earphone to this jack. To use this jack, you must first remove the cover from the transceiver body.



Do not allow the FTA-450L to get wet while the MIC/SP cover has been removed.

② DATA Jack

You may connect the optional USB cable to this jack. To use this jack, you must first lift the rubber cover away from the transceiver body.



Do not allow the FTA-450L to get wet while the rubber cover is removed.

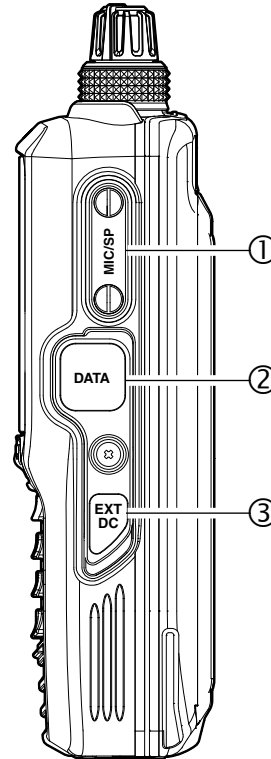
③ EXT DC Jack

When an external 9.5- to 10.5-Volt DC power source is available, you may connect the **SDD-12** Cigarette Lighter DC/DC Converter here. To use this jack, you must first lift the rubber cover away from the transceiver body.

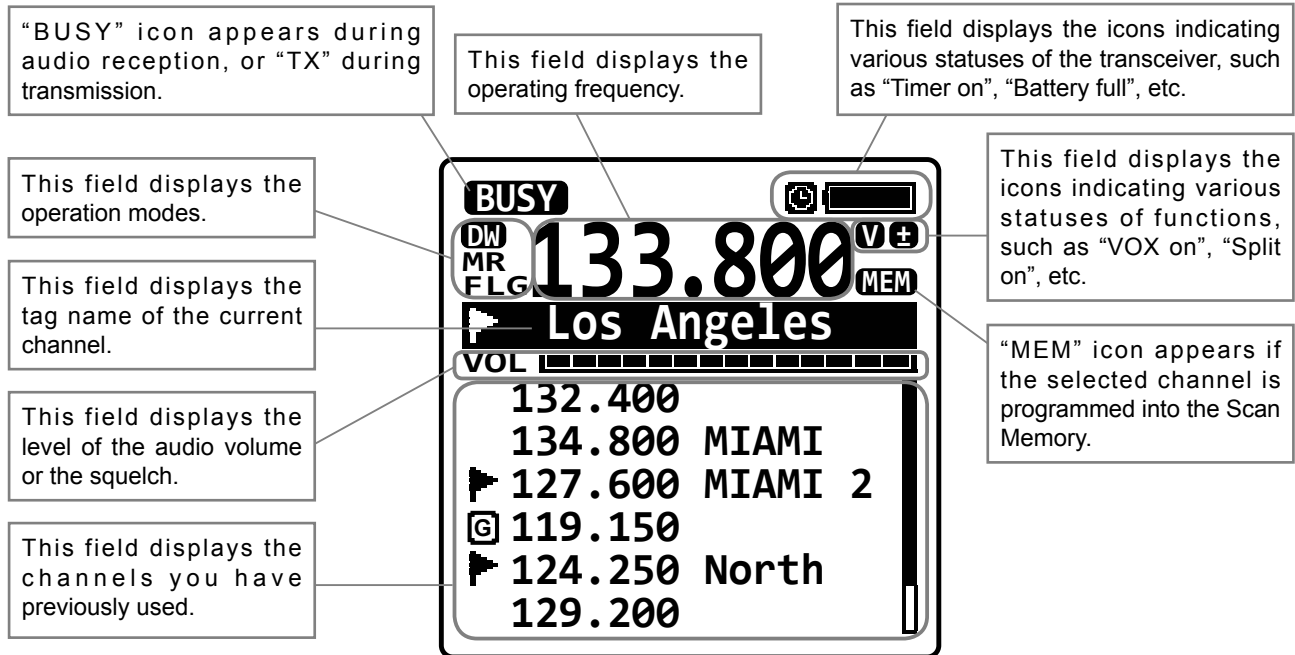


1) Do not allow the FTA-450L to get wet while the rubber cover is removed.

2) Do not connect any accessory unapproved by YAESU to supply DC power.



LCD DISPLAY (COM BAND)



BEFORE YOU BEGIN

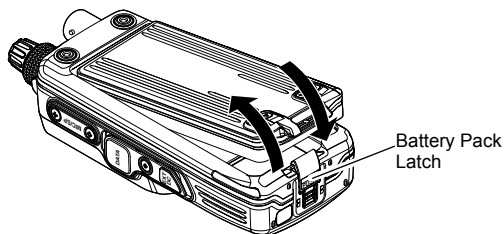
Battery Installation and Removal

- ❑ To install the battery, insert the battery pack **SBR-12LI** into the battery compartment on the back of the transceiver, press the end of the battery pack while pressing the battery pack latch on the bottom of the transceiver, then lock the pack by sliding the locking plate beside the latch until the entire “LOCK” appears.

Note:

Be sure that the rubber gasket on the **SBR-12LI** is not loose when inserting.

- ❑ To remove the battery, turn the transceiver off, slide the locking plate until the “UNLOCK” appears entirely, lift up the end of the battery pack by pressing the battery pack latch, then pull out the battery from the radio.



Do not attempt to open any of the rechargeable Lithium-ion packs, as personal injury or damage to the Lithium-ion pack could occur if a cell or cells become accidentally short-circuited.

Note:

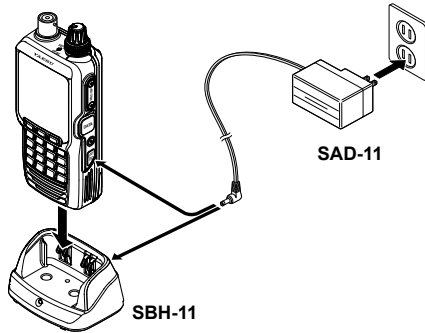
To remove the battery pack after the belt clip **SHB-11** is mounted (see page 15), lift up the clip before you press the battery pack latch.

BEFORE YOU BEGIN


Battery Charging

It is necessary to charge the Lithium-ion battery fully before its first use. Follow the procedure below:

1. Install the Lithium-ion battery pack onto the transceiver. Ensure that the transceiver is switched off.
2. Insert the cable plug of the **SAD-11** Battery Charger into the jack located on the back of the **SBH-11** Charging Cradle, then plug the **SAD-11** into the AC line outlet.



3. Insert the transceiver into the **SBH-11**; the antenna jack should be at the left side when viewing the cradle from the front.
 - You may insert the cable plug of the **SAD-11** into the **EXT DC** jack located on the right

side of the transceiver directly. In this case, the “” icon will appear in the top right corner of the LCD display.

4. If the transceiver is inserted correctly, the RED indicator on the **SBH-11** will glow.
 - A fully-discharged pack will be charged completely in 4 hours, and then the GREEN indicator on the **SBH-11** will glow letting you know the battery has been fully charged.
 - It takes 8 hours for full charge with the **SAD-11** connected to the transceiver directly.

Important Notes:

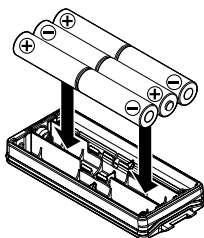
- The **SAD-11** is not designed to power the transceiver for operation (transmission).
- Do not leave the charger connected to the transceiver for continuous periods in excess of 24 hours. Long term overcharging can degrade the Lithium-ion battery pack and significantly shorten its useful life.
- If using a charger other than the **SAD-11**, **SBH-11**, or if using a battery pack other than the **SBR-12LI**, follow the appropriate instructions provided with the charger/battery. Contact your Dealer if you have any doubts about the appropriateness of the particular charger or battery pack you intend to use.

BEFORE YOU BEGIN

Alkaline Battery Tray Installation

The supplied **SBT-12** Battery Tray allows operation of the **FTA-450L** using six “AA” size alkaline battery cells.

- ❑ When installing a cell, insert the (–) end first, then press in the (+) end so the cell snaps into place. Pay attention to the polarity indicated inside the case.



SBT-12
Alkaline Battery Tray




The SBT-12 must not be used with rechargeable cells. The SBT-12 does not contain the thermal and over-current protection circuits required when utilizing Ni-Cd and Ni-MH cells.

Note: Replace all six cells at the same time in case of low battery.

- ❑ To install the **SBT-12**, remove the Lithium-ion battery pack first from the transceiver, turn the open side of the **SBT-12** down, then insert it into the battery compartment.

Note: Be sure that the rubber gasket on the **SBT-12** is not loose when inserting.


Low Battery Indication

As your battery discharges during use, the voltage will gradually become lower. When the battery voltage reaches 6.0 Volts, the “” icon will blink on the LCD display, indicating that the battery pack must be recharged or the alkaline battery cells must be replaced before further use.

- Avoid recharging Lithium-ion batteries before the “Low Battery” indicator is observed, as this can degrade the charge capacity of your Lithium-ion battery pack. YAESU recommends that you carry an extra, fully-charged pack with you so you will not lose communications capability due to a depleted Lithium-ion battery.
- The fully-charged battery lasts for 13.5 hours on the **FTA-450L** under the conditions below:
Battery saver OFF
Operation ratio TX:RX:Standby=6:6:48 (duty cycle)

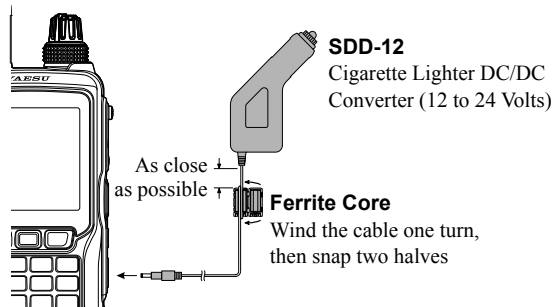
BEFORE YOU BEGIN

External DC Power Supply Connection

You may insert the cable plug of the optional **SDD-12** Cigarette Lighter DC/DC Converter into the **EXT DC** jack located on the right side of the transceiver. In this case, the “” icon will appear in the top right corner of the LCD display.

When making DC connections via the **SDD-12**, be absolutely certain to observe the proper voltage level and polarity guidelines.

- The **SDD-12** can be connected to 12 to 24 Volt DC power sources.



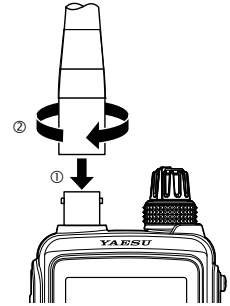
- For noise reduction from exogenous noise, wind one turn of the **SDD-12** cable around the ferrite core, and snap its two halves together, per the illustration above. Attach the ferrite core as close as possible to the **SDD-12** body, as shown.



Do not connect any accessory unapproved by YAESU to supply DC power; otherwise the FTA-450L may be damaged.

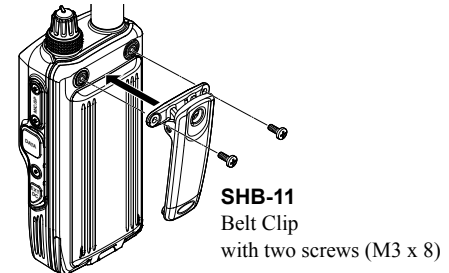
Antenna Installation

- To attach the supplied antenna to the **FTA-450L**, grasp the base of the antenna firmly, and exert a moderate “pinching” pressure on the base as you press the antenna onto the radio’s antenna connector. While exerting this pressure, rotate the antenna clockwise 1/4 turn to lock the antenna in place.



Belt Clip Installation

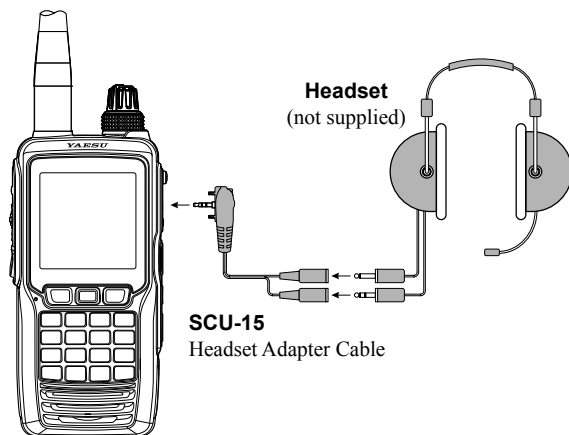
You may mount the clip to the rear of the **FTA-450L** using the supplied screws.



BEFORE YOU BEGIN

Headset Connection

You may connect an optional headset using the supplied **SCU-15** Headset Adapter Cable (see also page 62).



1. Remove the two screws and cover of the **MIC/SP** jack located on the right side of the transceiver.
2. Insert the plug of the **SCU-15** to the **MIC/SP** jack.
3. Fix the plug with two screws attached to the **SCU-15**.
 - Either of the plug directions are acceptable as long as the both screws fit the screw holes.
4. Insert the plugs of the headset to the sockets of the **SCU-15**.

Precautions

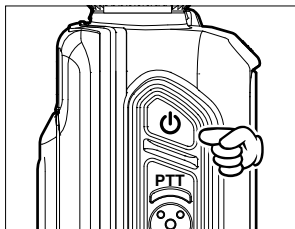
- The **FTA-450L** is capable of two-way communication on channels used for critical aviation safety communications. Therefore, it is important that this radio be kept away from children or other unauthorized users at all times.
- Do not dispose of the Lithium-ion battery pack in a fire. Do not carry a Lithium-ion battery pack in your pocket, where keys or coins could short the terminals. This could create a serious fire/burn danger, and possibly cause damage to the Lithium-ion pack.
- The **FTA-450L** is designed to have the waterproof capability equivalent to IPX5. Do not allow the radio to become submerged, and do not subject it to water spray under pressure.

BASIC OPERATION

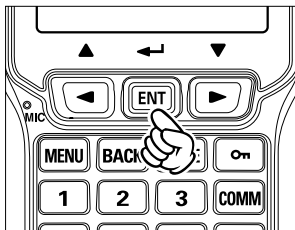
Reception (COM Band)

Turning the radio on and off

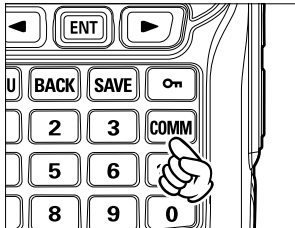
- ❑ To turn the radio on, press and hold the **POWER** switch.



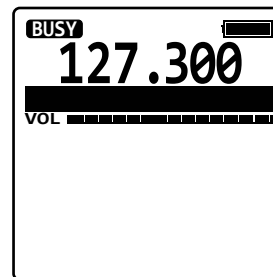
- ❑ If you agree with the warning message, press the [ENT] key.



- ❑ A channel frequency will appear on the display. If not, press the [COMM] key.



- ❑ The “**BUSY**” icon appears on the display when the audio signal is received on the current frequency.

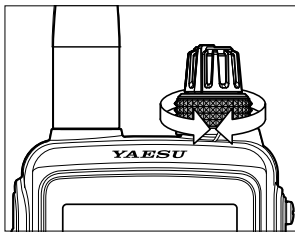


- ❑ To turn the radio off, press and hold the **POWER** switch.

BASIC OPERATION

Adjusting the frequency

- ❑ You may turn the **DIAL** selector (outer) knob on the top panel to choose the desired operating frequency. The channel frequency will appear on the LCD.



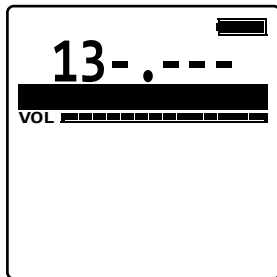
- ❑ Directly entering frequencies from the keypad is the easiest method if you know the frequency on which you wish to operate. Just enter the five digits of the frequency to move to that frequency.

For example, to set 134.35 MHz,

press [1] → [3] → [4] → [3] → [5].

To set 118.275 MHz, you do not need to press the final “5” in the frequency as below:

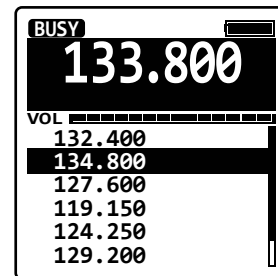
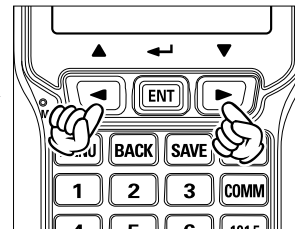
[1] → [1] → [8] → [2] → [7].



- ❑ You may recall the operating frequency that you have used by pressing the [ENT] key.

A list of frequencies you have used will appear below the VOL meter on the display.

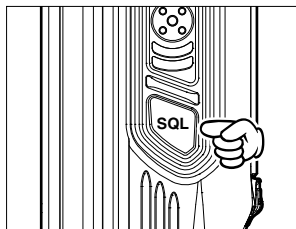
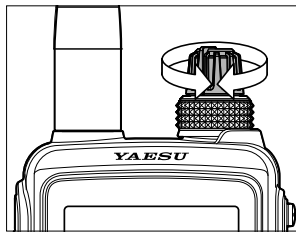
Select the desired frequency by pressing the [◀] or [▶] key, then press the [ENT] key.



BASIC OPERATION

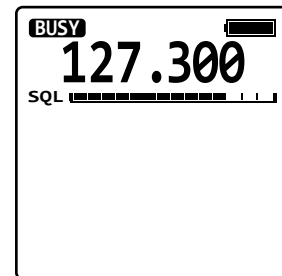
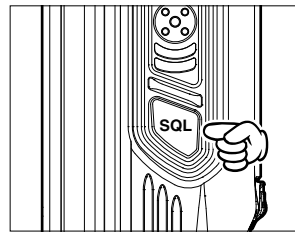
Adjusting the volume

- ❑ Rotate the **VOL** (inner) knob to set the volume level. If no signal is present, press the **SQL** switch; background noise will now be heard, and you may use this noise to set the **VOL** knob for the desired audio level. Press and hold the **SQL** switch to silence the noise and resume normal (quiet) monitoring.



Adjusting the squelch

- ❑ Press the **SQL** switch, then rotate the **DIAL** selector knob to set the squelch threshold (0 to 15) so that the receiver is just silenced. A higher number indicates that a higher signal level is required in order to open the squelch.



- ❑ Press and hold the **SQL** switch to set the squelch threshold to 0 (off).
- ❑ Your new setting will be saved each time you perform either of the operations above.

BASIC OPERATION

Monitor Switch

When listening to a very weak signal from an aircraft or ground station, you may observe the signal disappearing periodically as the incoming signal strength becomes too weak to override the squelch threshold setting.

To disable the squelch temporarily, press and hold the **SQL** switch for 2 seconds. The squelch will remain open and you should have a better chance of hearing weak signals.

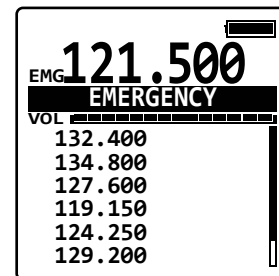
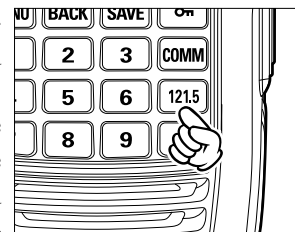
To return to normal operation, press the **SQL** momentarily.

Accessing the 121.5 MHz Emergency Frequency

The **FTA-450L** can quickly access the 121.500 MHz emergency frequency. This function can be activated even when the keypad lock function (described on page 36) is in use.

- ❑ To access the emergency frequency, press and hold the **[121.5]** key.

After four beeps, the transceiver enters the emergency mode and the frequency is automatically tuned to 121.500 MHz.



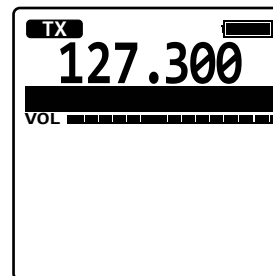
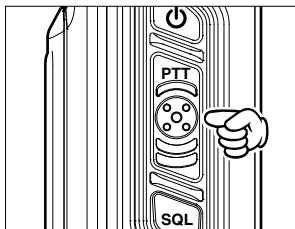
- ❑ To exit the emergency mode, press the **[COMM]** key. The message confirming the cancellation of the emergency mode will appear. Press the **[◀]** or **[▶]** key to select "YES", then press the **[ENT]** key.

BASIC OPERATION

Transmission (COM Band)

- ❑ To transmit, press and hold the **PTT** switch. Speak into the microphone area of the front panel grille in a normal voice level.

The “**TX**” icon, which indicates that the **FTA-450L** is in the transmit mode, appears on the display.

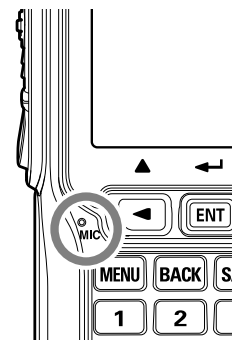


- ❑ To return to the receive mode, release the **PTT** switch.

Operating Advice: Use of Internal Microphone

Your **FTA-450L** is sealed against water ingress, which includes waterproof seals around the microphone and speaker enclosure. This requires that you focus your speech in the direction of the microphone's location, so as to ensure sufficient voice input to the radio. Refer to the illustration and observe the location of the internal microphone.

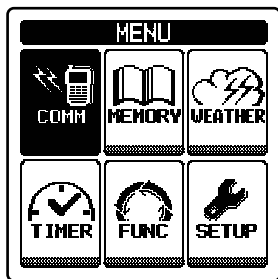
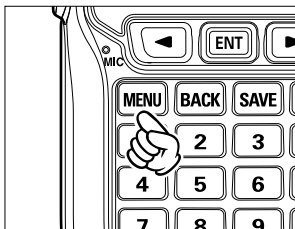
If you find it difficult to utilize the **FTA-450L** conveniently and safely while speaking directly into the microphone, we recommend the use of the **SSM-10A** Speaker/Microphone (option), or an aftermarket aviation headset with boom microphone.



BASIC OPERATION

Operation Modes

The **FTA-450L** operate in either of the modes listed below. You can switch the modes via the MENU screen displayed by pressing the **[MENU]** key on the front panel.



When turning on the **FTA-450L**, the last mode you have used before turning off will automatically be entered.

- **COMM**
The basic operating mode for communication.
- **MR (MEMORY)**
This mode provides you with the ability to store and recall as many as 200 channels in the radio's main memory bank.
- **WX (WEATHER) (USA/Canada Only)**
This mode allows you to receive NOAA weather channel broadcasts. The 10 weather channels are pre-programmed at the factory.
- **SETUP**
This mode allows certain aspects of your radio's configuration to be customized for your personal operating conditions.

BASIC OPERATION

Convenient menu items

The MENU screen also includes the following items which provide advanced and convenient usage of the **FTA-450L**.

○ **TIMER**

You may use the **FTA-450L** as a countdown timer or a stopwatch through this menu.

○ **FUNCTION**

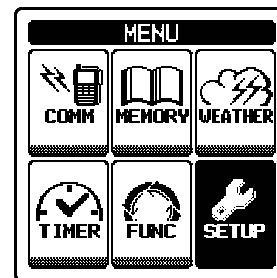
Enables and disables various functions such as scan and dual watch features through this menu.

Resetting the Radio

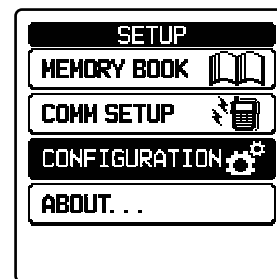
To clear all memories and other settings to factory defaults:

1. Press the [**MENU**] key to display the MENU screen.

2. Select “SETUP” on the screen by pressing the [◀] or [▶] key, and then press the [**ENT**] key.

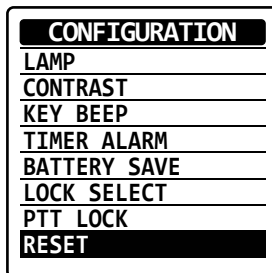


3. Select “CONFIGURATION” on the screen by pressing the [◀] or [▶] key, and then press the [**ENT**] key.

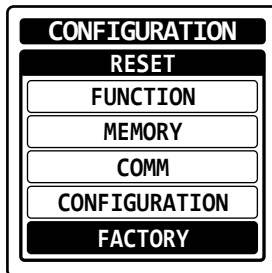


BASIC OPERATION

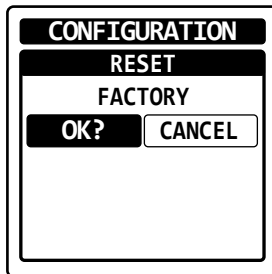
4. Select “RESET” on the screen by pressing the [◀] or [▶] key, and then press the [ENT] key.



5. Select “FACTORY” on the screen by pressing the [◀] or [▶] key, and then press the [ENT] key.



6. Select “OK?” on the screen by pressing the [◀] or [▶] key, and then press the [ENT] key.



The initialization will start and then “COMPLETED!” will be displayed after the radio returns to factory default.

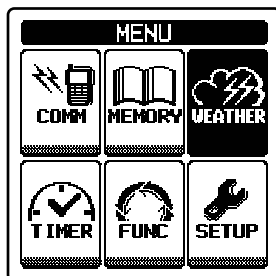
ADVANCED OPERATION

Reception of Weather Channel Broadcasts

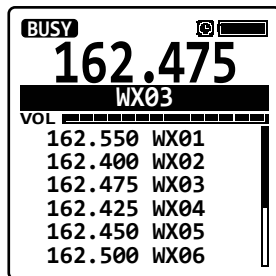
- *Weather Channels for USA/ Canada only* -

The **FTA-450L** can receive VHF weather channel broadcasts, which may assist your flight planning. The **FTA-450L** includes a special bank capable of storing 10 weather channels, which simplifies access when you are in an unfamiliar location.

- ❑ To receive weather channels, press the [**MENU**] key, select “WEATHER” on the screen by pressing the [**◀**] or [**▶**] key, and then press the [**ENT**] key.



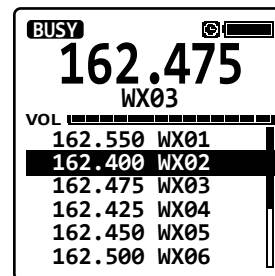
The last channel you have tuned will be received.



- ❑ You can also select a weather channel from the pre-programmed list with the **DIAL** selector knob.

To confirm the weather channel frequency selection, press the [**ENT**] key.

- ❑ To exit the WX mode, press the [**MENU**] key, select the mode other than “WEATHER” on the screen by pressing the [**◀**] or [**▶**] key, and then press the [**ENT**] key.



ADVANCED OPERATION

Weather alert reception

In the event of extreme weather disturbances, such as storms and hurricanes, the NOAA (National Oceanic and Atmospheric Administration) sends a weather alert accompanied by a 1050 Hz tone and subsequent weather report on one of the NOAA weather channels.

When the radio receives the weather alert on the operating frequency, it displays a warning as below on the screen and continues to make alarm sounds until either of the keys is pressed.



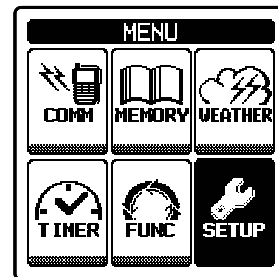
You may enable or disable the alarm function when receiving the weather alert signal via the COMM SETUP menu. See page 52 for details.

Dual Watch Operation

The dual watch feature automatically checks for activity on the P-ch (priority channel) set via the COMM SETUP menu while you are operating on another channel. During the dual watch operation, the current channel and the P-ch will be polled alternately for a 200 ms interval.

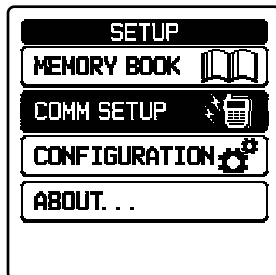
Setting the P-ch

1. Press the [MENU] key to display the MENU screen.
2. Select "SETUP" on the screen by pressing the [◀] or [▶] key, and then press the [ENT] key.

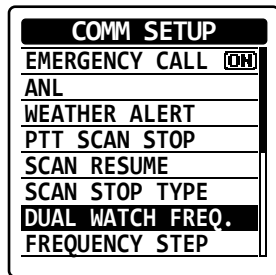


ADVANCED OPERATION

3. Select “COMM SETUP” on the screen by pressing the [◀] or [▶] key, and then press the [ENT] key.



4. Select “DUAL WATCH FREQ.” on the screen by pressing the [◀] or [▶] key, and then press the [ENT] key.



5. Enter the frequency you want to poll, with the keypad.



6. Select “FINISH” on the screen by pressing the [◀] or [▶] key, and then press the [ENT] key.

The frequency will be determined and the display will return to the COMM SETUP menu.

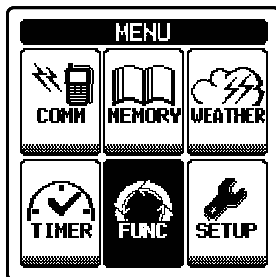


ADVANCED OPERATION

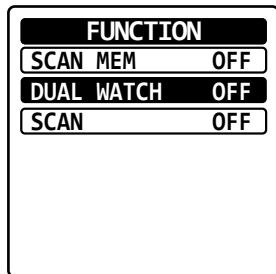
Starting the dual watch

1. Press the [MENU] key to display the MENU screen.

2. Select “FUNC” on the screen by pressing the [◀] or [▶] key, and then press the [ENT] key.



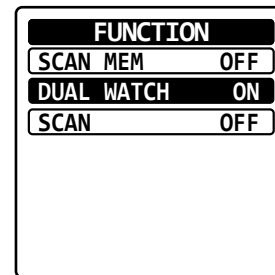
3. Select “DUAL WATCH” on the screen by pressing the [◀] or [▶] key, and then press the [ENT] key.



- If “ON” is displayed in the right hand of “DUAL WATCH”, the **FTA-450L** is performing the dual watch.

The display will return to the previous screen and the “**DW**” icon will be displayed, indicating the FTA-450L is in dual watch.

- When the radio encounters a signal on the current channel, the radio polls both channels alternately with longer staying time on the current channel.
- When the radio encounters a signal in the P-ch, the radio stays on the P-ch until the signal disappears, and the frequency indication on the display blinks. After the signal disappears, the dual watch resumes.
- To stop the dual watch, select “DUAL WATCH” and press the [ENT] key in the FUNCTION menu.



ADVANCED OPERATION

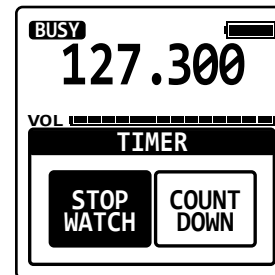
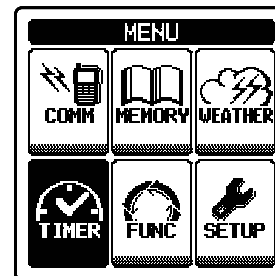
Timer Mode Operation

The **FTA-450L** both provide a “Stopwatch” timer and a “Countdown” timer. These can be used for a variety of time-keeping purposes.

Even while the timer is in operation, you can move to the other operation modes to receive, transmit, scan, etc.

Using the stopwatch timer

1. Press the **[MENU]** key to display the MENU screen.
2. Select “TIMER” on the screen by pressing the **[◀]** or **[▶]** key, and then press the **[ENT]** key.
3. Select “STOPWATCH” on the screen by pressing the **[◀]** or **[▶]** key, and then press the **[ENT]** key.

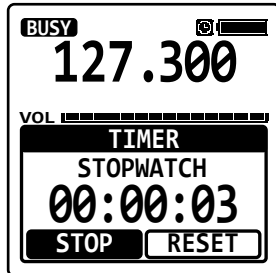
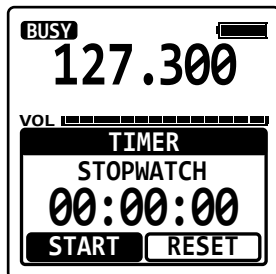


ADVANCED OPERATION

4. To start the counting, select “START” on the screen by pressing the [◀] or [▶] key, and then press the [ENT] key.

The displayed time will increase and “START” changes to “STOP”.

The “📶” icon appears on the top right of the display while counting.

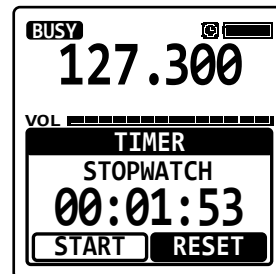


5. To stop the counting, select “STOP” and press the [ENT] key.

To resume the counting, select “START” changed from “STOP” and press the [ENT] key again.



6. To clear the count, select “RESET” on the screen by pressing the [◀] or [▶] key, and then press the [ENT] key.



If “RESET” is selected while counting, the timer will continue to count from “00:00:00”.

If “RESET” is selected while stopping, the displayed time will be changed to “00:00:00” and the timer will keep stopping.

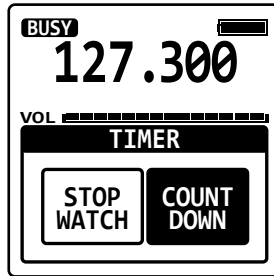
Note:

You may change the receive frequency while counting. Select the tag name field with the [◀] or [▶] key, then press the [ENT] key to display the recall screen listing the frequencies you have used temporarily on the display, so that you may select a frequency from the list with the [◀] or [▶] key or change the frequency with the **DIAL** selector knob.

ADVANCED OPERATION

Using the countdown timer

1. Press the [MENU] key to display the MENU screen.
2. Select “TIMER” on the screen by pressing the [◀] or [▶] key, and then press the [ENT] key.
3. Select “COUNTDOWN” on the screen by pressing the [◀] or [▶] key, and then press the [ENT] key.



4. Input the time with the keypad or the DIAL selector knob, and then press the [ENT] key. Press the [◀] or [▶] key to move the cursor to hour, minute, or second. Press the [BACK] key to cancel the input time.



5. To start the counting, select “START” on the screen by pressing the [◀] or [▶] key, and then press the [ENT] key.

The displayed time will decrease and “START” changes to “STOP”.

The “⌚” icon appears on the top right of the display while counting.



6. To stop the counting, select “STOP” and press the [ENT] key.

To resume the counting, select “START” changed from “STOP” and press the [ENT] key again.



ADVANCED OPERATION

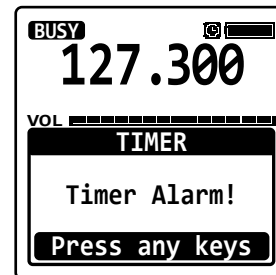
7. To clear the count, select “RESET” on the screen by pressing the [◀] or [▶] key, and then press the [ENT] key.
The displayed time will be changed to “00:00:00” and the timer will stop.



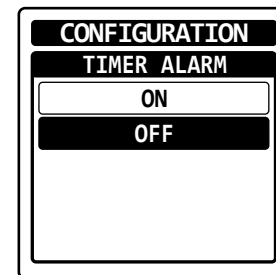
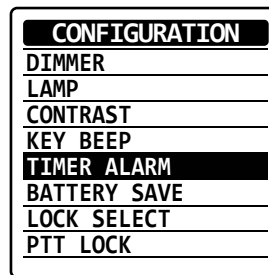
Note:

You may change the receive frequency while counting. Select the tag name field with the [◀] or [▶] key, then press the [ENT] key to display the recall screen listing the frequencies you have used temporarily on the display, so that you may select a frequency from the list with the [◀] or [▶] key or change the frequency with the **DIAL** selector knob.

- When the count-down timer reaches “00:00:00”, the beeps will continuously sound and “Timer Alarm!” will be displayed on the screen. Press any key to stop the beeps.



- You can set the timer to alarm without beeps. Select “OFF” on the item “TIMER ALARM” of the CONFIGURATION menu in the SETUP mode.



ADVANCED OPERATION

TOT Feature

The TOT (time-out timer) shuts off the transceiver after continuous transmission exceeds the programmed time. This feature prevents unintended transmission by mistake and reduces battery consumption.

To select the TOT, select either of “1min”, “2min”, “3min”, “4min”, “5min” on the item “TX TOT” of the COMM SETUP menu in the SETUP mode.

COMM SETUP
FREQUENCY STEP
TX TOT
MIC SELECT
SIDE TONE
AF PITCH CONT.
VOX
VOX LEVEL
VOX DELAY

COMM SETUP
TX TOT
1min
2min
3min
4min
5min

Battery Saver during Reception

One of the important features of the **FTA-450L** is its battery saver, which “puts the radio to sleep” for a time interval, periodically “waking it up” to check for activity. If somebody is talking on the channel, the **FTA-450L** will remain in the “awake” mode, then resume its “sleep” cycles. This feature significantly reduces battery drain.

To activate the battery saver, select one of the following interval time ratios on the item “BATTERY SAVE” of the CONFIGURATION menu in the SETUP mode.

- 50% ... Sleeps for 100 ms after 100 ms awake
- 70% ... Sleeps for 250 ms after 100 ms awake
- 80% ... Sleeps for 450 ms after 100 ms awake
- 90% ... Sleeps for 900 ms after 100 ms awake

CONFIGURATION
DIMMER
LAMP
CONTRAST
KEY BEEP
TIMER ALARM
BATTERY SAVE
LOCK SELECT
PTT LOCK

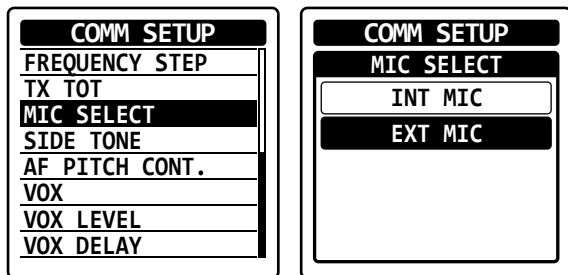
CONFIGURATION
BATTERY SAVE
OFF
50%
70%
80%
90%

ADVANCED OPERATION

Using the Headset Microphone

If you want to use the microphone of an aviation headset, change the assignment of microphone controlled with the **PTT** switch.

To assign the headset microphone, select “EXT MIC” on the item “MIC SELECT” of the COMM SETUP menu in the SETUP mode.



When an optional aviation headset is connected, the **PTT** switch on the radio will activate the headset microphone for transmission.

Note:

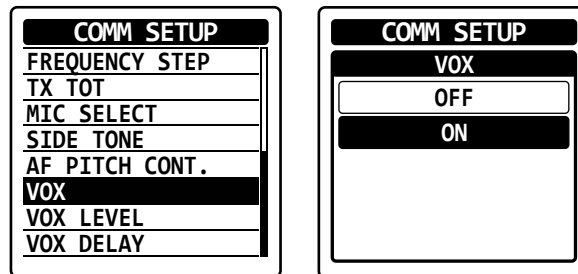
If you find it difficult to use the **PTT** switch of the radio, we recommend to use an aftermarket external PTT switch. See also page 62 for details.

VOX Operation

If you want to have both hands free, use a headset and activate the VOX (voice-actuated transmit/receive switching) system.

Notes:

- The VOX system does not work when using just the internal microphone; an external headset must be used.
- Do not activate the VOX system when connecting the optional microphone **SSM-10A**.
- To activate the VOX system, select “ON” on the item “VOX” of the COMM SETUP menu in the SETUP mode.



The “**V**” icon, which indicates that the VOX system is active, will appear at the right side of the channel frequency when the display returns to the COM band screen.

ADVANCED OPERATION

- ❑ To adjust the VOX gain, select one of the following gain levels on the item “VOX LEVEL” of the COMM SETUP menu in the SETUP mode.

MIN / LEVEL1 / LEVEL2 / LEVEL3 / MAX

- ❑ To set the VOX delay, select one of the following times on the item “VOX DELAY” of the COMM SETUP menu in the SETUP mode.

0.5sec / 1.0sec / 1.5sec / 2.0sec / 3.0sec

COMM SETUP
VOX LEVEL
MIN
LEVEL1
LEVEL2
LEVEL3
MAX

COMM SETUP
VOX DELAY
0.5sec
1.0sec
1.5sec
2.0sec
3.0sec

Side Tone Control

When utilizing an external headset, you may monitor your own voice when talking into the microphone through the headphones.

Note:

Do not activate the side tone function when connecting the optional microphone **SSM-10A**.

- ❑ To activate the monitoring of your voice (side tone), select one of the following side tone level on the item “SIDE TONE” of the COMM SETUP menu in the SETUP mode.

MIN / LEVEL1 / LEVEL2 / MAX

COMM SETUP
FREQUENCY STEP
TX TOT
MIC SELECT
SIDE TONE
AF PITCH CONT.
VOX
VOX LEVEL
VOX DELAY

COMM SETUP
SIDE TONE
OFF
MIN
LEVEL1
LEVEL2
MAX

- ❑ To change the side tone level temporarily during the monitoring, rotate the **DIAL** selector knob when pressing and holding the **PTT** switch.

ADVANCED OPERATION

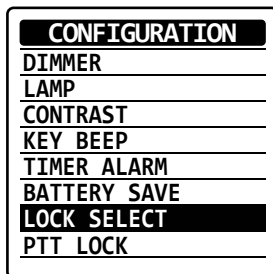
Lock Function

This function prevents accidental changes to the frequency setting and the keypad controls.

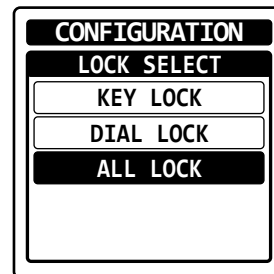
Setting the lockout configuration

You may choose the controls to be locked.

1. Press the **[MENU]** key to display the MENU screen.
2. Select “SETUP” on the screen by pressing the [**◀**] or [**▶**] key, and then press the **[ENT]** key.
3. Select “CONFIGURATION” on the screen by pressing the [**◀**] or [**▶**] key, and then press the **[ENT]** key.
4. Select “LOCK SELECT” on the screen by pressing the [**◀**] or [**▶**] key, and then press the **[ENT]** key.



5. Select one of the following lock configuration by pressing the [**◀**] or [**▶**] key, and then press the **[ENT]** key.
KEY LOCK / DIAL LOCK
/ ALL LOCK

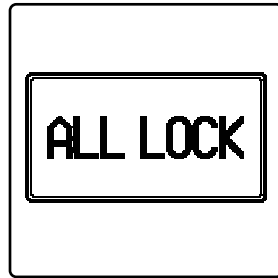
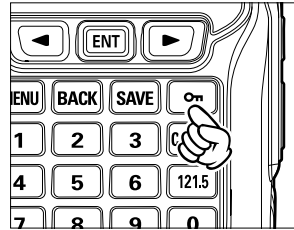


The setting will be determined and the display will return to the CONFIGURATION menu.

ADVANCED OPERATION

Activating the lock feature

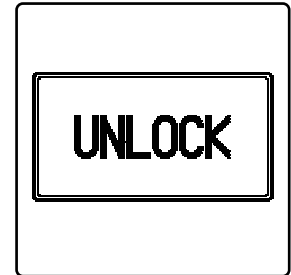
- ❑ Press and hold the [**On**] key.
According to the setting of the lockout configuration, either of “KEY LOCK”, “DIAL LOCK”, or “ALL LOCK” will appear on the screen for 2 seconds and then the display will return to the previous screen.



- ❑ While the **FTA-450L** is locked, the controls with the **DIAL** selector knob and/or the keys except the **PTT** switch, the **POWER** switch, and the [121.5] key are disabled.

If the **DIAL** selector knob is rotated or any of the keys is pressed, either of “DIAL LOCK”, “KEY LOCK”, or “ALL LOCK” will appear on the screen for 2 seconds and then the display will return to the previous screen.

- ❑ To turn the lock feature off, press and hold the [**On**] key again.
“UNLOCK” will appear on the screen for 2 seconds and then the display will return to the previous screen.



ADVANCED OPERATION

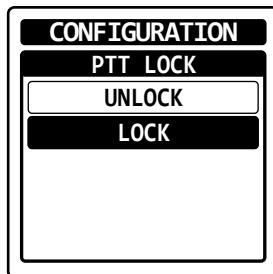
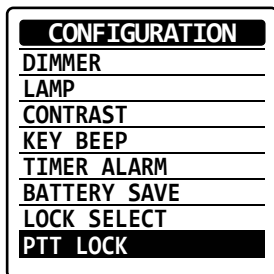
PTT Lock Function

This function prevents accidental transmissions by locking or disabling the PTT switch.

Turning lock/unlock the PTT lock function

You may enable or disable the PTT lock function.

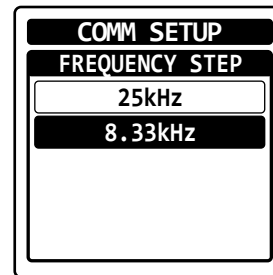
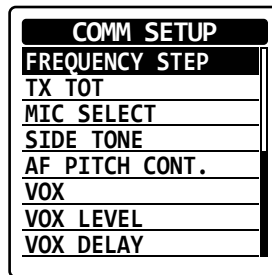
1. Press the **[MENU]** key to display the MENU screen.
2. Select "SETUP" on the screen by pressing the [**◀**] or [**▶**] key, and then press the **[ENT]** key.
3. Select "CONFIGURATION" on the screen by pressing the [**◀**] or [**▶**] key, and then press the **[ENT]** key.
4. Select "PTT LOCK" on the screen by pressing the [**◀**] or [**▶**] key, and then press the **[ENT]** key.
5. Select "UNLOCK" or "LOCK" by pressing the [**◀**] or [**▶**] key, and then press the **[ENT]** key.



Changing the Channel Steps

The synthesizer of the **FTA-450L** provides the option of utilizing 8.33/25 kHz channel steps.

The **FTA-450L** is set up with default channel steps of 25 kHz. If you need to change the channel step increments, select "8.33kHz" on the item "FREQUENCY STEP" of the COMM SETUP menu in the SETUP mode.



ADVANCED OPERATION

Notes:

- The 8.33 kHz steps are available in the COM Band only.
- When you set the channel step to 8.33 kHz, the channel display differs from actual operating frequency; see the chart below. However, the operator (pilot, tower, control, etc.) will call out the frequency according to what the display indicates.

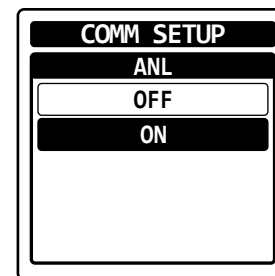
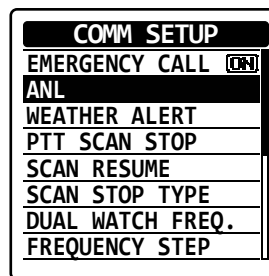
Operating Frequency	Display	
	8.33 kHz Step	25 kHz Step
1**.0000 MHz	1**.005	1**.000
1**.0083 MHz	1**.010	
1**.0166 MHz	1**.015	
1**.0250 MHz	1**.030	1**.025
1**.0333 MHz	1**.035	
1**.0416 MHz	1**.040	
1**.0500 MHz	1**.055	1**.050
1**.0583 MHz	1**.060	
1**.0666 MHz	1**.065	
1**.0750 MHz	1**.080	1**.075
1**.0833 MHz	1**.085	
1**.0916 MHz	1**.090	

- The adjacent channel selectivity will be slightly degraded while receiving using 8.33 kHz channel steps.

ANL Feature

For reduction of impulse noise, such as that produced by an engine's ignition system, the ANL (automatic noise limiter) feature may prove helpful.

To activate the ANL, select "ON" on the item "ANL" of the COMM SETUP menu in the SETUP mode.



MEMORY OPERATION

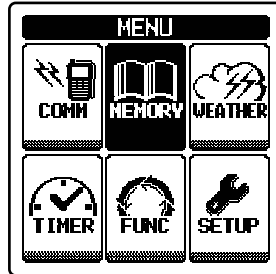
The **FTA-450L** is capable of programming up to 200 user-programmable memory channels with channel frequency, position information, channel tag (name) up to 15 characters, and flag (marking for search refinement).

The stored channels can be assigned to ALL, FLAG or Group Memory (GP1-GP8), which can be named with up to 10 characters.

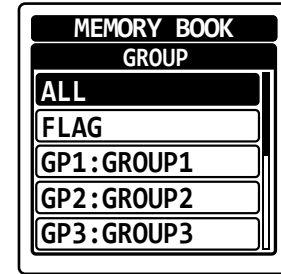
The **FTA-450L**'s memory system allows you to store, label, and recall channel frequencies you may use frequently.

Recalling the Memories

1. Press the [**MENU**] key to display the MENU screen.
2. Select "MEMORY" on the screen by pressing the [**◀**] or [**▶**] key, and then press the [**ENT**] key.



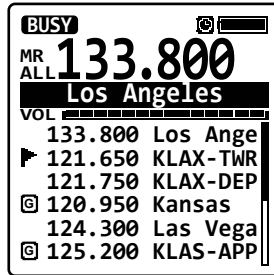
3. Select a group that the desired channel belongs to, by pressing the [**◀**] or [**▶**] key followed by the [**ENT**] key.



- The memory channels belong to either of the following groups.
 - ALL ...Group including all the memory channels
 - FLAG ...Group of memory channels you have set the item "Flag" when storing
 - GP1 to GP8...Groups of memory channels that you can set "GP1" to "GP8" when storing.

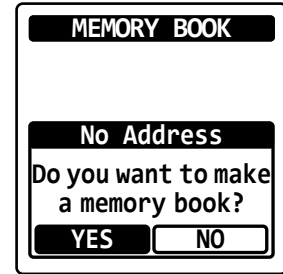
MEMORY OPERATION

The frequency and tag name of the channel listed first, “**MR**” which indicates that the **FTA-450L** is in the MR (memory recall) mode, and the group name selected in step 3 will appear on the upper field of the display.



- If the channel has the setting of flag or groups, the “▶” icon or “Ⓞ” group icon will appear at the left side of its tag name.
- The list of memory channels will also appear below the VOL meter on the display. You may move to the list by pressing the [ENT] key, then select and tune to one of the channels in the list by pressing the [◀] or [▶] key followed by the [ENT] key.

- If you have not yet stored any memory channel, a dialog box titled “No Address” will appear, which asks whether you want to make an entry. Select “YES” and press the [ENT] key to add memory channel entries.



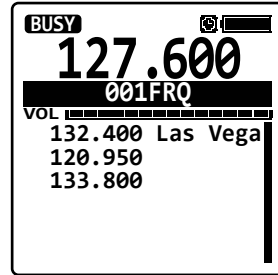
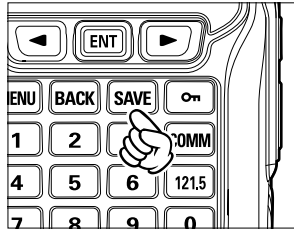
See page 43 for the detailed procedure of storing channel information.

- To exit the MR mode, press the [COMM] key.

MEMORY OPERATION

Instant Storage

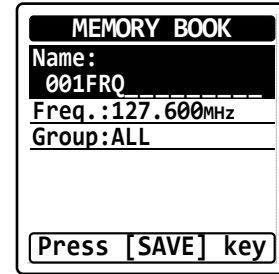
- Select a desired frequency in the COMM mode, then press the **[SAVE]** key. The frequency will be stored and a tag name automatically assigned will appear on the display.



- If you want to customize the information to be stored, press and hold the **[SAVE]** key. The MEMORY BOOK form appears on the display, with the channel name (tag), frequency, flag, and position information (if exists) already filled.

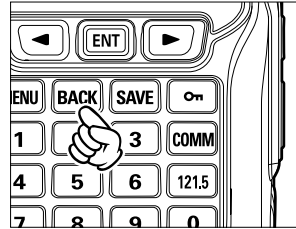
Press the [**◀**] or [**▶**] key to select the item, then press the **[ENT]** key.

Input letters and/or numbers with the keypad or the **DIAL** selector knob, or select a setting with the [**◀**] or [**▶**] key, then press the **[ENT]** key. After all the inputs or changes have been done, select "PRESS **[SAVE]** KEY" at the bottom of the display with the [**◀**] or [**▶**] key, then press the **[ENT]** key to store the frequency into the memory.



MEMORY OPERATION

- ❑ Press the **[BACK]** key to cancel the changes or inputs.



Note:

You cannot store weather channels to the memory by pressing the **[SAVE]** key during the WX mode.

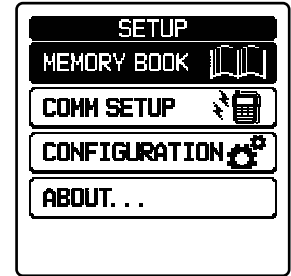
Maintenance of the Memory

Adding new memory channels, editing the stored information, and deleting the stored addresses are allowed through the SETUP mode.

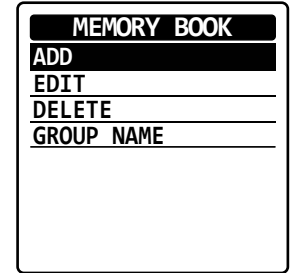
Adding entries

1. Press the **[MENU]** key to display the MENU screen.
2. Select “SETUP” on the screen by pressing the [**◀**] or [**▶**] key, and then press the **[ENT]** key.

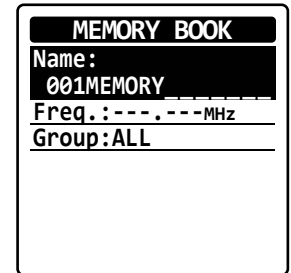
3. Select “MEMORY BOOK” on the screen by pressing the [**◀**] or [**▶**] key, and then press the **[ENT]** key.



4. Select “ADD” by pressing the [**◀**] or [**▶**] key, and then press the **[ENT]** key.



5. Select the item, input letters and/or numbers, select a setting, and store the changes in the same way as the instant storage described previously.



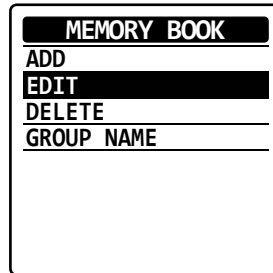
MEMORY OPERATION

Notes:

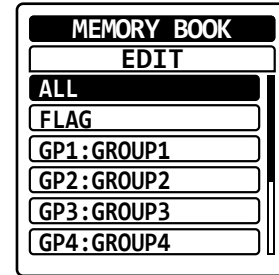
- You cannot skip the input of “Name” (channel tag).
- You must input either of “Freq.” (channel frequency) or “LAT” and “LON” (position information of the channel).

Editing the information

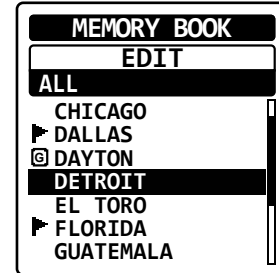
1. Press the **[MENU]** key to display the MENU screen.
2. Select “SETUP” on the screen by pressing the **[◀]** or **[▶]** key, and then press the **[ENT]** key.
3. Select “MEMORY BOOK” on the screen by pressing the **[◀]** or **[▶]** key, and then press the **[ENT]** key.
4. Select “EDIT” by pressing the **[◀]** or **[▶]** key, and then press the **[ENT]** key.



5. Press the **[◀]** or **[▶]** key to select the group including the entry you want to edit, then press the **[ENT]** key.



6. Press the **[◀]** or **[▶]** key to select the entry you want to edit, then press the **[ENT]** key.

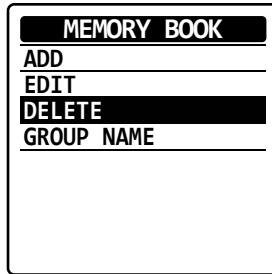


7. Select the item, input letters and/or numbers, select a setting, and then store the changes in the same way as the instant storage described previously.

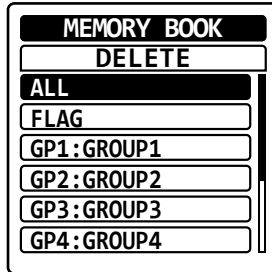
MEMORY OPERATION

Deleting the memory

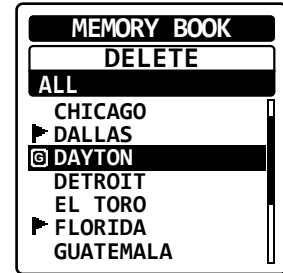
1. Press the [MENU] key to display the MENU screen.
2. Select "SETUP" on the screen by pressing the [◀] or [▶] key, and then press the [ENT] key.
3. Select "MEMORY BOOK" on the screen by pressing the [◀] or [▶] key, and then press the [ENT] key.
4. Select "DELETE" by pressing the [◀] or [▶] key, and then press the [ENT] key.



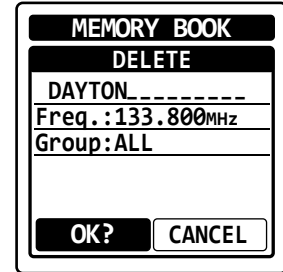
5. Press the [◀] or [▶] key to select the group including the entry you want to delete, then press the [ENT] key.



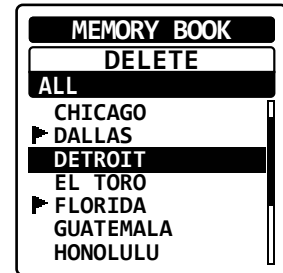
6. Press the [◀] or [▶] key to select the entry you want to delete, and then press the [ENT] key.



7. Select "OK?" on the screen by pressing the [◀] or [▶] key, and then press the [ENT] key.



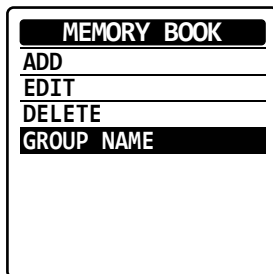
The display will return to the previous screen after the deletion of the entry from the memory.



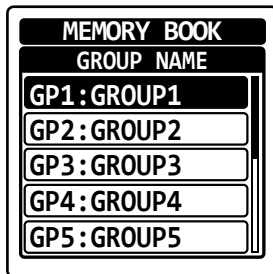
MEMORY OPERATION

Setting the group name

1. Press the **[MENU]** key to display the MENU screen.
2. Select “SETUP” on the screen by pressing the **[◀]** or **[▶]** key, and then press the **[ENT]** key.
3. Select “MEMORY BOOK” on the screen by pressing the **[◀]** or **[▶]** key, and then press the **[ENT]** key.
4. Select “GROUP NAME” by pressing the **[◀]** or **[▶]** key, and then press the **[ENT]** key.



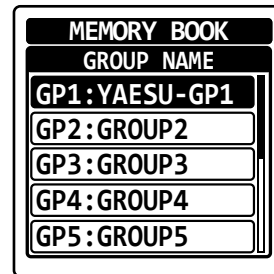
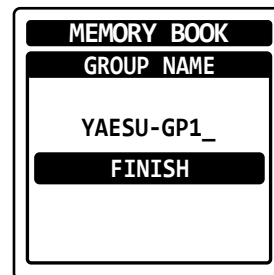
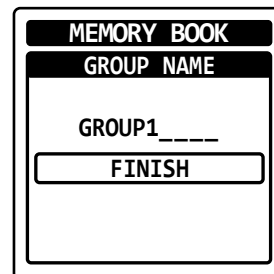
5. Press the **[◀]** or **[▶]** key to select the group including the entry you want to change, and then press the **[ENT]** key.



6. Use the keypad or dial to edit the letters and/or numbers of the group name, then press the **[ENT]** key.

The cursor will move to the next digit of the group name.

7. Select “FINISH” by pressing the **[◀]** or **[▶]** key, and then press the **[ENT]** key.

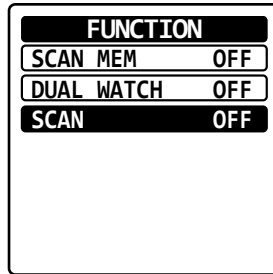


SCANNING OPERATION

The **FTA-450L** allows you to scan active channels automatically in the COMM (COM band), MR, and WX modes. It pauses on signals received, so you can talk to the station(s) on the frequency received.

Scanning Channels

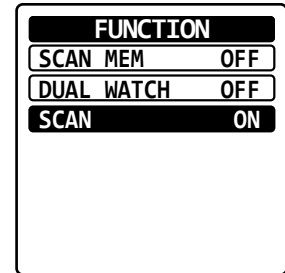
1. Set the radio to the COMM mode.
2. Press the **[MENU]** key to display the MENU screen.
3. Select “FUNC” on the screen by pressing the [**◀**] or [**▶**] key, and then press the **[ENT]** key.
4. Select “SCAN” on the screen by pressing the [**◀**] or [**▶**] key, and then press the **[ENT]** key.



The scanning starts and the display returns to the COMM mode screen.

- The scanner searches signals from the lowest frequency to highest.

- When the scanner encounters a signal, the scanning pauses and the radio remains on that channel until the signal disappears, and the frequency indication on the display blinks.
- After the signal disappears, scanning resumes.
- To stop scanning, press the **PTT** switch, or select “SCAN” again in the FUNCTION menu.



Next time the scanning is activated, the search will start from the frequency at which the scanning was stopped last time.

SCANNING OPERATION

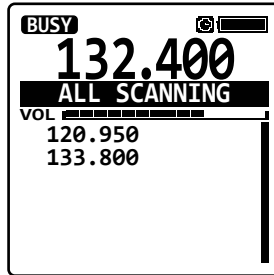
Note:

When you enable the alarm function at reception of the weather alert signal via the COMM SETUP menu in the SETUP mode, the last weather channel will be watched as the every second frequency during a scan.

Example: when the last weather channel is 162.4 MHz, the radio scans in the following order.

118.000 → 162.400 → 118.025 → 162.400 →
118.050 → 162.400 ...

The frequency of the last weather channel, however, will not be displayed until the scanner encounters the weather alert signal.



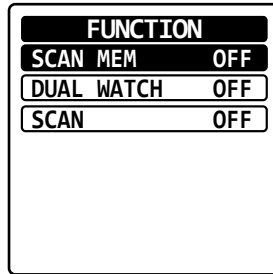
SCANNING OPERATION

Scanning the Specified Channels

Among the memory and weather channels, you may scan only those on which you want to see if a signal exists.

Marking the channels

1. Set the radio to the MR or WX mode and tune to the channel that you want to be scanned.
2. Press the [MENU] key to display the MENU screen.
3. Select “FUNC” on the screen by pressing the [◀] or [▶] key, and then press the [ENT] key.
4. Select “SCAN MEM” on the screen by pressing the [◀] or [▶] key, and then press the [ENT] key.



The current channel is marked to be scanned and the “MEM” icon, which indicates that the channel is the target of scanning, will appear at the right side of the channel frequency when the display returns to the MR or WX mode screen.



5. Repeat steps 1 to 4 above to mark other channels as well.

SCANNING OPERATION

Scanning the marked channels

- ❑ Set the radio to the MR or WX mode, then perform steps 2 to 4 of the section “Scanning All Channels” in the previous page.
The scanning starts and the display returns to the MR or WX mode screen.
- ❑ The **FTA-450L** operates in the same way as it does when scanning all channels described in the previous page, except that it searches marked frequencies only.

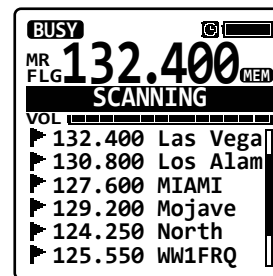
Note:

When you enable the alarm function of the weather alert signal via the COMM SETUP menu in the SETUP mode, the last weather channel will be watched as the every second channel during a scan.

Example: when the last weather channel is WX03, the radio scans in the following order.

MEM001 → WX03 → MEM002 → WX03 →
MEM003 → WX03 ...

The frequency of the last weather channel, however, will not be displayed until the scanner encounters the weather alert signal.



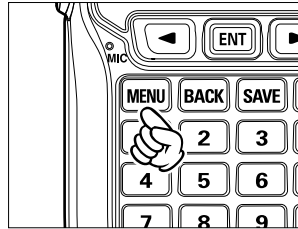
SETUP MODE

Note:

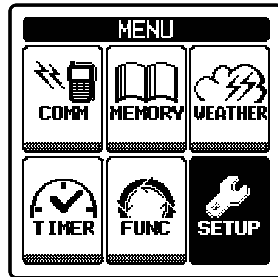
We do not recommend that any of the default settings be changed until you are thoroughly familiar with the operation of the **FTA-450L**.

Basic Operation

1. Press the **[MENU]** key to display the MENU screen.



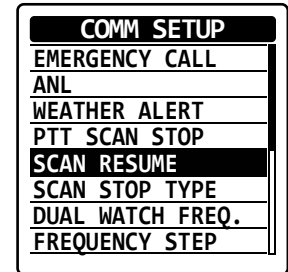
2. Select "SETUP" on the MENU screen by pressing the **[◀]** or **[▶]** key, and then press the **[ENT]** key.



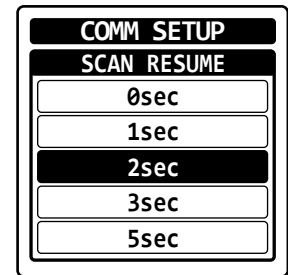
3. Select the item on the SETUP menu by pressing the **[◀]** or **[▶]** key, and then press the **[ENT]** key.



4. Select the item you wish to view and/or change the settings by pressing the **[◀]** or **[▶]** key, and then press the **[ENT]** key.



5. Enter or select settings on the screen dedicated to each item, and then press the **[ENT]** key to determine the new settings.



SETUP MODE

Menu items

○ MEMORY BOOK

You may store the frequencies or positions with a tag name to the memory of the radio, and maintain the stored entries.

○ COMM SETUP

You may set and adjust the operations of the radio in the COMM mode.

○ CONFIGURATION

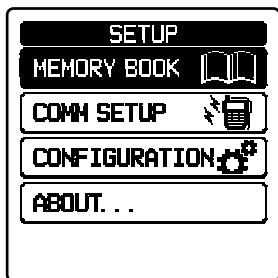
You may set and adjust the various configurations of the radio.

○ ABOUT...

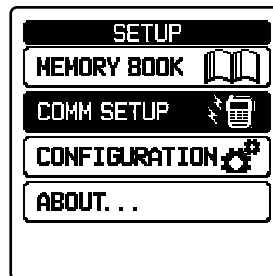
Confirm the version of software installed in the radio.

Maintenance of the Memory

See pages 43 to 46 for details.

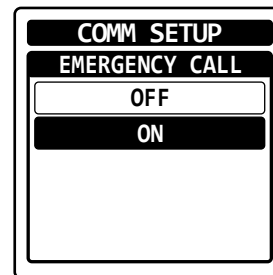
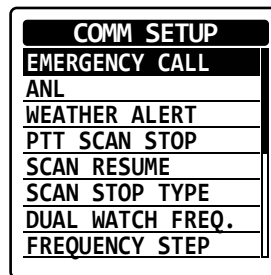


Setting of the COMM Mode Operation



Turning on/off the emergency call

You may enable or disable the quick access to the 121.500 MHz emergency frequency (see also page 20).



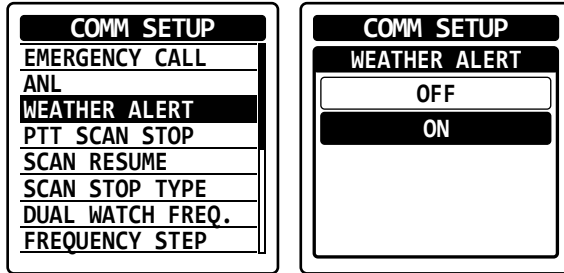
Turning on/off the automatic noise limiter

See page 39 for details.

SETUP MODE

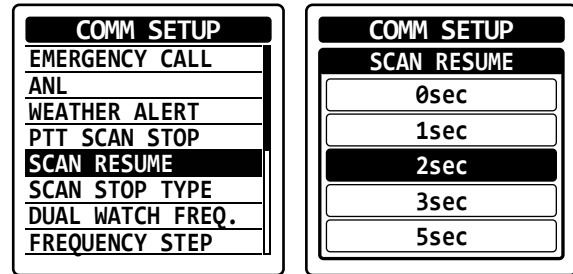
Turning on/off the weather alert

You may enable or disable the alarm function when receiving the weather alert signal (see also page 26).



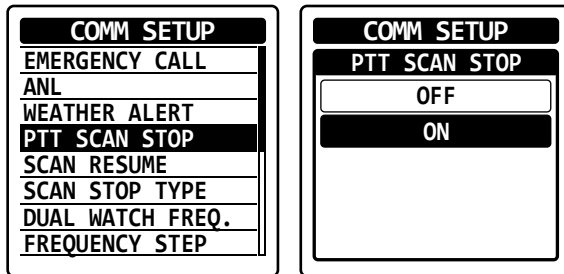
Setting the scan resume time

You may select a waiting time till the resuming of scan after the encountered signal disappears (see also page 47).



Turning on/off the scan stop with the PTT

You may lock out the **PTT** switch during the scan operation (see also page 47).



SETUP MODE

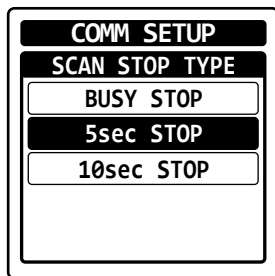
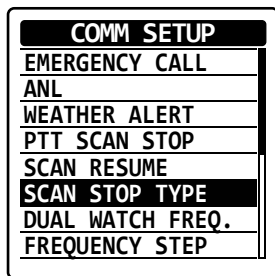
Setting the operation after stopping a scan

You may select the operations listed below when encountering a signal during a scan (see also page 47).

BUSY STOP ... Stays on the frequency and will not resume the scan

5sec STOP ... Stays on the frequency for 5 seconds and then resume the scan

10sec STOP ... Stays on the frequency for 10 seconds and then resume the scan



Setting the polled frequency for dual watch

See page 26 for details.

Setting the frequency step for tuning

See page 38 for details.

Setting the time-out timer for transmission

See page 33 for details.

Setting the audio filter of the receiver

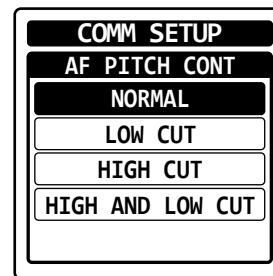
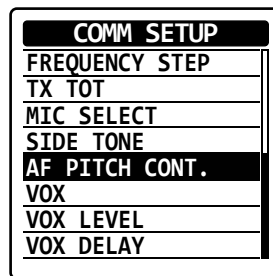
You may select the operation of the audio filter from the following 4 types.

NORMAL ... No filtering

LOW CUT ... Cuts off the lower range of sound

HIGH CUT ... Cuts off the higher range of sound

HIGH AND LOW CUT ... Cuts off the higher and lower ranges of sound



SETUP MODE

Setting the microphone configuration

See page 34 for details.

Setting the side tone operation

See page 35 for details.

Turning on/off the VOX operation

See page 34 for details.

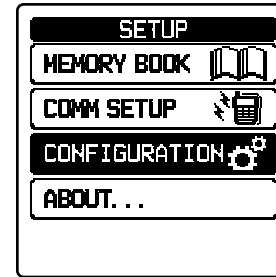
Setting the sensitivity of the VOX system

See page 35 for details.

Setting the sensing time of the VOX system

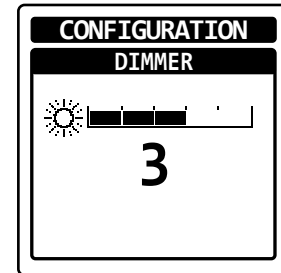
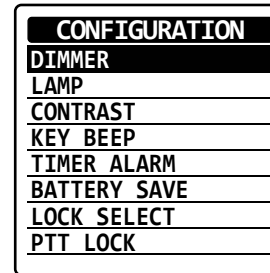
See page 35 for details.

Setting of the Operation and Configuration of the Radio



Setting the brightness of the display

You may adjust the backlight brightness in 5 levels.

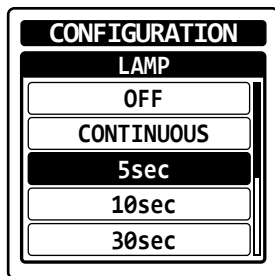
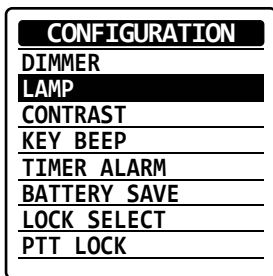


SETUP MODE

Setting the lamp of the display

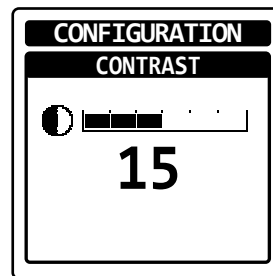
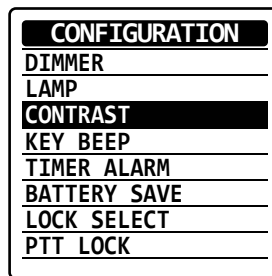
You may select the operation of the display lighting from the following 4 types.

- OFF No lighting at any time
- CONTINUOUS ... Lights at all time
- 5sec / 10sec / 30sec / 60sec / 120sec / 300sec
Lights for selected time when any key is pressed
- EXT PO/KEY Lights for 5 seconds only when any key is pressed, or lights at all time when the power is supplied through the **EXT DC** jack



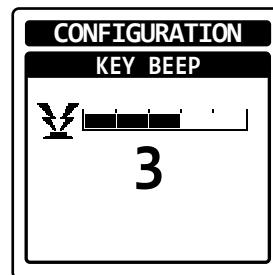
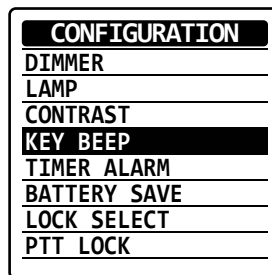
Setting the contrast of the display

You may adjust the contrast in 30 levels.



Setting the loudness of key beeps

You may adjust the loudness in 5 levels.



SETUP MODE

Turning on/off the timer alarm

See page 32 for details.

Setting the power save operation

See page 33 for details.

Setting the lockout configuration

See page 36 for details.

Resetting the radio

You may initialize the memories and settings of the menu categories independently or all at once (see also page 23).

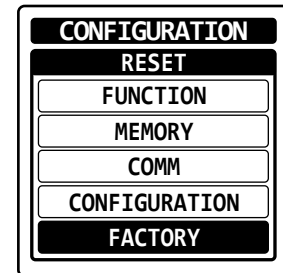
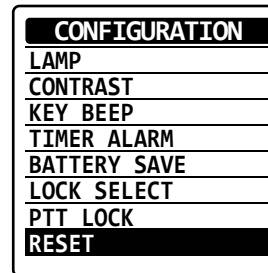
FUNCTION ... Initializes the on/off settings in the
FUNCTION menu

MEMORY ... Clears the entries in the memory

COMM & GPS ... Initializes the settings in the
COMM SETUP and GPS SETUP
menus

CONFIGURATION ... Initializes the settings in the
CONFIGURATION menu

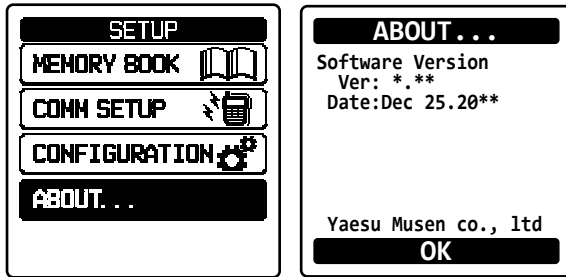
FACTORY ... Resets the radio to factory default



SETUP MODE

About the Radio

You may confirm the version of the software currently operating on the radio.



Summary of the SETUP Menu

MEMORY BOOK

Item	Description	Default Value
ADD	Adding new channels or destinations	-
EDIT	Editing the stored information	-
DELETE	Deleting the stored channel or destination	-
GROUP NAME	Editing the group name	GP1:GROUP 1 GP2:GROUP 2 GP3:GROUP 3 GP4:GROUP 4 GP5:GROUP 5 GP6:GROUP 6 GP7:GROUP 7 GP8:GROUP 8

SETUP MODE

COMM SETUP

Item	Description	Default Value
EMERGENCY CALL	Turning on/off the emergency call	ON
ANL	Turning on/off the automatic noise limiter	OFF
WEATHER ALERT	Turning on/off the weather alert	OFF
PTT SCAN STOP	Turning on/off the scan stop with the PTT	ON
SCAN RESUME	Setting the scan resume time	3 sec
SCAN STOP TYPE	Setting the operation after stopping a scan	BUSY STOP
DUAL WATCH FREQ.	Setting the polled frequency for dual watch	-
FREQUENCY STEP	Setting the frequency step for tuning	25 kHz
TX TOT	Setting the time-out timer for transmission	5 min
MIC SELECT	Setting the microphone configuration	INT MIC
SIDE TONE	Setting the side tone operation	OFF
AF PITCH CONT.	Setting the audio filter of the receiver	NORMAL
VOX	Turning on/off the VOX operation	OFF
VOX LEVEL	Setting the sensitivity of the VOX system	LEVEL 2
VOX DELAY	Setting the sensing time of the VOX system	1.5 sec

CONFIGURATION

Item	Description	Default Value
DIMMER	Setting the brightness level of the display	5
LAMP	Setting the backlight timer of the display	EXT PO/KEY
CONTRAST	Setting the contrast of the display	15
KEY BEEP	Setting the loudness of key beeps	3
TIMER ALARM	Turning on/off the timer alarm	ON
BATTERY SAVER	Setting the power save operation	50%
LOCK SELECT	Setting the lockout configuration	ALL LOCK
PTT LOCK	Turning enable or disable the PTT Lock function	UNLOCK
RESET	Resetting the radio	-

ABOUT...

Item	Description	Default Value
-	Confirming the version of the software	-

SPECIFICATIONS

General

Frequency Range:	TX: 118.000 to 136.975 MHz RX: 118.000 to 136.975 MHz 161.650 to 163.275 MHz (Weather Channels; USA/Canada only)
Channel Spacing:	25 kHz/8.33 kHz
Emission Type:	TX: AM RX: AM & FM (FM: for receiving the Weather Channels)
Supply Voltage:	6.0 to 9.5 VDC
Current Consumption (approx.):	300 μ A (power off), 70 mA (battery saver on, saver ratio 50%) 80 mA (squelch on), 300 mA (receive), 0.9 A (transmit 1.5 W Carrier)
Temperature Range:	+14 °F to +140 °F (-10 °C to +60 °C)
Case Size (W x H x D):	2.4 x 5.2 x 1.3 inches (62 x 133 x 34 mm) with SBR-12LI
Weight (approx.):	14.5 oz (410 g) with SBR-12LI, antenna and belt clip

Receiver

Circuit Type:	Double-conversion superheterodyne
IFs:	47.25 MHz & 450 kHz
Sensitivity:	Better than 0.8 μ V (for 6 dB S/N with 1 kHz, 30 % modulation)
Selectivity:	>8 kHz/-6 dB
Adjacent CH. Selectivity:	<25 kHz/-60 dB
AF Output (@7.4 V):	0.8 W @ 16 Ohms, 10 % THD

SPECIFICATIONS

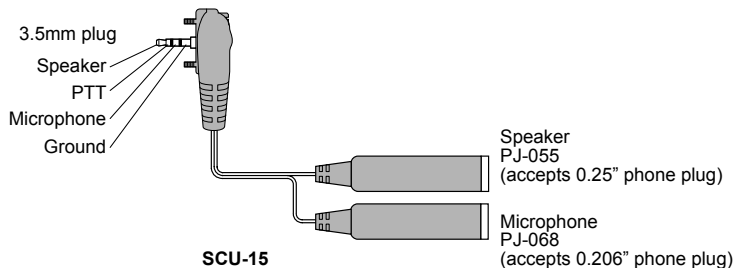
Transmitter

Power Output (@ 7.4 V):	5.0 W (PEP), 1.5 W (Carrier Power)
Frequency Stability:	Better than ± 1 ppm (+14 °F to + 140 °F [-10 °C to +60 °C])
Modulation System:	Low Level Amplitude Modulation
Spurious Emission:	>70 dB below carrier
Int. Microphone Type:	Condenser
Ext. Mic. Impedance:	150 Ohms

Specifications are subject to change without notice or obligation.

TROUBLESHOOTING FOR HEADSET CONNECTION

Question	Answer
When connecting the SCU-15 headset adapter cable between the radio and a headset, the “ TX ” icon appears on the display and the radio cannot be operated.	This happens when the plug on the SCU-15 headset adapter cable is not properly inserted into the MIC/SP jack. To make proper contact within the radio, the plug must be pushed all the way into the MIC/SP jack and be fixed with the two screws.
Can I purchase the optional PTT Switch from Yaesu?	Contact your Aviation dealer for details regarding purchasing an aftermarket Push-To-Talk switch.
Will my headset work with this radio?	The SCU-15 headset adapter cable is made to operate with most headsets; however to be concretely sure check with the headset manufacturer using the wiring shown below. Please confirm the connections and connector sizes are correct.



Headset specification requirements for SCU-15

Earphone (speaker) impedance: 8 Ω or above

Microphone impedance: 150 Ω \pm 20%

PTT pressed: Ground

PTT not pressed: Open

Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication.

Conformément à la réglementation d'Industrie Canada, le présent émetteur radio peut fonctionner avec une antenne d'un type et d'un gain maximal (ou inférieur) approuvé pour l'émetteur par Industrie Canada. Dans le but de réduire les risques de brouillage radioélectrique à l'intention des autres utilisateurs, il faut choisir le type d'antenne et son gain de sorte que la puissance isotrope rayonnée équivalente (p.i.r.e.) ne dépasse pas l'intensité nécessaire à l'établissement d'une communication satisfaisante.

This radio transmitter (identify the device by certification number, or model number if Category II) has been approved by Industry Canada to operate with the antenna types listed below with the maximum permissible gain and required antenna impedance for each antenna type indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device.

Le présent émetteur radio (identifier le dispositif par son numéro de certification ou son numéro de modèle s'il fait partie du matériel de catégorie I) a été approuvé par Industrie Canada pour fonctionner avec les types d'antenne énumérés ci-dessous et ayant un gain admissible maximal et l'impédance requise pour chaque type d'antenne. Les types d'antenne non inclus dans cette liste, ou dont le gain est supérieur au gain maximal indiqué, sont strictement interdits pour l'exploitation de l'émetteur.

Part 15.21: Changes or modifications to this device not expressly approved by YAESU MUSEN could void the user's authorization to operate this device.

Attention in case of use

This transceiver works on frequencies which are not generally permitted. For frequency allocation, apply for a license at your local spectrum management authority. For actual usage contact your dealer or sales shop in order to get your transceiver adjusted to the allocated frequency range.

List of national codes						
AT	BE	BG	CY	CZ	DE	
DK	ES	EE	FI	FR	GB	
GR	HR	HU	IE	IT	LT	
LU	LV	MT	NL	PL	PT	
RO	SK	SI	SE	CH	IS	
LI	NO	-	-	-	-	

Disposal of your Electronic and Electric Equipment

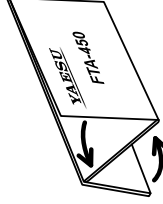
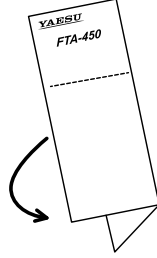
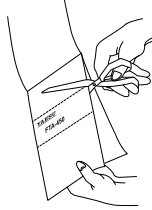
Products with the symbol (crossed-out wheeled bin) cannot be disposed as household waste.

Electronic and Electric Equipment should be recycled at a facility capable of handling these items and their waste by products.

In EU countries, please contact your local equipment supplier representative or service center for information about the waste collection system in your country.



Quick Reference



(Cut Here)

YAESU

FTA-450L

Saving the Frequency to Memory

1. In the COMM-mode screen, set the frequency to be stored with the DIAL selector knob or the keypad.
2. Press the [SAVE] key.
3. To save the data with a specific name or attribute, press and hold the [SAVE] key.

Quick Reference Card

YAESU MUSEN CO., LTD.

Recalling the Previous Frequencies

1. In the COMM-mode screen, press the [ENT] key.
2. Press the [◀] or [▶] key to select the desired channel from the list, then press the [ENT] key.

Recalling the Memory Channels

1. Press the [MENU] key to display the MENU screen.
2. Press the [◀] or [▶] key to select "MEMORY", then press the [ENT] key.

3. Press the [◀] or [▶] key to select a group including the desired channel from the list, then press the [ENT] key.
4. After switching to the MR mode screen, press the [ENT] key.
5. Press the [◀] or [▶] key to select the desired channel from the list, then press the [ENT] key.

Receiving the Weather Channels

1. Press the [MENU] key to display the MENU screen.
2. Press the [◀] or [▶] key to select "WEATHER", then press the [ENT] key.
3. Press the [◀] or [▶] key to select the desired channel from the list.
4. Press the [ENT] key.

Locking the Dial and Keys

Press and hold the [On] key.
Press and hold the [On] key again to unlock.

Selecting the Operation Mode

1. Press the [MENU] key to display the MENU screen.
2. Press the [◀] or [▶] key to select the mode, then press the [ENT] key.
3. To return to the screen displayed before pressing the [MENU] key, press the [BACK] key several times.

Entering and Editing Characters

1. Rotate the DIAL selector knob to select letters and/or numerics, then press the [ENT] key to set the character.
2. Press the appropriate keys on the keypad to enter numbers.
3. Press the [◀] or [▶] key to move the cursor.
4. Press the [BACK] key to delete one character.
5. Press and hold the [BACK] key to clear all the characters in the input field.

YAESU

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Declaration of Conformity

Nr. YUK-DOC-1201-16

We, Yaesu UK Ltd. certify and declare under our sole responsibility that the following equipment complies with the essential requirements of the Directive 1999/5/EC and 2011/65/EU.

Type of Equipment	AirBand Transceiver
Brand Name	YAESU
Model Number	FTA-450
Manufacturer	YAESU MUSEN CO. LTD.
Address of Manufacturer	Tennozu Parkside Building, 2-5-8 Higashi-Shinagawa, Shinagawa-ku, Tokyo, 140-0002 Japan

Applicable Standards:

This equipment is tested to and conforms to the essential requirements of directive, as included in following standards:

Health 1999/5/EC Art. 3 (1) (a)	EN 62209-1:2006
	EN 62209-2:2010
Safety 1999/5/EC Art. 3 (1) (a)	EN 60950-1:2006 + A2:2013
EMC 1999/5/EC Art. 3 (1) (b)	EN 301 489-01 V1.9.2
	EN 301 489-22 V1.3.1
Radio Spectrum 1999/5/EC Art. 3 (2)	EN 300 676-02 V1.5.1
ROHS2 2011/65/EU Art. 7 (b)	EN 50581:2012

The technical documentation as required by the Conformity Assessment procedures is kept at the following address:

Company
Address

Yaesu UK Ltd
Unit 12, Sun Valley Business Park, Winnall Close
Winchester, Hampshire UK SO23 0LB

Technical Construction file

Issued by: Yaesu Musen Co. Ltd, Tokyo Japan
File No: YETA00425
Drawn up in: Winchester, Hampshire UK
Date: 05 Dec 2016

Signed for and on behalf of Yaesu UK Ltd



Name & Position: PCJ Bigwood
Technical Sales Manager

YAESU

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