ICOM

BASIC MANUAL

HF/50 MHz TRANSCEIVER

IC-7610

Icom Inc.

Thank you for choosing this Icom product. The IC-7610 HF/50 MHz TRANSCEIVER is designed and built with Icom's state of the art technology and craftsmanship. With proper care, this product should provide you with years of trouble-free operation. We appreciate you making the IC-7610 your transceiver of choice, and hope you agree with Icom's philosophy of "technology first." Many hours of research and development went into the design of your IC-7610.

IMPORTANT

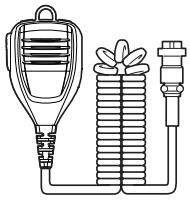
READ ALL INSTRUCTIONS carefully completely before using the transceiver.
SAVE THIS INSTRUCTION MANUAL— This instruction manual contains basic operating instructions for the IC-7610. For the advanced operating instructions, see the Advanced Manual on the supplied CD.

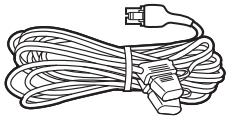
FEATURES

- ***RF Direct Sampling System***
  The IC-7610 employs an RF direct sampling system. RF signals are directly converted to digital data and processed in the FPGA. This system is a leading technology marking an epoch in amateur radio.
- ***2 identical receivers***
  The IC-7610 has 2 independent receiver circuits for the Main and Sub bands.
- ***A built-in DIGI-SEL unit***
  Both the Main and Sub receivers have built-in DIGI-SEL (digital preselector) units. These reject interfering signals.
- ***Real-Time Spectrum Scope***
  Displays the Main and Sub band conditions. It provides class-leading performance in resolution, sweep speed and provides a 100 dB dynamic range.
- ***A built-in automatic antenna tuner***
- ***Multi-function control for easy settings***
- ***Extra large 7 inch touch screen color display***
- ***External monitor connection with a DVI-D port***
- ***BNC type RX IN/OUT connectors***
- ***Class Leading RMDR and Phase Noise Characteristics***
- ***IP remote control capability with the optional RS-BA1 IP REMOTE CONTROL SOFTWARE***
- ***Remote encoder capability with the optional RC-28 REMOTE ENCODER***
- ***Dualwatch operation***

Icom is not responsible for the destruction, damage to, or performance of any Icom or non-Icom equipment, if the malfunction is because of:
- Force majeure, including, but not limited to, fires, earthquakes, storms, floods, lightning, or other natural disasters, disturbances, riots, war, or radioactive contamination.
- The use of Icom transceivers with any equipment that is not manufactured or approved by Icom.

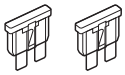
SUPPLIED ACCESSORIES


Hand microphone
(HM-219)


DC power cable
(3 m: 9.8 ft)

CW key plug
(6.35 mm: 1/4" Stereo)

CD


Spare fuse
(30 A)

Spare fuse
(5 A)

ⓘDifferent types of accessories may be supplied, or may not be supplied depending on the transceiver version.

This product includes RTOS "RTX" software, and is licensed according to the software license.

This product includes "zlib" open source software, and is licensed according to the open source software license.

This product includes "libpng" open source software, and is licensed according to the open source software license.

Refer to the Text files in the License folder of included CD for information on the open source software being used by this product.

FCC INFORMATION

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

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

WARNING: MODIFICATION OF THIS DEVICE TO RECEIVE CELLULAR RADIOTELEPHONE SERVICE SIGNALS IS PROHIBITED UNDER FCC RULES AND FEDERAL LAW.

CAUTION: Changes or modifications to this device, not expressly approved by Icom Inc., could void your authority to operate this device under FCC regulations.

TRADEMARKS

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Microsoft, Windows and Windows Vista are registered trademarks of Microsoft Corporation in the United States and/or other countries.

Adobe, Acrobat, and Reader are either registered trademarks or trademarks of Adobe Systems Incorporated in the United States and/or other countries.

All other products or brands are registered trademarks or trademarks of their respective holders.

EXPLICIT DEFINITIONS

WORD	DEFINITION
⚠ **DANGER!**	Personal death, serious injury or an explosion may occur.
⚠ **WARNING!**	Personal injury, fire hazard or electric shock may occur.
CAUTION	Equipment damage may occur.
NOTE	Recommended for optimum use. No risk of personal injury, fire or electric shock.

ABOUT SPURIOUS SIGNALS

Spurious signals may be received near the following frequencies. These are made in the internal circuit and does not indicate a transceiver malfunction:

- 28.671 MHz
- 50.516 MHz
- 51.881 MHz
- 53.246 MHz
- 53.760 MHz

DISPOSAL

The crossed-out wheeled-bin symbol on your product, literature, or packaging reminds you that in the European Union, all electrical and electronic products, batteries, and accumulators (rechargeable batteries) must be taken to designated collection locations at the end of their working life. Do not dispose of these products as unsorted municipal waste.
Dispose of them according to the laws in your area.

ABOUT CE AND DOC

Hereby, Icom Inc. declares that the versions of IC-7610 which have the “CE” symbol on the product, comply with the essential requirements of the Radio Equipment Directive, 2014/53/EU, and the restriction of the use of certain hazardous substances in electrical and electronic equipment Directive, 2011/65/EU. The full text of the EU declaration of conformity is available at the following internet address:
http://www.icom.co.jp/world/support

ABOUT THE TOUCH SCREEN

◇ Touch operation

In the Full manual or Basic manual, the touch operation is described as shown below.

Touch
If the display is touched briefly, one short beep sounds.

Touch for 1 second
If the display is touched for 1 second, one short and one long beep sound.

◇ Touch screen precautions

- The touch screen may not properly work when the LCD protection film or sheet is attached.
- Touching the screen with your finger nails, sharp topped object and so on, or touching the screen hard may damage it.
- Tablet PC's operations such as flick, pinch in and pinch out cannot be performed on this touch screen.

◇ Touch screen maintenance

- If the touch screen becomes dusty or dirty, wipe it clean with a soft, dry cloth.
- When you wipe the touch screen, be careful not to push it too hard or scratch it with your finger nails. Otherwise you may damage the screen.

ABOUT THE SUPPLIED CD

The following items are included on the CD.

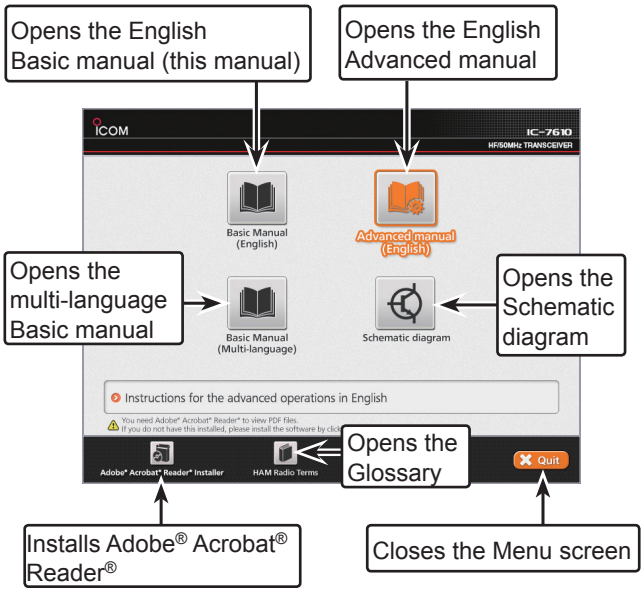
- **Basic manual (English)**
  Instructions for basic operations, the same as this manual.
- **Advanced manual (English)**
  Instructions for advanced operations in English.
- **Basic manual (Multi-language)**
  Instructions for basic operations in multiple languages.
- **Schematic diagram**
  Includes the schematic and block diagrams.
- **HAM radio Terms (English)**
  A glossary of HAM radio terms in English.
- **Adobe® Reader® Installer**
  Installer for Adobe® Reader®.

To read the manuals or Schematic diagram, Adobe® Acrobat® Reader® is required. If you have not installed it, please install the Adobe Acrobat Reader on the CD or download it from Adobe Systems Incorporated's website.

A PC with the following Operating System is required.
- Microsoft® Windows® 10
- Microsoft® Windows® 8.1
- Microsoft® Windows® 7

Starting the CD

1. Insert the CD into the CD drive.
2. Double click "Menu.exe" on the CD.
   - Depending on the PC setting, the menu screen shown below is automatically displayed.
3. Click the desired button to open the file.
   ⓘTo close the Menu screen, click [Quit].



ⓘDifferent types of menu screen may be displayed, depending on the transceiver version.

ABOUT THE CONSTRUCTION OF THE MANUAL

There are two different types of manuals for this transceiver, the Basic manual (this manual) and the Advanced manual.

◇ Basic manual (This manual)

Instructions for the basic operations, precautions, installations and connections.

◇ Advanced manual (PDF type)

Instructions for the advanced operations, such as listed below and more...

ⓘThe Advanced manual is on the CD that is supplied with the transceiver, or can be downloaded from the Icom website.
http://www.icom.co.jp/world/support

- User Band Edge
- IP Plus function
- Main/Sub Band Tracking function
- Adjusting the Drive Gain level
- VOX function
- ⊿TX function
- Operating CW <Advanced>
- Operating RTTY (FSK) and PSK
- Data mode (AFSK) operation
- Scope operation <Advanced>
- Voice Recorder functions
- Voice TX Memory operation
- Using an SD card and USB flash drive <Advanced>
- Memory operation
- Scan
- Set mode <Advanced>
- Clock and Timers <Advanced>
- Updating the firmware
- Replacing fuse
- Cleaning

And more....

ABOUT THE INSTRUCTIONS

The Basic and Advanced manuals are described in the following manner.

“ ” (Quotation marks):
Used to indicate icons, setting items, and screen titles displayed on the screen.
The screen titles are also indicated in uppercase letters. (Example: FUNCTION screen)

[ ] (brackets):
Used to indicate keys.

Routes in the set modes and setting screens

Routes in the set mode, setting screen and the setting items are described in the following manner.

MENU » SET > Time Set > **Date/Time**

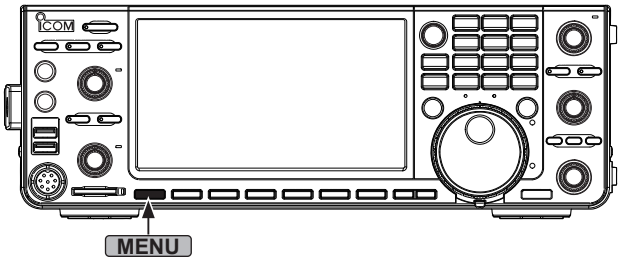
Instruction example

◇ **Setting the current date**

1. Open the DATE/TIME screen.
   MENU » SET > Time Set > **Date/Time**
2. Touch “Date/Time.”
3. Touch “Date.”
   • Opens the date editing screen.

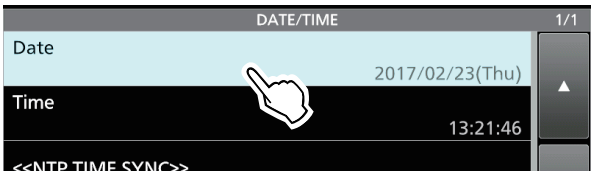
Detailed instruction

1. Push MENU.

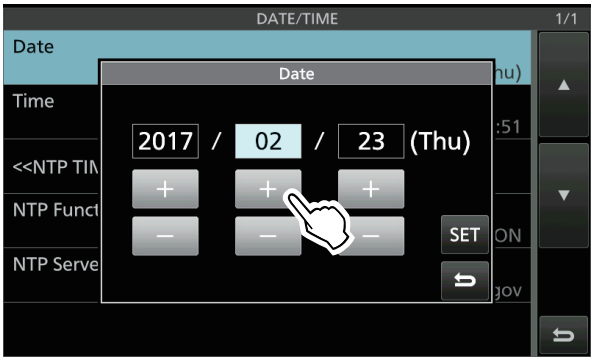


   • Opens the MENU screen.
2. Touch [SET].

   • Opens the SET screen.
3. Touch “Time Set.”
   • Opens the TIME SET screen.
4. Touch “Date/Time.”
   • Opens the DATE/TIME screen.
5. Touch “Date.”



   • Opens the date editing screen.
6. Touch [+] and [-] to set the date.



7. Touch [SET] to set the date.
   ⓘTouch ⮌ to cancel.
   • Returns to the previous screen.

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INSTALLATION NOTES I

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PRECAUTIONS

⚠ **DANGER HIGH RF VOLTAGE! NEVER** touch an antenna or antenna connector while transmitting. This could cause an electrical shock or burn.

⚠ **DANGER! NEVER** operate the transceiver near unshielded electrical blasting caps or in an explosive atmosphere. This could cause an explosion and death.

⚠ **WARNING RF EXPOSURE!** This device emits Radio Frequency (RF) energy. Extreme caution should be observed when operating this device. If you have any questions regarding RF exposure and safety standards please refer to the Federal Communications Commission Office of Engineering and Technology's report on Evaluating Compliance with FCC Guidelines for Human Radio Frequency Electromagnetic Fields (OET Bulletin 65).

⚠ **WARNING! NEVER** operate the transceiver with a headset or other audio accessories at high volume levels. If you experience a ringing in your ears, reduce the volume or discontinue use.

⚠ **WARNING! NEVER** apply AC power to the [DC13.8V] socket on the transceiver rear panel. This could cause a fire or damage the transceiver.

⚠ **WARNING! NEVER** apply more than 16 V DC to the [DC13.8V] socket on the transceiver rear panel. This could cause a fire or damage the transceiver.

⚠ **WARNING! NEVER** reverse the DC power cable polarity. This could cause a fire or damage the transceiver.

⚠ **WARNING! NEVER** remove the fuse holder on the DC power cable. Excessive current caused by a short could cause a fire or damage the transceiver.

⚠ **WARNING! NEVER** let metal, wire or other objects contact the inside of the transceiver, or make incorrect contact with connectors on the rear panel. This could cause an electric shock or damage the transceiver.

⚠ **WARNING! NEVER** operate or touch the transceiver with wet hands. This could cause an electric shock or damage to the transceiver.

⚠ **WARNING! NEVER** operate the equipment if you notice an abnormal odor, sound or smoke. Immediately turn OFF the power and/or remove the DC power cable. Contact your Icom dealer or distributor for advice.

⚠ **WARNING! NEVER** put the transceiver on an unstable place where the transceiver may suddenly move or fall. This could cause an injury or damage the transceiver.

⚠ **WARNING! NEVER** operate the transceiver during a lightning storm. It may result in an electric shock, cause a fire or damage the transceiver. Always disconnect the power source and antenna before a storm.

CAUTION: DO NOT expose the transceiver to rain, snow or any liquids. They could damage the transceiver.

CAUTION: DO NOT change the internal settings of the transceiver. This may reduce transceiver performance and/or damage the transceiver. The transceiver warranty does not cover any problems caused by unauthorized internal adjustments.

CAUTION: DO NOT install the equipment in a place without adequate ventilation, or block any cooling vents on the top, rear, sides or bottom of the transceiver or the cooling fan. Heat dissipation may be reduced and damage the transceiver.

CAUTION: DO NOT use harsh solvents such as benzine or alcohol when cleaning. This could damage the equipment surfaces. If the surface becomes dusty or dirty, wipe it clean with a soft, dry cloth.

CAUTION: DO NOT place or leave the transceiver in areas with temperatures below 0°C (32°F) or above 50°C (122°F).

CAUTION: DO NOT place the transceiver in excessively dusty environments, or in direct sunlight. This could damage the transceiver.

CAUTION: DO NOT set the transceiver's RF output power to more than a connected linear amplifier's maximum input level. Otherwise, the linear amplifier will be damaged.

CAUTION: DO NOT use non-Icom microphones. Other microphones have different pin assignments and may damage the transceiver.

BE CAREFUL! The transceiver will become hot when operating the transceiver continuously for long periods of time.

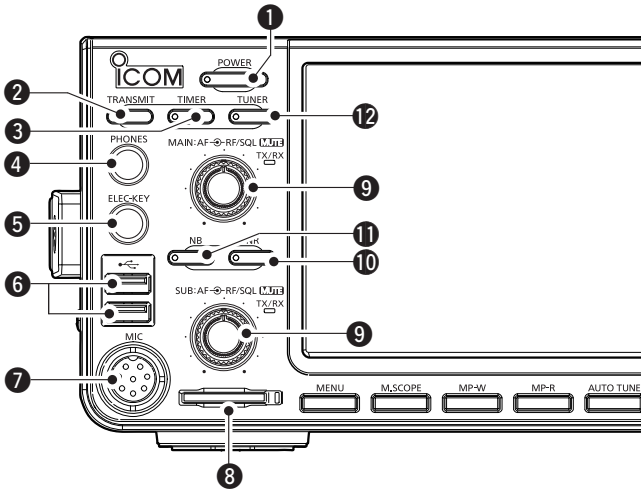
NEVER leave the transceiver in an insecure place to avoid use by unauthorized persons.

Turn OFF the transceiver's power and disconnect the DC power cable when you will not use the transceiver for long period of time.

The LCD display may have cosmetic imperfections that appear as small dark or light spots. This is not a malfunction or defect, but a normal characteristic of LCD displays.

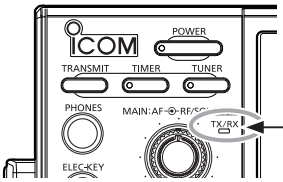
1 PANEL DESCRIPTION

Front panel



❶ **POWER KEY** POWER **(p. 3-1)**
Turns the transceiver ON or OFF.

❷ **TRANSMIT KEY** TRANSMIT **(p. 3-9)**
Toggles between transmit and receive.



The TX/RX indicator
- Lights green while receiving.
- Lights red while transmitting.

❸ **TIMER KEY** TIMER
Turns the Sleep Timer or Daily Timer function ON or OFF.

❹ **HEADPHONE JACK [PHONES] (p. 13-3)**
Connects to standard stereo headphones.

❺ **ELECTRONIC KEYER JACK [ELEC-KEY] (p. 13-3)**
Connects to a paddle to use the internal electronic keyer for the CW operations.

❻ **USB PORT [USB A] (p. 13-4)**
Insert a USB flash drive, USB A type keyboard, RC-28 REMOTE ENCODER, mouse or hub.

❼ **MICROPHONE CONNECTOR [MIC] (p. 13-3)**
Connects to the supplied or an optional microphone.

❽ **SD CARD SLOT [SD CARD] (p. 6-1)**
Accepts an SD card. The indicator next to the slot lights blue when inserted.

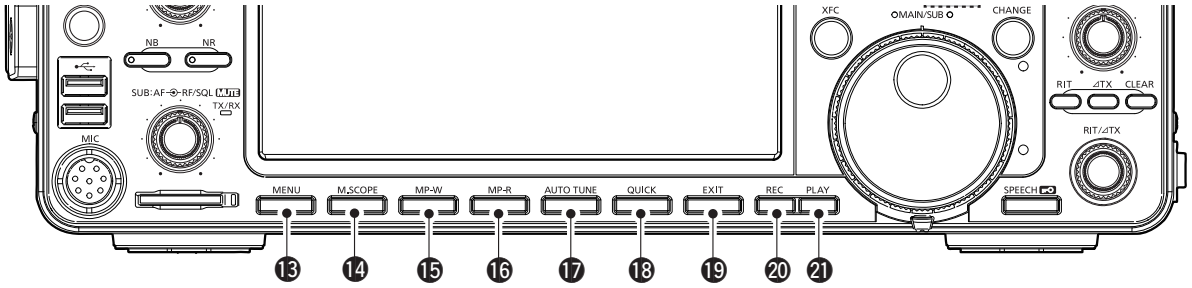
❾ **VOLUME CONTROL** AF-RF/SQL **(p. 3-1)**
ⓘ The upper control is for the Main band, and the lower control is for the Sub band.
- Push to turn the Mute function ON or OFF.
  - The TX/RX indicator lights orange when turned ON.
- Adjusts the audio output level.

RF GAIN/SQUELCH CONTROL AF-RF/SQL **(p. 3-7)**
Adjusts the RF gain and squelch threshold levels.

❿ **NOISE REDUCTION KEY** NR **(p. 6-5)**
Turns the Noise Reduction function ON or OFF.

⓫ **NOISE BLANKER KEY** NB **(p. 6-5)**
Turns the Noise Blanker ON or OFF.

⓬ **ANTENNA TUNER KEY** TUNER **(p. 7-3)**
Turns the antenna tuner ON or OFF, or activates the tuner.



⓭ **MENU KEY** MENU **(p. 8-1)**
Displays the MENU screen.

⓮ **MINI SCOPE KEY** M.SCOPE **(p. 5-2)**
Displays the Mini Scope or Spectrum Scope.

⓯ **MEMO PAD WRITE KEY** MP-W
Saves the displayed contents into the Memo Pad.

⓰ **MEMO PAD READ KEY** MP-R
Sequentially calls up the contents in the Memo Pad.

⓱ **AUTO TUNE KEY** AUTO TUNE **(p. 4-8)**
Automatically tunes the operating frequency to a received CW signal.

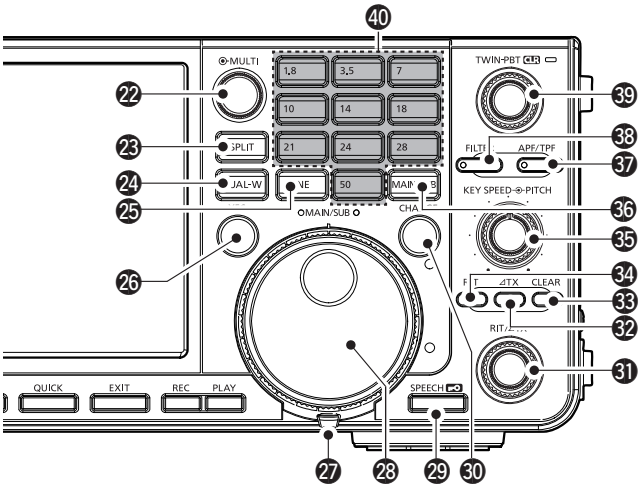
⓲ **QUICK KEY** QUICK **(p. 1-7)**
Displays the QUICK MENU.

Front panel (Continued)

⑲ EXIT KEY EXIT
Exits a setting screen or returns to the previous screen.

⑳ VOICE MEMORY RECORD KEY REC
Saves the previously received signal for the preset time period set in REC Time, using the Instant Replay function, or starts recording a QSO audio onto an SD card.

㉑ VOICE MEMORY PLAY BACK KEY PLAY
Plays back the last 5 seconds of the Instant Replay memory, or all of the Instant Replay memory.



㉒ MULTI-FUNCTION CONTROL MULTI **(p. 1-6)**
Displays the Multi-function menu for various adjustments, or selects an item.

㉓ SPLIT KEY SPLIT **(p. 4-9)**
Turns the Split function ON or OFF.

㉔ DUALWATCH KEY DUAL-W **(p. 3-2)**
Turns the Dualwatch function ON or OFF.

㉕ GENERAL COVERAGE BAND KEY GENE
Selects the general coverage band.

㉖ TRANSMIT FREQUENCY CHECK KEY XFC **(p. 4-1, 4-9, 4-10)**
Enables you to monitor the transmit frequency while holding it down in the Split mode.

㉗ TENSION ADJUSTER
Adjusts the friction of MAIN DIAL.

㉘ MAIN DIAL MAIN DIAL **(p. 3-4)**
Changes the operating frequency.

㉙ SPEECH/LOCK KEY SPEECH
- Announces the operating frequency and mode by pushing this key.
- Electronically locks MAIN DIAL by holding down this key for 1 second.

㉚ MAIN/SUB CHANGE KEY CHANGE **(p. 3-2)**
Toggles the frequency, mode and selected memory channel between the Main and Sub band.

㉛ RIT/⊿TX CONTROL RIT/⊿TX **(p. 4-1)**
Shifts the receive or transmit frequency up to ±9.99 kHz without changing the transmit or receive frequency.

㉜ ⊿TX KEY ⊿TX
Turns the ⊿TX function ON or OFF.

㉝ CLEAR KEY CLEAR
Clears the RIT or ⊿TX shift frequency.

㉞ RIT KEY RIT **(p. 4-1)**
Turns the Receiver Incremental Tuning (RIT) function ON or OFF.

㉟ KEY SPEED KEY SPEED PITCH **CONTROL (p. 4-11)**
Adjusts the internal electronic CW keyer speed.

CW PITCH KEY SPEED PITCH **CONTROL (p. 4-10)**
Shifts the received CW audio pitch and the CW side tone pitch without changing the operating frequency.

㊱ MAIN/SUB ACCESS KEY MAIN/SUB **(p. 3-2)**
Selects the Main or Sub band frequency readout.
- The selected band's frequency is displayed clearly whereas the non-selected band's frequency is displayed in gray.

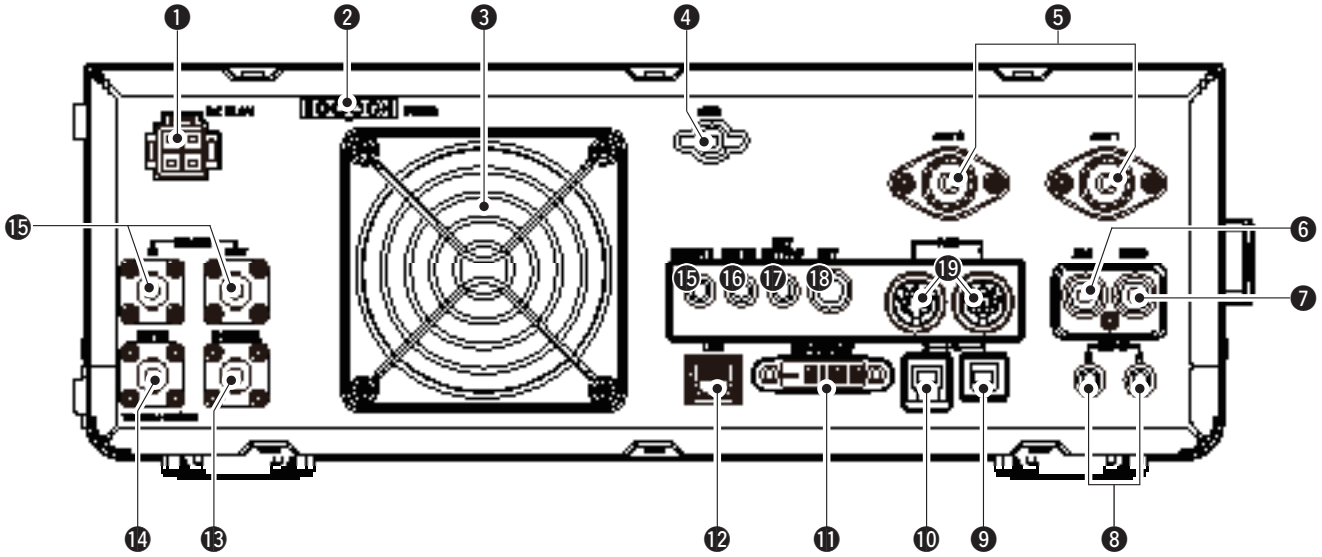
㊲ AUDIO PEAK FILTER/ TWIN PEAK FILTER KEY APF/TPF **(p. 4-12)**
In the CW mode, turns the Audio Peak Filter ON or OFF, and in the RTTY mode, turns the Twin Peak Filter ON or OFF.

㊳ FILTER KEY FILTER **(p. 4-4)**
Selects one of three IF filters.

㊴ TWIN PASSBAND TUNING CONTROL TWIN PBT CLR **(p. 4-3)**
Adjusts the IF filter's passband width.

㊵ KEYPAD 1.8 ~ 50
Selects the operating band by pushing once, or call up other stacked frequencies by pushing the same key several times.

Rear panel



❶ **DC POWER SOCKET [DC 13.8 V]**
Connects to 13.8 V DC through the DC power cable.

❷ **TUNER CONTROL SOCKET [TUNER]**
Accepts the control cable from an optional AH-4 or AH-740 AUTOMATIC ANTENNA TUNER.

❸ **COOLING FAN**
Cools the PA unit when necessary.

❹ **GROUND TERMINAL [GND]**
Connects to ground to prevent electrical shocks, TVI, BCI and other problems.

❺ **ANTENNA CONNECTOR [ANT1]/[ANT2]**
Connects to a 50 Ω antenna. If you use the AH-4 or AH-740, you must connect the antenna to [ANT1].

❻ **ALC INPUT JACK [ALC]**
Connects to the ALC output jack of a non-Icom linear amplifier.

❼ **SEND CONTROL JACK [SEND]**
Connects to control transmit with non-Icom external units.

❽ **EXTERNAL SPEAKER JACK A/B [EXT-SP]**
Accepts a 4 ~ 8 Ω external speaker.

❾ **USB PORT [USB 1]** (Type B)
Connects to a PC for remote control operations.

❿ **USB PORT [USB 2]** (Type B)
For digital data input or output.

⓫ **EXTERNAL DISPLAY CONNECTOR [EXT-DISPLAY]**
Connects to an external display monitor.

⓬ **ETHERNET CONNECTOR [LAN]**
Connects to a PC network through a LAN.

⓭ **TRANSVERTER CONNECTOR [X-VERTER]**
Connects to an external transverter for input/output.

⓮ **REFERENCE SIGNAL INPUT [REF IN]**
Input for a 10 MHz reference signal through the BNC connector.

⓯ **RECEIVE ANTENA [RX ANT–IN]/[RX ANT–OUT]**
Connects to an external unit, such as preamplifier or RF filter, using BNC connectors.
- This is located between the transmit/receive switching circuit and receiver's RF stage.

⓰ **CI-V REMOTE CONTROL JACK [REMOTE]**
Connects to a PC or other transceiver for remote control.

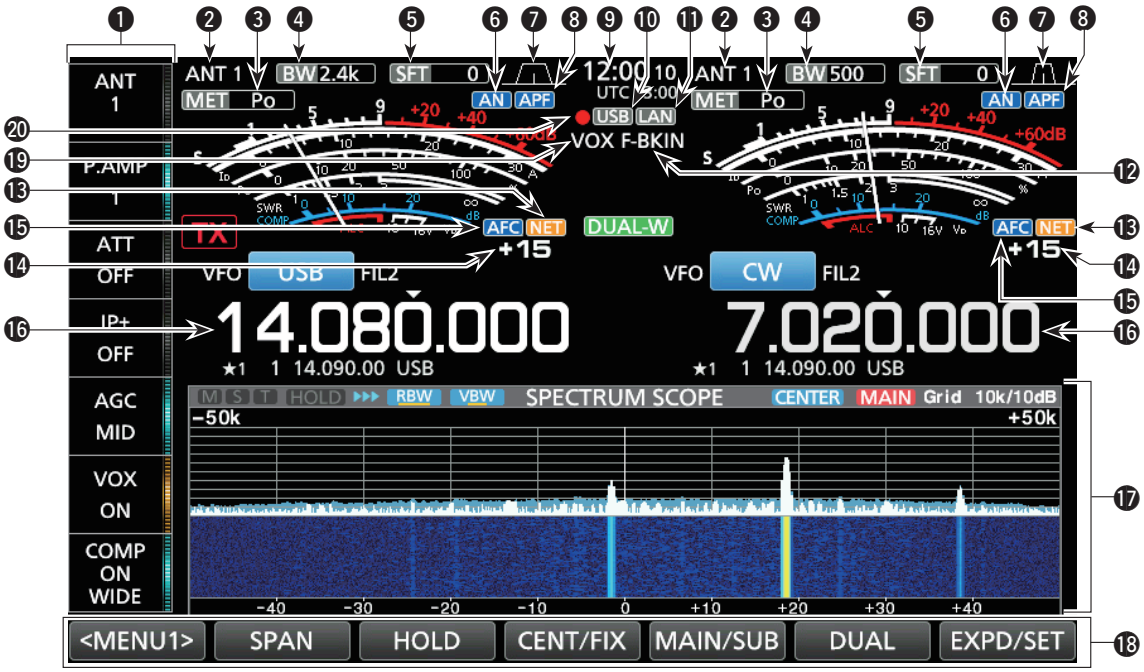
⓱ **METER JACK [METER]**
Outputs received signal strength, transmit output power, VSWR, ALC, speech compression, VD or ID levels for an external meter.

⓲ **EXTERNAL KEYPAD JACK [EXT KEYPAD] (p. 13-4)**
Connects to an external keypad for direct voice memory, memory keyer, RTTY memory or PSK memory transmission.

⓳ **STRAIGHT KEY JACK [KEY]**
Connects to a straight key, paddle, or an external electronic keyer with 6.35 mm (¼ in) stereo plug.

⓴ **ACC SOCKET [ACC1]/[ACC2]**
Connects to devices to control an external unit or to control the transceiver.

Touch screen display



❶ MULTI-FUNCTION KEY GROUP
Displays the Multi-function keys.

❷ ANTENNA INDICATOR (p. 7-1)
Displays the selected antenna connector between ANT 1 and ANT 2.

❸ METER TYPE INDICATOR (p. 3-7)
Displays the selected transmit parameter type. Select between Po, SWR, ALC, COMP, VD and ID.

❹ BANDWIDTH INDICATOR (p. 4-3, 4-4)
Displays the passband width of the IF filter.

❺ SHIFT FREQUENCY INDICATOR (p. 4-3)
Displays the shift frequency of the IF filter.

❻ NOTCH INDICATOR (p. 4-6)
"AN" is displayed when the Auto Notch function is ON, and "MN" is displayed when the Manual Notch function is ON.

❼ PASSBAND WIDTH INDICATOR (p. 4-3)
Displays the passband width for twin PBT operation and the center frequency for IF shift operation.

❽ AUDIO PEAK FILTER (APF) INDICATOR (p. 4-12)
Displayed when the Audio Peak Filter is ON.

❾ CLOCK READOUT (p. 9-1)
Displays the time (2 types) set on the TIME SET screen.

❿ USB INDICATOR (p. 6-1)
Displayed while a USB flashed drive is inserted.

⓫ LAN INDICATOR
Displayed while the transceiver and the optional RS-BA1 are connected through the LAN for remote control operation.

⓬ BK-IN/F-BKIN INDICATOR (p. 4-11)
Displayed while the Semi Break-in or Full Break-in function is ON.

⓭ NET FUNCTION INDICATOR (p. 8-7)
Displayed when the NET function is ON while in the PSK mode.

⓮ FREQUENCY OFFSET READOUT
Displays the offset value between the PSK signal and the operating frequency, while a PSK signal is received.

⓯ AFC FUNCTION INDICATOR
Displayed while the Automatic Frequency Control (AFC) function is ON, in the PSK mode.

⓰ FREQUENCY READOUT (p. 3-4)
Displays the operating frequency.
ⓘThe non-selected band's frequency readout (Main or Sub) is displayed in gray.

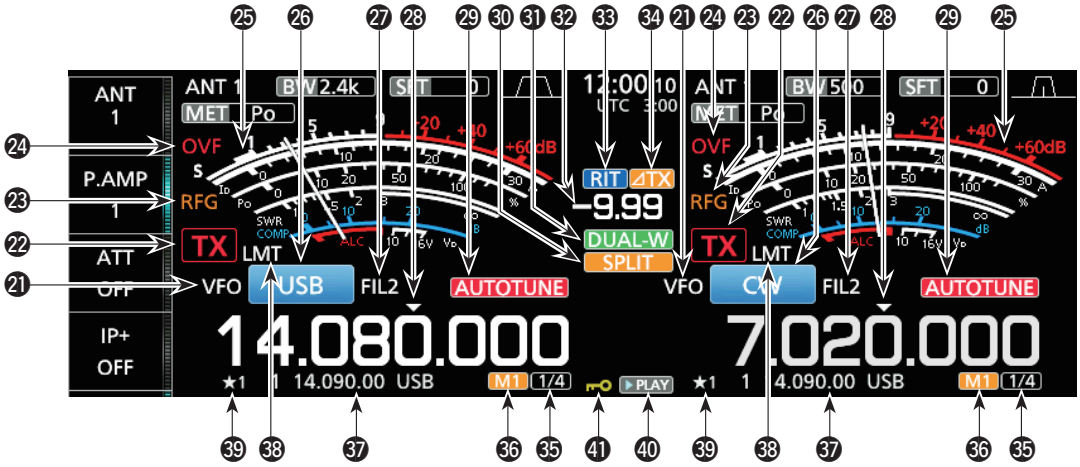
⓱ FUNCTION DISPLAY
Displayed when an item that has a function display is selected. For example, the Spectrum Scope.

⓲ FUNCTION KEYS (p. 5-1)
Displays the operating parameters, modes, frequencies and indicators, and so on.

⓳ VOX INDICATOR
Displayed while the VOX function is ON.

⓴ VOICE RECORDER ICON
- "●" is displayed while recording.
- " II " is displayed while pausing.

Touch screen display (Continued)



㉑ VFO/MEMORY ICON (p. 3-1)
"VFO" is displayed when the VFO mode is selected, and the memory number is displayed when a Memory channel is selected.

㉒ TX STATUS INDICATOR (p. 3-4, 3-9)
Displays the transmit status of the displayed frequency.
- TX is displayed while the displayed frequency is within the amateur band range.
- TX (Red background) is displayed while transmitting.
- TX (With a border of short dashes) is displayed when the selected frequency is outside of the amateur band frequency.
- TX (Grayed out) is displayed while the transmitter is inhibited.

㉓ RF GAIN INDICATOR (p. 3-7)
Displayed when AF⊙RF/SQL (outer) is set counterclockwise from the 11 o'clock position. The indicator shows that the RF gain is reduced.

㉔ OVF ICON (p. 3-7)
"OVF" is displayed when an excessively strong signal is received.

㉕ METER INDICATOR (p. 3-7)
Displays the S, ID, Po, SWR, COMP, ALC and VD meters.

㉖ MODE INDICATOR (p. 3-3)
Displays the selected operating mode.

㉗ IF FILTER INDICATOR (p. 4-3, 4-4)
Displays the selected IF filter.

㉘ QUICK TUNING ICON (p. 3-4)
Displayed when the quick Tuning Step function is ON.

㉙ AUTO TUNE INDICATOR (p. 4-8)
Displays "AUTOTUNE" when the Auto Tuning function is ON.

㉚ SPLIT ICON (p. 4-9)
Displayed when the Split function is ON.

㉛ DUALWATCH ICON (p. 3-2)
Displayed when using Dualwatch.

㉜ SHIFT FREQUENCY READOUT (p. 4-1)
Displays the shift offset for the RIT or ⊿TX functions, while these functions are ON.

㉝ RIT ICON (p. 4-1)
Displayed when the RIT function is ON.

㉞ ⊿TX ICON
Displayed when the ⊿TX function is ON.

㉟ 1/4 TUNING STEP INDICATOR (p. 3-5)
Displayed while the 1/4 Tuning Step function is ON.

㊱ M1~M8/T1~T8
- Displays "M1"~"M8" while using the Memory Keyer function is used.
- Displays "T1"~"T8" while using the Voice TX memory function.

㊲ MEMORY CHANNEL/VFO READOUT (p. 3-1)
Displays the selected memory channel contents in the VFO mode, and displays the VFO contents in the Memory mode.

㊳ LMT ICON
Displayed if the power amplifier temperature becomes extremely high and the protection function is activated after transmitting continuously for long periods of time.

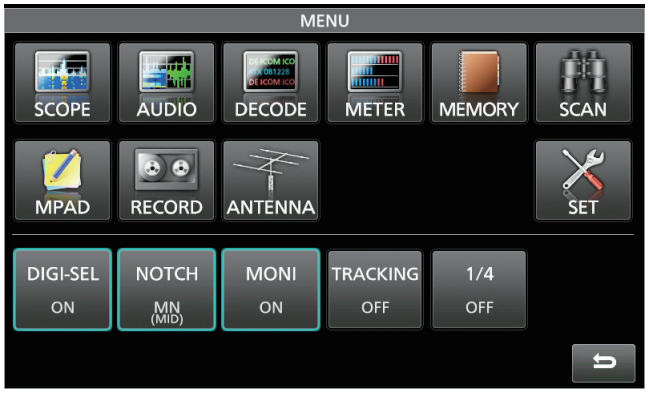
㊴ SELECT MEMORY CHANNEL ICON
Indicates that the displayed memory channel is assigned as a Select memory channel (★1~★3).

㊵ PLAY ICON
Displayed while playing the recorded voice audio.

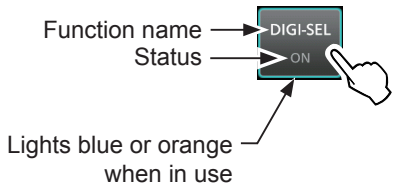
㊶ DIAL LOCK INDICATOR (p. 3-6)
Displayed while the Lock function is ON.

Touch screen display (Continued)

◇ MENU screen

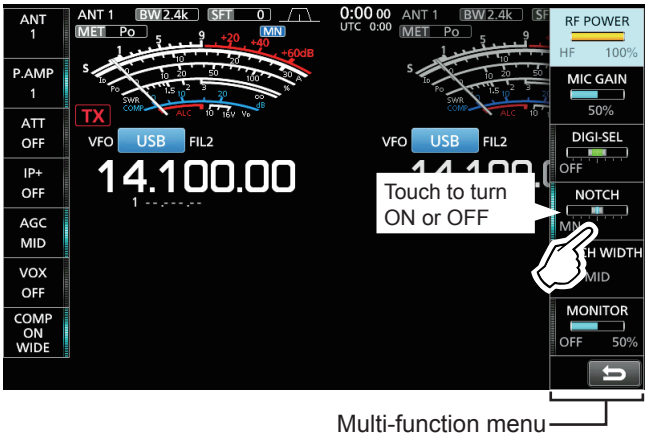


- Open the MENU screen by pushing MENU.



ⓘThe items displayed on the menu differ, depending on the selected operating mode.

◇ Multi-function menus



- Open the Multi-function menu by pushing MULTI (Multi-function control).
- While the Multi-function menu is open, touch the desired item and rotate MULTI to adjust the value.

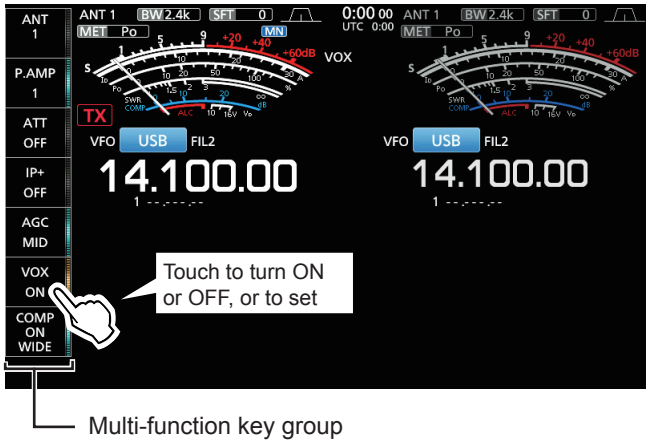
ⓘYou can open other menus by holding down NB or NR for 1 second, or touching “ATT,” “VOX,” “BK-IN” or “COMP” in the Multi-function key group for 1 second.

Multi-function menu items

SSB	CW	RTTY	PSK
RF POWER	RF POWER	RF POWER	RF POWER
MIC GAIN			
DIGI-SEL	DIGI-SEL	DIGI-SEL	DIGI-SEL
NOTCH	NOTCH	NOTCH	NOTCH
NOTCH WIDTH	NOTCH WIDTH	NOTCH WIDTH	NOTCH WIDTH
MONITOR		MONITOR	MONITOR
AM	**FM**	**NB**	**NR**
RF POWER	RF POWER	LEVEL	LEVEL
MIC GAIN	MIC GAIN	DEPTH	
DIGI-SEL	DIGI-SEL	WIDTH	
NOTCH	NOTCH		
NOTCH WIDTH			
MONITOR	MONITOR		
ATT	**VOX**	**BK-IN**	**COMP**
LEVEL	GAIN	DELAY	LEVEL
	ANTI VOX		TBW
	DELAY		
	VOICE DELAY		

Touch screen display (Continued)

◇ Multi-function key group

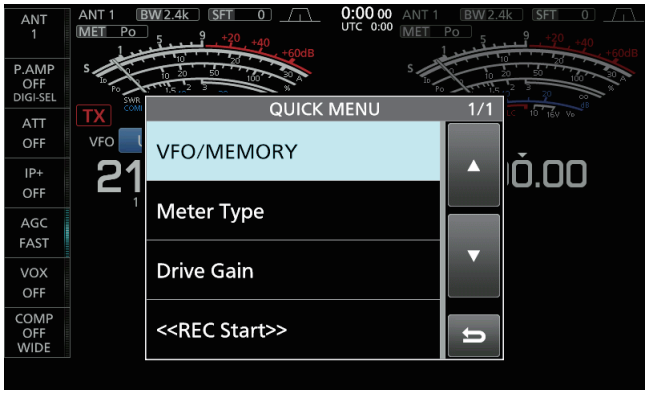


- Touch a key to turn the function ON or OFF.
- Touching “ATT,” “VOX,” “BK-IN” or “COMP” for 1 second opens the ATT menu, VOX menu, BK-IN menu or COMP menu.
  ⓘSee “Multi-function menus” on the previous page for details.

Multi-function key group items

	SSB	CW	RTTY	PSK	AM	FM
ANT	✓	✓	✓	✓	✓	✓
P.AMP	✓	✓	✓	✓	✓	✓
ATT	✓	✓	✓	✓	✓	✓
IP+	✓	✓	✓	✓	✓	✓
AGC	✓	✓	✓	✓	✓	✓
VOX	✓				✓	✓
BK-IN		✓				
COMP	✓					
TONE						✓

◇ QUICK MENU



- Open the QUICK MENU by pushing QUICK.

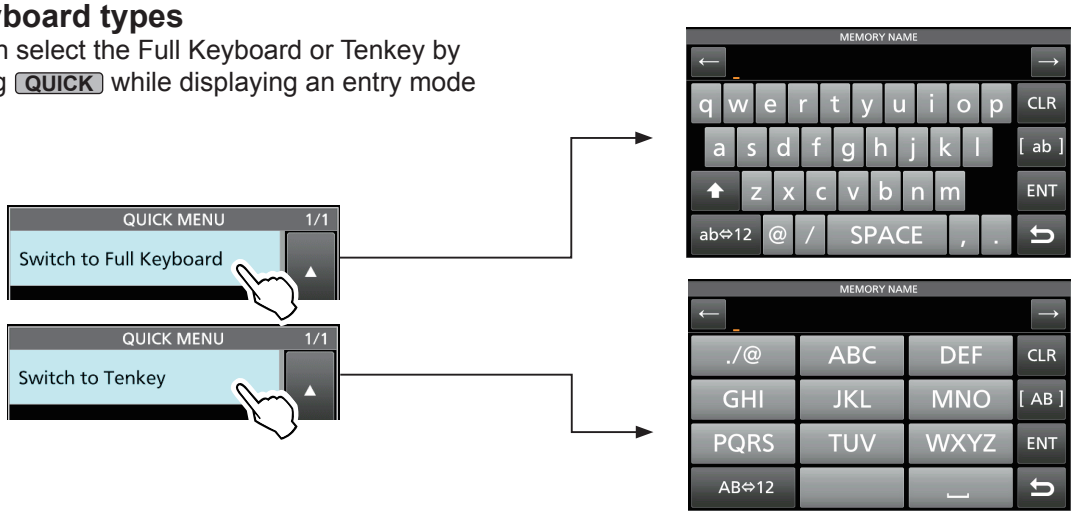
Keyboard entering and editing

You can enter and edit the items on the following screens.
ⓘUsable characters, symbols, and the amount of characters that can be entered differs, depending on the editing item.

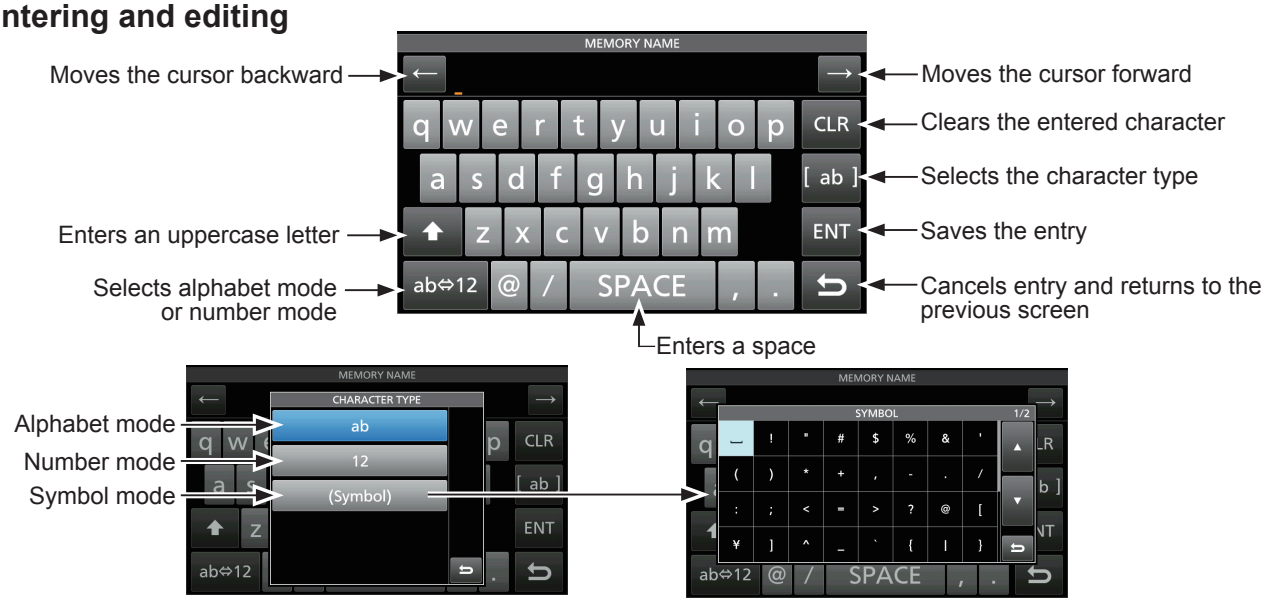
- MY CALL
- FILE NAME
- NETWORK NAME
- NETWORK RADIO NAME
- NETWORK USER1 ID
- NETWORK USER2 ID
- NETWORK USER 1 PASSWORD
- NETWORK USER 2 PASSWORD
- NTP SERVER ADDRESS
- CLOCK2 NAME
- KEYER MEMORY
- PSK MEMORY
- RTTY MEMORY
- VOICE TX RECORD (T1) ~ (T8)
- MEMORY NAME

◇ Keyboard types

You can select the Full Keyboard or Tenkey by pushing QUICK while displaying an entry mode screen.



◇ Entering and editing



Keypad entering and editing (Continued)

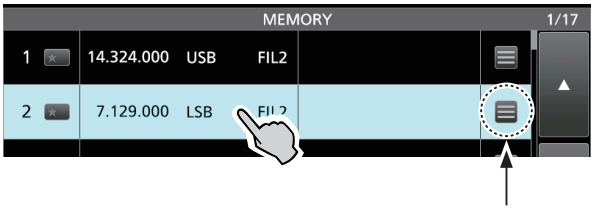
◇ Entering and editing example

Entering “DX spot 1” in the Memory channel 2

1. Display the MEMORY screen.

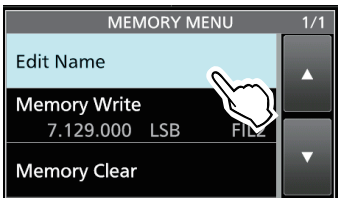
   MENU » MEMORY

2. Touch the memory channel 2 for 1 second.
   • The MEMORY MENU screen is displayed.

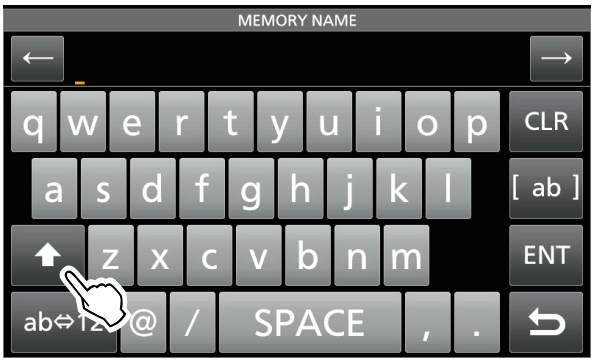


You can also display the MEMORY MENU screen by touching this key.

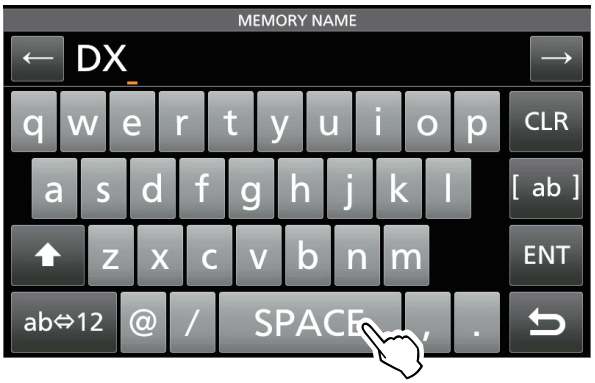
3. Touch “Edit Name.”
   • The MEMORY NAME screen is displayed.



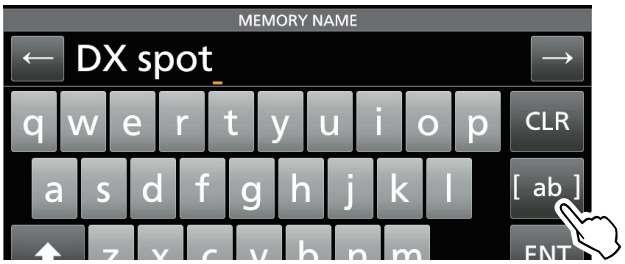
4. Touch [↑], and then touch [D].
   ⓘTouching [↑] changes between uppercase and lowercase letter.



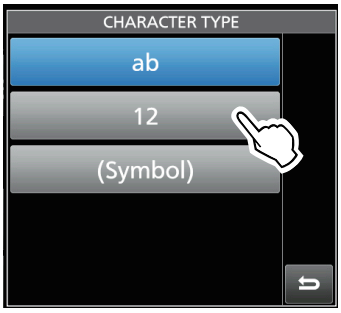
5. Touch [↑] again, and then touch [X].
6. Touch [SPACE] to enter a space.



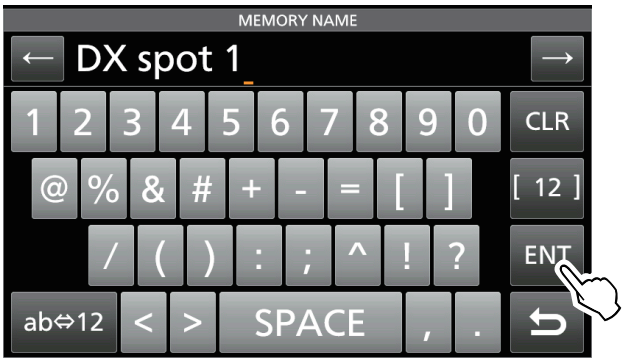
7. Touch [s], [p], [o], and then [t].
8. Touch [SPACE] to enter a space.
9. Touch [ab].
   • The CHARACTER TYPE screen is displayed.

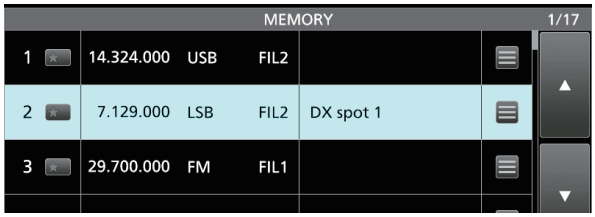


10. Touch [12].



11. Touch [1].
12. Touch [ENT] to save the entry.





• Returns to the previous screen.