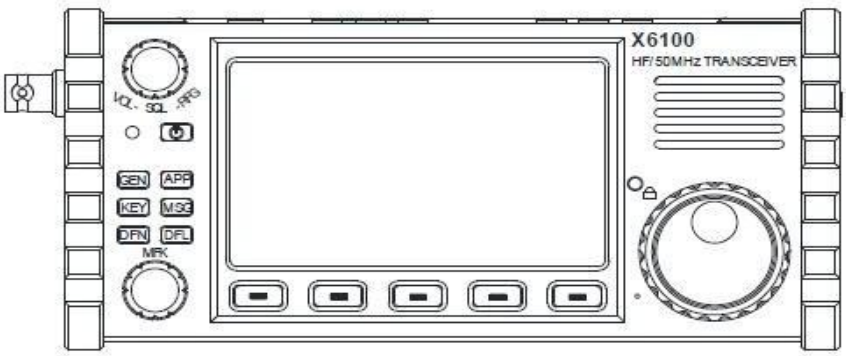


X6100, an ultra-portable short-wave transceiver that adopts high-performing SDR software radio platform architecture, powerful baseband and RF units, transmitting and receiving separated dual-channel structure and 24bit sampling and large dynamic RF front-end unit, can obtain extremely high radio transmitting and receiving indicators.

The whole device integrates rich and varied operation functions and desktop-like functions, such as recording call, variable bandwidth digital filter, digital noise reduction and so on, which brings you a new cognition and experience on amateur radio. With its compact structure and appearance, you can immediately set forth on a journey with it, get close to nature, and enjoy the fun of outdoor communication.

- HF/50MHZ full mode (supporting data communication)
- Transmitting power: external power supply: 10W, battery: 5W
- 4-inch high-resolution color screen (800*480)
- Built-in large capacity lithium battery pack (3500mAh, 7.4V)
- Built-in efficient automatic antenna tuner
- Integrated modem, preset message, CW automatic call
- Integrated USB line control/transmission, supporting USB HOST.

We strongly recommend you to read through this Manual to rapidly keep abreast of the operation & control method of the X6100 before using it.

- *To carry out effective transmission, it is necessary to obtain the corresponding amateur radio operation qualification and apply for the station setup license.*
- *Transmission activities shall not be carried out in non-amateur frequency bands.*

Power On/Off Operation Tips

The X6100 integrates a complete operating system. It takes a certain amount of time to turn on/off the machine. Please pay attention to the following tips:

Power on: Press and hold the power button until the screen displays the XIEGU icon , then release the power button and wait for the system to start up.

Power off: Press and hold the power button until the screen goes black, then release the power button. At this time, the system is still in the process of shutdown, please do not perform other operations or force the power off. After about 10 seconds, the X6100 was turn off.

Notice:

- It is recommended to allow more than 30 seconds between powering off and powering on again.
- Please shut down the device using the correct shutdown procedure. Do not force a power outage to shut down the device, as this may damage the internal memory.

Safety Precautions

 Do not use this device in lightning weather.Disconnect the power supply and antenna in advance.

 Do not touch the antenna during the transmission of the device.

 Do not apply AC power to the DC interface on the side panel of transceiver.Otherwise it may cause fire or damages to the device.

 Do not apply more than 15VDC voltage to the DC interface on the side panel of transceiver.Otherwise it may cause fire or damages to the device.

 Do not reverse the polarity of the power cable.Otherwise it may cause fire or damages to the device.

 Do not operate or touch the device with wet hands.Otherwise it may cause electric shock or damages to the device.

 In case of smoke or peculiar smell, cut off the power supply immediately, remove the power cable, and then contact the supplier.

 Do not use the device in areas, vehicles or aircraft where it is prohibited.

 Do not use this device while driving or operating engineering equipment.

 Do not use the device in petrol stations, gas stations or the place with combustible gas around.

 Do not use the device in hospitals or in an environment where people wear medical devices.

 Do not expose the device to rain, snow or any liquid.Otherwise it may cause damages to the device.

 Do not use headphones at high volume.

 Do not disassemble or modify the device.

 Do not place the device near the heat source or in direct sunlight.

 Do not place the device in a dusty or damp place.

 Do not place the device in a poorly ventilated place and do not block any radiator on the device.Otherwise, the deceive may be damaged due to overheating.

 Do not wipe the device with organic solvents, such as benzene or alcohol.This may damage the surface of the equipment.

 Do not apply impact force on the device.Otherwise it may cause fire or damages to the device.

 Do not place the device in the area with temperature range beyond -10°C~+55°C.

 Cut off the power supply and remove the external power cable if the device is not used for a long time.

Battery Precautions

This device contains lithium-ion battery components, so improper use may result in dangers such as smoke, fire or battery rupture.

■ The battery pack is installed inside the backplane of the equipment.Do not hit the backplane of the device.

■ Do not place the device in a place where the temperature is higher than 60°C; otherwise, the battery pack may rupture or catch fire.

■ Do not place the back of the device near heat sources, such as stove fire or direct sunlight.

■ Do not weld, disassemble or modify battery components by your won.This can lead to protection failure and battery damage, which can further lead to fire and other hazards.

■ In case of obvious deformation, seepage or peculiar smell at the installation place of the battery pack, the device shall not be further used, and distributor shall be contacted immediately for assistance.

■ Do not use the device beyond its temperature range; otherwise, the service life of the device and battery pack may be reduced or damaged.

■ Do not leave the battery pack in fully charged or fully discharged state for a long time. Otherwise, the service life of battery pack will be shortened.Please maintain the electric quantity of battery pack within 40%~50% if the device is to be left unused for a long time, and then keep it properly.

■ The built-in battery pack typically has a lifespan of approximately 2 years. Please replace the battery pack after approximately this time. Even if the battery is still usable after this period, its performance will significantly decline, and its usage time will be greatly reduced. Generally, the battery pack can be charged and discharged approximately 200 to 300 times. This depends on specific usage conditions.

■ Do not charge the device with other non-compliant chargers.

■ Pay attention to the condition of the device when charging.Stop charging immediately in case of any abnormality.

■ Do not charge the device in vehicles under direct sunlight.

Important Note

■ Make sure you have had relevant operating certificates or permissions before making a call on the frequency band of amateur radio.

■ Make sure the antenna feed system meets the transmitting requirements before actual transmitting.

■ The device may be hot after continuous and long-term transmitting (such as FT8 operation). Please appropriately extend transmitting interval and strengthen external heat dissipation.

■ Please place the device in a safe and reliable place and keep it away from children or unauthorized persons.

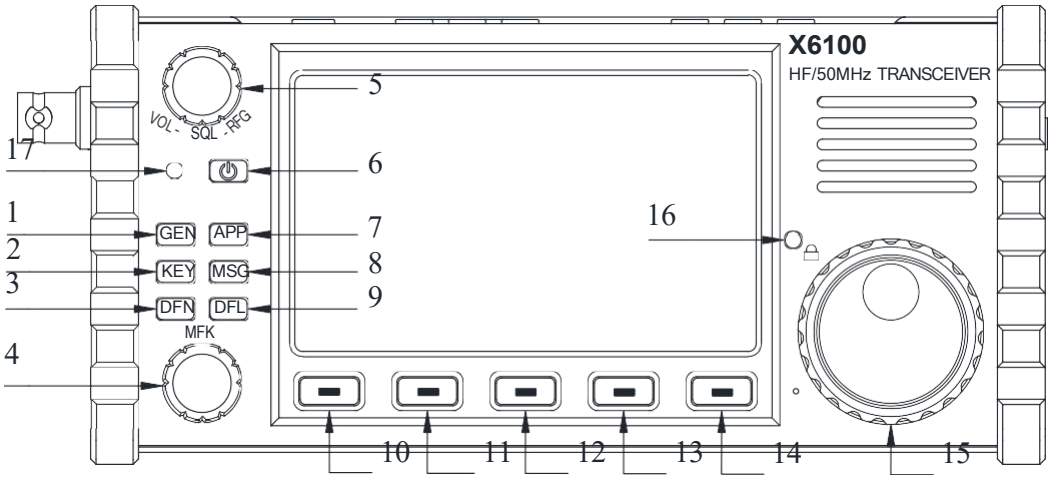
Electromagnetic Interference

It shall be noted when using wireless LAN or Bluetooth devices that when other wireless devices, such as wireless mouse, wireless keyboard and wireless router, work in the same frequency band, they may interfere with each other, resulting in unstable or interrupted connection of the device. In such case, please keep away from other devices or stop using those devices.

==========

Panel Instructions

Front panel



1. GEN Button
Press to access the general settings menu.

2. KEY Button
Press to access the key settings menu.

3. DFN Button
Press to access the numeric function menu.

4. MFK Multifunction Knob
Default:
Custom:

5. VOL/SQL/RFG Knob
Default: Volume adjustment.
Press this knob once: Adjusts the SQL squelch depth.
Press this knob again: Adjusts the RFG gain setting.

6. Power Button
Press and hold to turn on the transceiver. Press and hold until the screen turns off to turn off the transceiver.

7. App Button
Press to bring up the function menu.

8. MSG Button
Press to bring up the message editing and storage interface.

9. DFL Button
Press to bring up the digital filter settings interface.

10-14 Multifunction Buttons
Press to execute the function displayed on the screen.

15 Main Knob
Rotate to adjust the frequency.

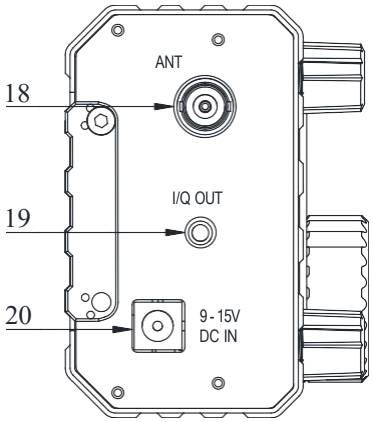
16 Lock Button

Press and hold for 2 seconds to lock the large dial. Press and hold again for 2 seconds to unlock the large dial. Short press this button to adjust the screen backlight brightness:

--When using the internal battery, it provides 5 levels of backlight adjustment.
--When using external power, it provides 10 levels of backlight adjustment.

17 Power/TR Indicator
This indicator light is green when the transceiver is powered on.
This indicator light is red when the transceiver is in transmit mode.

Left plate



18 ANT

BNC interface, 50Ω, for antenna connection.

19 I/Q OUT

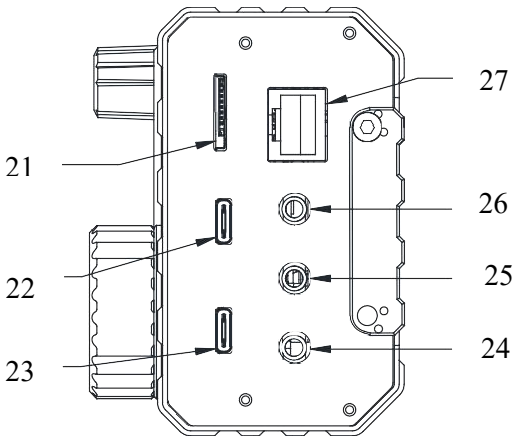
IQ signal output port 3.5mm stereo socket.

20 DC IN

External power input port, 5525 type.

Note: input voltage shall not be higher than 15V DC.

Right plate



21 CARD

MicroSD memory card slot.

22 DEV

USB port. Slave interface.

23 HOST

USB port. Host interface.

24 S/P

External speaker/headphone interface, with speaker or headphone output can be set via menu. It is a 3.5mm stereo interface achieving stereo output.

Note: short circuit or silence will be caused if plugging the single track plug externally.

25 KEY

It is a 3.5mm stereo interface used to connect manual/auto tapper. See page 8 for connection.

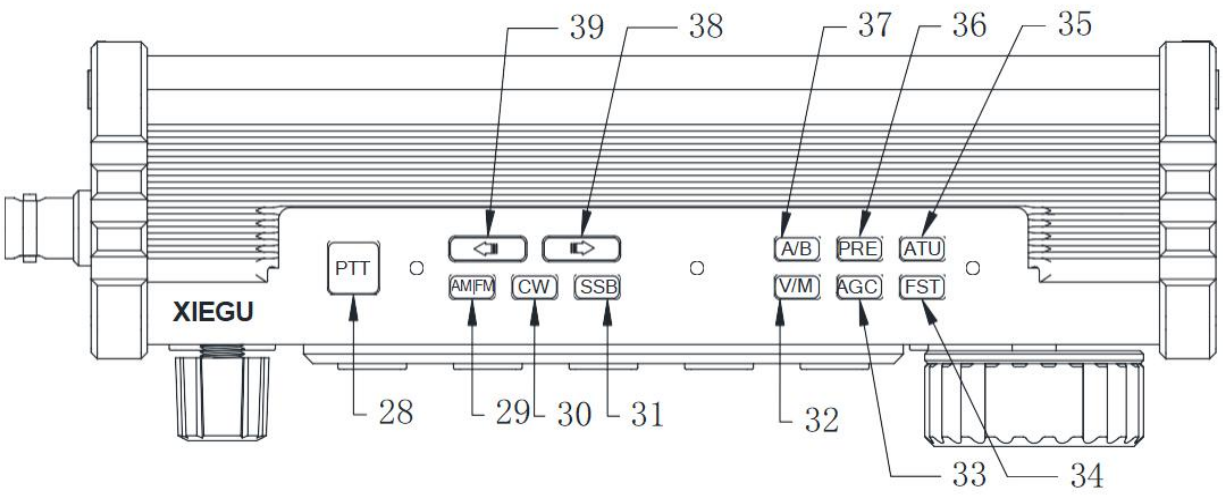
26 ACC

It is a 3.5mm stereo interface. See page 8 for interface definitions.

27 MIC

Hand microphone interface. The interface is of type RJ45.

Top button



28 PTT

PTT button on device body.

29 AM|FM

AM/FM mode switch button.

30 CW

CW mode switch button.

31 SSB

SSB mode switch button.

32 V/M

VFO/MEMO status switch.

33 AGC

AGC switch/speed selection button.

34 FST

Fast step selection button.

35 ATU

Built-in antenna tuner access/tuning button.

36 PRE

Pre-amplifier/pre-attenuator switch.

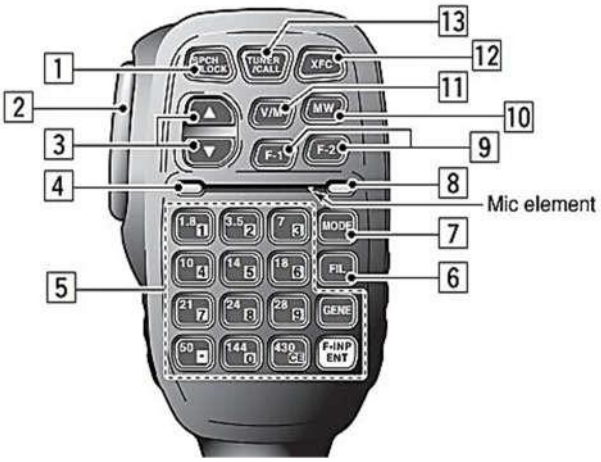
37 A/B

VFOA-VFOB switch button.

38~39 Left and right switch

Frequency band/channel increase and decrease switch.

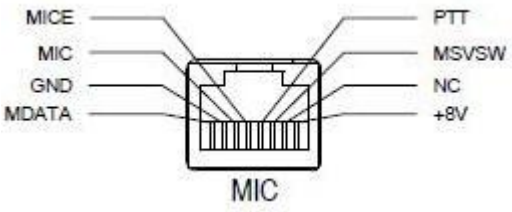
Hand microphone button



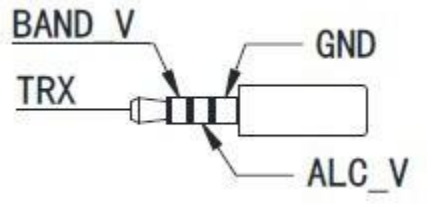
1. SPCH/LOCK button	Short press to lock/unlock the larger impeller
2. PTT button	Transmitting control button
3. Up/down	Frequency step +/- under VFO mode; previous/ next channel under channel mode
4. Transceiver indicator light	Hand microphone operation indicator light
5. Figure button area	Waveband direct access/numeric keyboard area
6. FIL button	Filter selection
7. MODE button	Selection of working mode of host
8. Functional indicator light	Button action indication
9. F1/F2	Custom functions can be set in RADIO SETTING2
10. MW button	Short press to save VFO to the current channel number
11. V/M button	Short press to switch the VFO/MEMO mode
12. XFC button	Short press to switch VFO A/B; long press to copy VFO from foreground to background
13. TUNER button	Short press to switch on/disconnect automatic antenna tuner; long press to enable automatic antenna tuner

Interface Definition

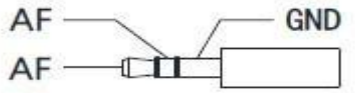
Microphone port



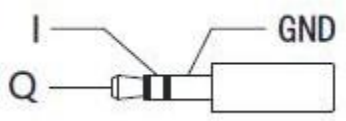
Definition of ACC interface



Connection of S/P Port



Definition of I/Q OUT interface

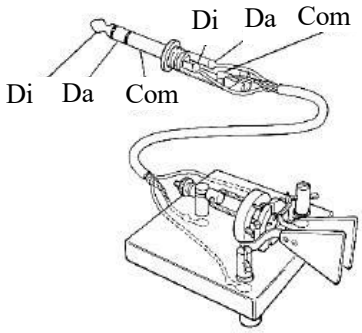


Connection of KEY Port

Connect manual/automatic tapper according to the schematic diagram shown in the right figure.

Note :

- **If the connector of the manual tapper is a 6.5mm 2-core plug, please change it to a 3-core 3.5mm stereo plug according to the wiring method shown in the right figure, and connect the trigger end of the electric key to the "Di" or "Da" terminal.**
- **Take care that direct use of the 2-core to 3-core adapter or incorrect wiring may result the radio in CW transmission status all the time.**

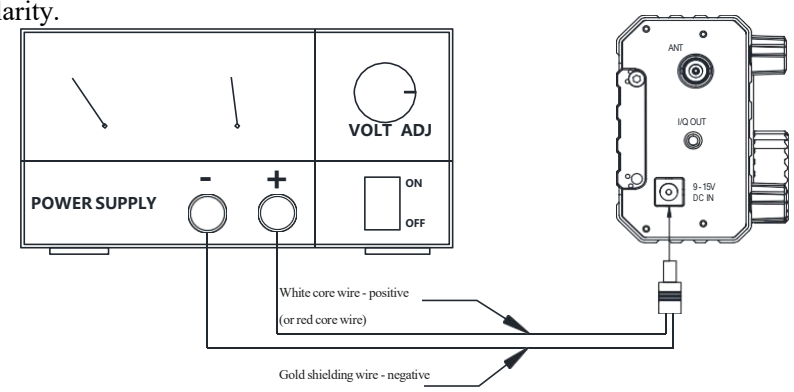


- Using plugs of other specifications may damage the socket.
- X6100 may switch to transmitting mode if plugging in or unplugging the tapper plug when it is working.
- Please cut off the power supply of X6100 before connecting or disconnecting the tapper.

Power source wiring

The X6100 can use a 13.8V external DC power supply. The DC power supply must have a current load capacity of at least 3.5A. The included power cord can be used to connect the radio to the DC power supply.

When connecting the DC power supply, please carefully follow the markings in the diagram below to avoid reverse polarity.



■ When using an external power supply, to prevent external interference from entering the radio through the power cord, an EMC ferrite core can be placed on the power cord. Install the ferrite core as close to the radio as possible.

Charging

When the battery symbol is empty and red, it indicates that the battery is depleted, and the X6100 will automatically shut down.

Please use the supplied charging adapter to charge the X6100 transceiver. Plug the AC end of the charging adapter into a power outlet and the output end into the DC port on the left side of the X6100 to charge the internal battery (the charging switch must be turned on in the General Settings 1 menu). The first four charging cycles after initial use will take a relatively long time; it is recommended to charge continuously for 8-10 hours. Before four charge-discharge cycles are completed, the displayed battery level will have a larger error. Keep the charging process continuous until the charging indicator is complete; this helps the fuel gauge to accurately measure the capacity. The X6100 will automatically stop charging the battery after charging is complete.

When charging while the device is off, the T/R indicator light will show the charging status. The status indicators are as follows:

- Green light: Charging in progress; the remaining battery level needs to be checked by turning on the device.
- Red light: Battery malfunction;
- No light: The indicator light will not illuminate when the charging option is turned off in the menu.

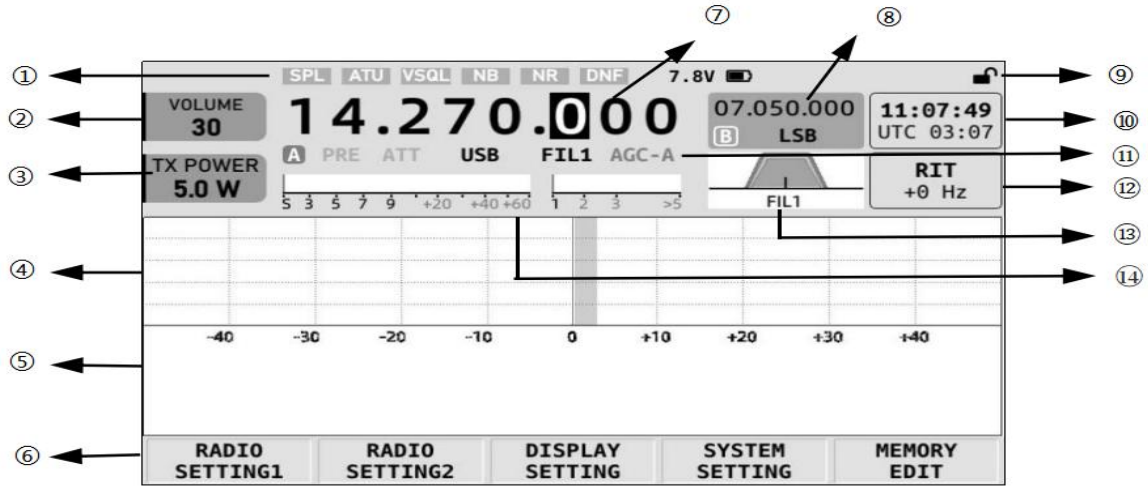
Note:

- When using external power, carefully check the polarity of the power cord. Reversing the polarity is strictly prohibited.
- Reversing the power supply may cause serious damage to the radio.
- Do not use chargers that do not meet specifications to charge the radio, as this may damage the equipment.

Warning!

1. The charging adapter is for charging the X6100 only and must not be used for transmitting, otherwise it may damage the device.
2. Under no circumstances should the DC port on the left side of the X6100 be connected to a voltage higher than 15V DC, otherwise it may cause serious damage to the device.

Screen Display Interface



① Status Display Area 1
This area displays the on/off status of SPL, ATU, SQL, NB, NR, and DNF.

② Volume Labels
Displays volume/squelch level/RF gain adjustment.
Short press the volume knob to switch between these three states.

③ Multi-function Quick Access Labels
The image shows the transmit power adjustment label. The items displayed here can be quickly set via the menu.

④ Spectrum Display Area
Displays the lowest signal strength at approximately -122dBm.

⑤ Waterfall Chart Display Area

⑥ Multi-function Menu Area
Short press the corresponding button at the bottom of the screen to operate the corresponding function.

⑦ Main VFO Frequency Display Area

⑧ VFOB Display Area

⑨ Status Display Area 2
This area displays the status of the lock/USB port/Bluetooth/Wi-Fi/battery/volume.

⑩ Time Display Area

⑪ Meter Display Area 3
This area displays the PRE/ATT/mode/AGC status.

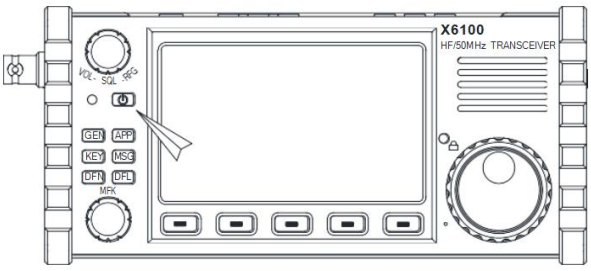
⑫ RIT Receive Offset

⑬ Audio Spectrum Display Area

⑭ Meter Display Area
This area displays the S-meter and CW frequency alignment window.

Basic Operation

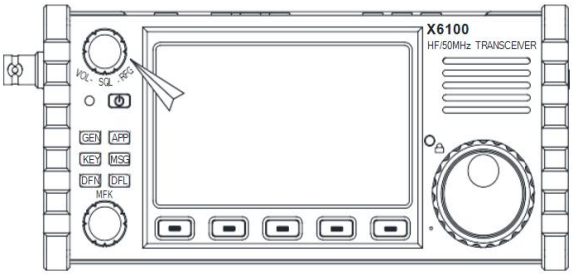
Turn on/off radio



Instructions:
1. Press and hold the power button until the XIEGU icon appears on the screen. Release the power button and wait for the system to boot up.

2. Press and hold the power button until the screen goes black. Release the power button. The system is still shutting down; do not perform any other operations or forcibly disconnect the power. The X6100 will completely shut down after approximately 10 seconds.

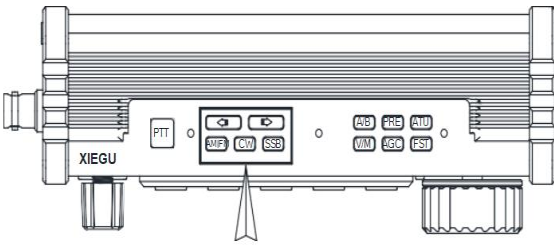
Adjust audio volume



1. Turn the volume knob to the left or right to adjust the output volume.

2. Short press the volume knob to switch volume/muting depth/RF gain adjustment.

Operating frequency band and mode selection



Follow the instructions below to select the amateur band and set mode.

- Frequencies beyond the amateur band can only be received while cannot be transmitted.

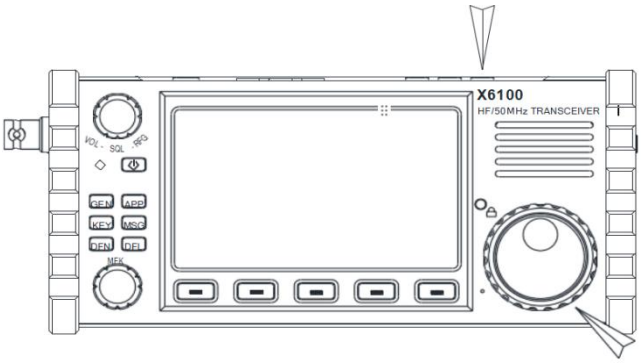
1. Press the corresponding mode button at the top of the radio to switch to corresponding mode.
2. Press the left and right [←] and [→] buttons to switch the operating frequency bands in sequence:

1.8MHz◄-►3.5MHz◄-►7MHz◄-►10MHz◄-►14MHz◄-►18MHz◄-►.....

21MHz◄-►24MHz◄-►28MHz◄-►50MHz

3. Figure buttons on hand microphone can be used to directly switch to corresponding wave band.

Setting the Operating Frequency



1. Rotate large knob to set the frequency. Clockwise rotate the knob to increase the operating frequency and anticlockwise rotate the knob to decrease the operating frequency.

2. Press the top [FST] button to change the frequency adjustment bit for fast adjustment.

3. Set frequency by multi-function hand microphone

- Press [F-INP ENT] key on hand microphone, and the X6100 will be in frequency setting state, and cursor will be flickering at the first place on the left of frequency display bit;
- Input expected frequency values one by one, and press [F-INP ENT] key again to complete the frequency setting.

For example, press buttons in following sequence to set current frequency as 14.25000MHz:

1. Press [F-INP ENT] key firstly;
2. Press 1 4 . 2 5 0 0 0 number keys one by one;
3. Press [F-INP ENT] key again to complete the setting.

Adjustment of RF gain and muting level

Proper RF gain can facilitate to improve the quality of signal received. In general, appropriately reducing the RF gain value at some low-frequency ranges with strong interference can significantly improve the hearing.

Adjustment methods of RF gain:

1. Short press the volume knob to bring up the RF GAIN setting items. The tag on the left side of the screen will display RF GAIN.

2. Rotate the volume knob to adjust the RF gain value.

SQL Adjustment Method:

When you need to mute signals or noise below a certain amplitude, you can set a reasonable squelch level to turn off the audio switch when there is no signal, thus muting the speaker.

1. Press the volume knob repeatedly for short bursts to bring up the SQL settings. The label on the left side of the screen will display "SQL THR".

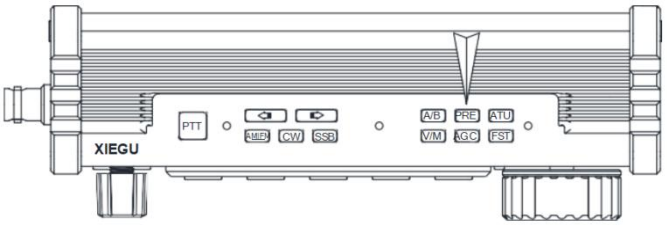
2. Rotate the volume knob to set the squelch level. The screen will display the squelch level.

◆ The squelch level increases gradually from 0 to 100. For example, setting the squelch level to 3 means that the speaker will only produce sound when the signal strength is greater than 3; otherwise, it will remain silent.

Preamplifier | Preamplifier Attenuator

The pre-amplifier can improve the receiving effect of some weak signals of high frequency range and the sensitivity of the receiver.

Pre-attenuator can improve barrage jamming caused by strong signals and the performance of receiver.



Operation method:

1. Short press the [PRE] button at the top, and the character PRE appears at the top of the screen, indicating that the pre-amplifier has been turned on.

2. Short press [PRE] button again and no character will appear on the top of the screen, indicating that the current state is shoot-through state.

3. Long press [PRE] button again and the character ATT will appear on the top of the screen, indicating that the pre-attenuator has been turned on.

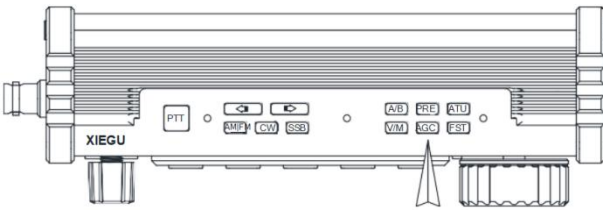
4. Press and hold the [PRE] button again, and the "ATT" function will be turned off.

■ Before they are used in frequency range less than 14MHz, disabling the pre-amplifier is recommended so that the radio can be in the shoot-through state, which is conducive to strengthen the front-end performance of the receiver and reduce the influence of interference signals.

■ When the level displays that the received signals exceed -50dBm, turning on the pre-attenuator is recommended to avoid the decreasing of the dynamics of the receiver due to strong signals.

Automatic gain control (AGC)

Select appropriate AGC control parameters in different work modes to achieve a good receiving effect.



Operation method:

1. Press [AGC] key at the bottom of the screen in a short time, enable/ disable or select different AGC modes and circulate them in the following order:

AGC-AUTO → AGC-OFF → AGC-SLOW → AGC-FAST

AGC-S: slow AGC control

AGC-F: fast AGC control

AGC-A: automatic AGC control

AGC--: AGC off

Recommended settings: AM mode: AGC-S

SSB/CW mode: AGC-F

2. When the AGC-A mode is selected, the radio will automatically select the appropriate AGC control parameter according to the current work mode.

■ It is recommended to turn on AGC, which will improve the performance of the receiver and will not affect the receiving sensitivity index.

Transmitting (SSB/AM/FM mode)

Operation Instructions:

1. Press the PTT button on the microphone to begin transmission. Speak normally into the microphone.

2. During transmission, the TX indicator light on the X6100 will turn red, and the indicator light on the microphone will also turn red.

3. Release the PTT button to return to receiving mode.

Transmitting (CW mode)

Use manual tapper or external keying unit to insert into the KEY port at the tail of the radio. (See page 8 for the definition of connection)

1. Insert keys into the KEY port;

2. Press [CW] button on the top of radio to switch mode to CW (or CWR);

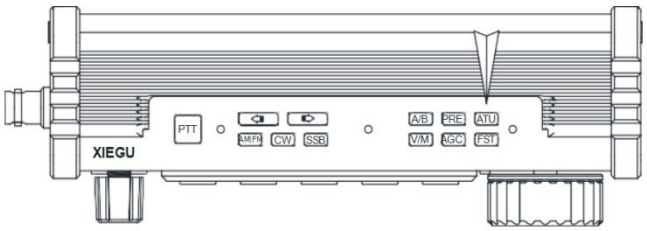
3. Turn on QSK function in menu and set appropriate QSK time;

4. Press the tapper to enable CW communication.

● If the "CW TRAINER" practice function is turned on in the menu, there will be only CW sidetone of transceiver after pressing tapper under such conditions, but signals will not be transmitted externally.

Automatic Antenna Tuner

There is an efficient ATU integrated inside the X6100 radio to help you quickly erect and debug antenna.



1. Short press [ATU] button to connect with built-in antenna tuner. There will be an antenna icon at the top of screen.

2. In the case that the antenna tuner is accessed, long press the [ATU] key for 1s to start ATU automatic tuning functions. It will automatically return to receiving state after the tuning.

Note :

1. Briefly pressing the [ATU] button and having the ATU icon light up indicates that the antenna tuner function is on. However, simply turning it on does not activate the tuning process.

2. To use the built-in antenna tuner, it must remain on after tuning.

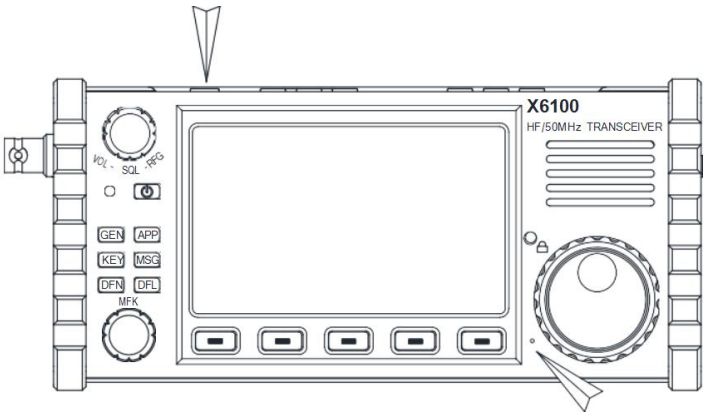
3. If you start transmitting after tuning, and the "ATU" icon flashes at the top of the screen, it indicates that the current antenna VSWR is still high, and retuning is required.

4. When the antenna naturally resonates to the current frequency band, be sure to turn off the antenna tuner..

5. When using a whip antenna or monopole antenna and turning on the internal antenna tuner for tuning, it may cause strong radio frequency interference to the device or other electronic equipment.

Use the build-in PTT of radio for transmitting

The X6100 radio integrates PTT button and build-in microphone, which make it convenient when using the radio outdoors.



Instructions：

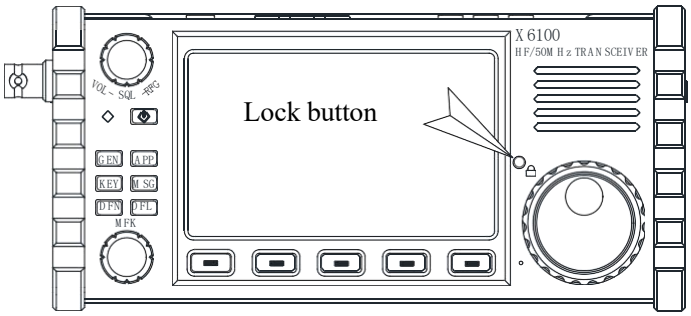
1. Press the PTT button on the top of the device and speak to the built-in microphone hole at the left of large knob to transmit voice.

2. Release the PTT button after transmitting to return to receiving status.

Note :

■ Do not place the antenna very close to or near exposed parts of the body, especially the face or eyes, when transmitting in hands.If you need to be close to the antenna, transmit at low power.

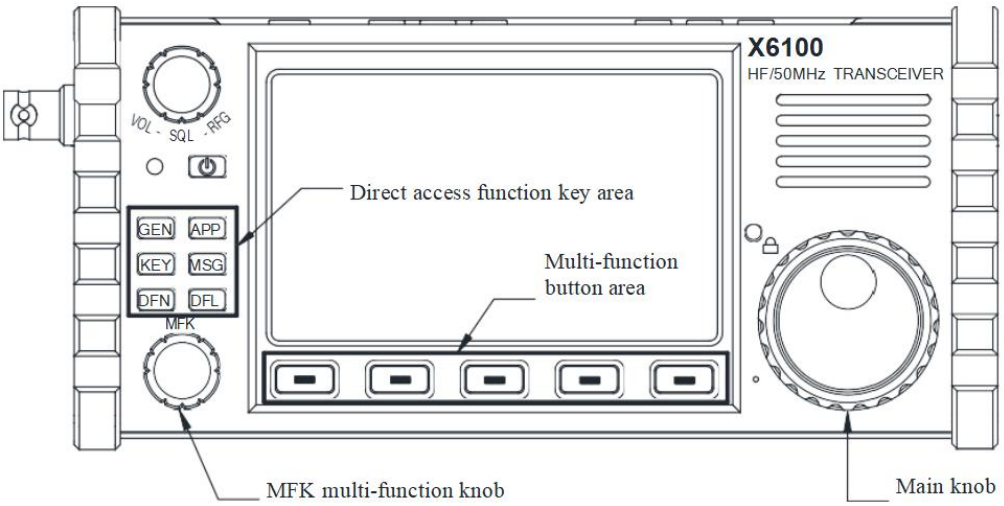
Lock main knob / screen backlight adjustment



Operation methods:

1. Long press the lock button to lock the operation of the main knob, and the symbol of "Lock" will be displayed at the upper right of the screen.
2. Short press this key in the unlocked state to adjust the brightness of the screen backlight step by step.

Multifunctional operation



Operation methods:

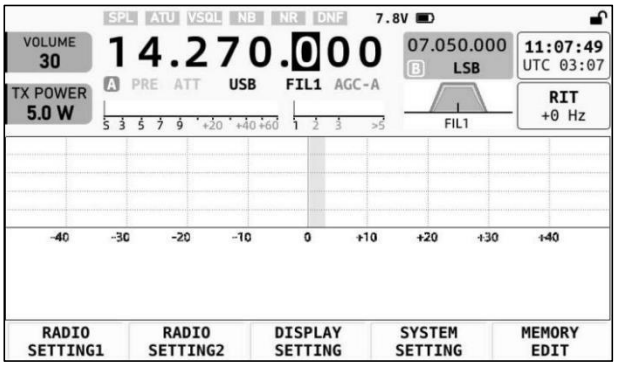
1. Function buttons in the left area of the panel can directly access the common function operation menu.

2. After selecting a direct button, the corresponding menu will appear at the bottom of the screen. Press the corresponding button below to operate the function.

3. After selecting a function, rotate the large knob or MFK multi-function knob to adjust the corresponding parameter value. The adjustment parameters are displayed in the numeric part of the Function menu tab.

GEN function operation

After short pressing the [GEN] key, the Default menu will appear at the bottom of the screen, as shown in the following figure:

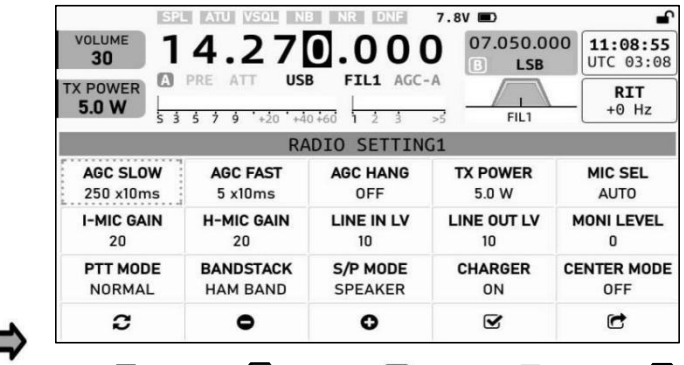


Menu line

Short press the key corresponding to [RADIO SETTING 1] to enter the "General setting 1" submenu, as shown in the following figure:

Operation methods:

1. Rotate the MFK knob to select the item that needs adjustment. As shown in the right figure, the "AGC SLOW" option is selected.
2. Rotate the main knob to adjust the value of the current item.



Operation icon

Restore defaults

Manual decrease

Manual increase

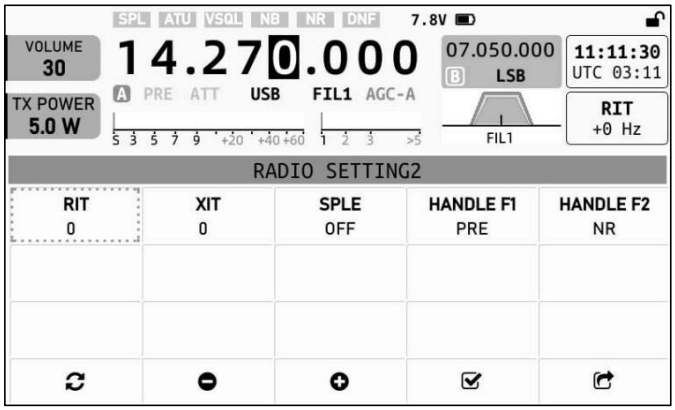
Set as shortcut tag

Exit Menu

Menu functions are defined as follows:

AGC SLOW	AGC FAST	AGC HANG	TX POWER	MIC SEL
AGC-S Time Constant	AGC-F Time Constant	AGC Hold	Transmit Power	Microphone Selection (Flat Microphone/Handheld Microphone)
I-MIC GAIN	H-MIC GAIN	LINE IN LV	LINE OUT LV	MONI LEVEL
Built-in microphone gain	Hand microphone gain	Line input level	Line output level	Monitor level
PTT MODE	BANDSTACK	S/P MODE	CHARGER	CENTER MODE
PTT Mode	Band Display Mode	Headphone Output Selection (Headphone/External Speaker)	Charging Switch	Cursor Mode Switch

Short press the key corresponding to [RADIO SETTING 2] to enter the "General setting 2" submenu, as shown in the following figure:

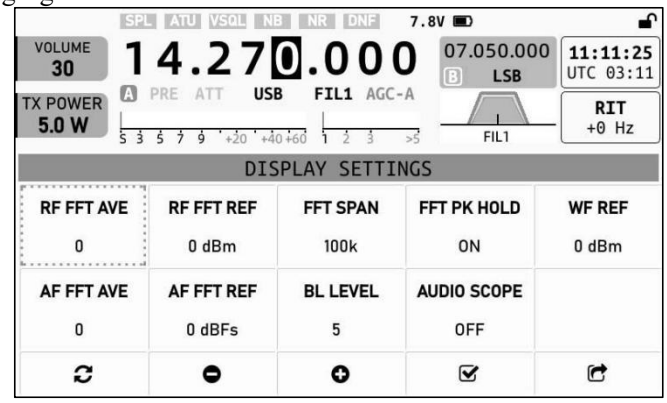


Menu functions are defined as follows:

RIT	XIT	SPLE	HANDLE F1	HANDLE F2
Reception frequency tuning	Transmission frequency tuning	Split frequency operation switch	Mic F1 button Settings	Mic F2 button Settings

DISPLAY SETTING Menu

Short press the key corresponding to [DISPLAY SETTING] to enter the "Display setting" submenu, as shown in the following figure:

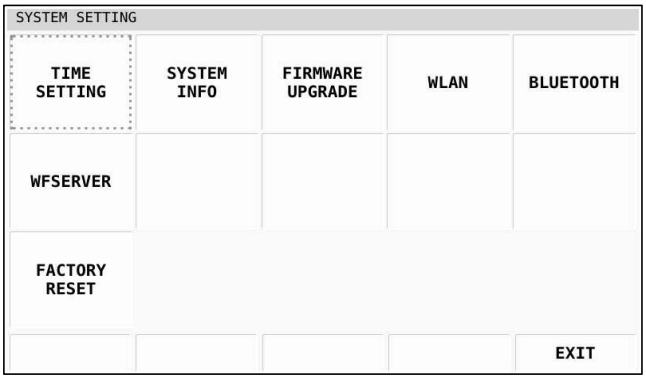


Menu functions are defined as follows:

RF FFT AVE	RF FFT REF	FFT SPAN	FFT PK HOLD	WF REF
RF spectrum display (average)	RF spectrum display (reference level)	Spectrum display (bandwidth)	Spectrum display (peak hold)	Waterfall graph (reference offset level)
AF FFT AVE	AF FFT REF	BL LEVEL	AUDIO SCOPE	---
Average audio spectrum display	Audio spectrum display reference level	Backlight brightness	Audio waveform	---

System Setting Menu

Short press the key corresponding to [SYSTEM SETTING] to enter the "System setting" submenu, as shown in the following figure:



Menu functions are defined as follows:

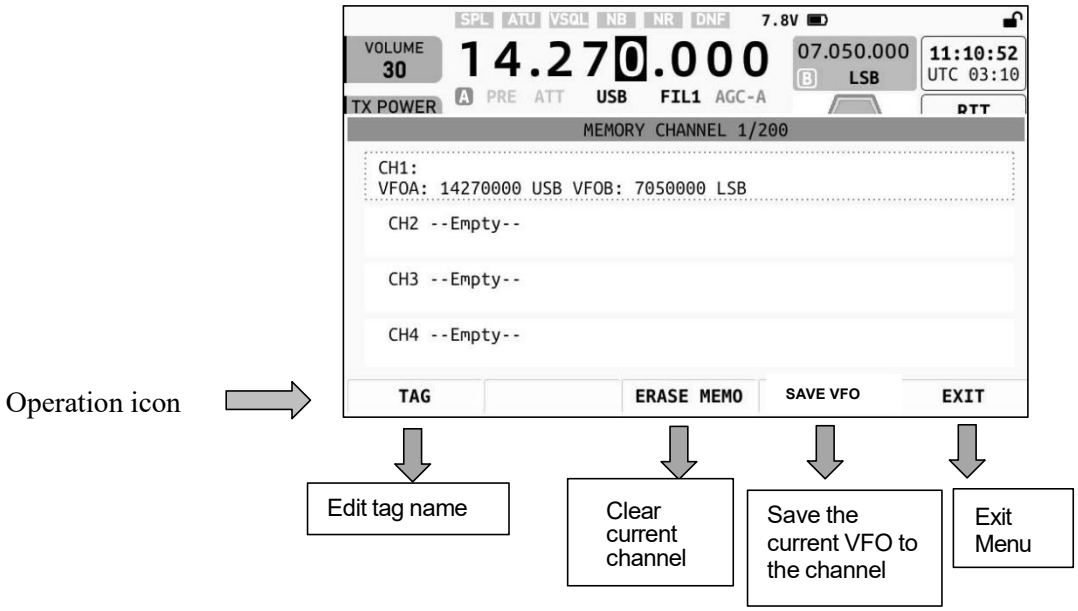
TIME SETTING	SYSTEM INFO	FIRMWARE UPGRADE	WLAN	BLUETOOTH
Time Settings	System Information	Baseband Firmware Update	Wi-Fi Settings	Bluetooth Settings

WFSERVER	---	---	---	---
Remote control	---	---	---	---

FACTORY RESET	---	---	---	---
Reset	---	---	---	---

Memory Setting Menu

Short press the key corresponding to [MEMORY SETTING] to enter the "Memory setting" submenu, as shown in the following figure:



Example of Memory Channel Operation:

Current frequencies: VFOA: 14.270000/USB, VF0B: 7.050000/LSB

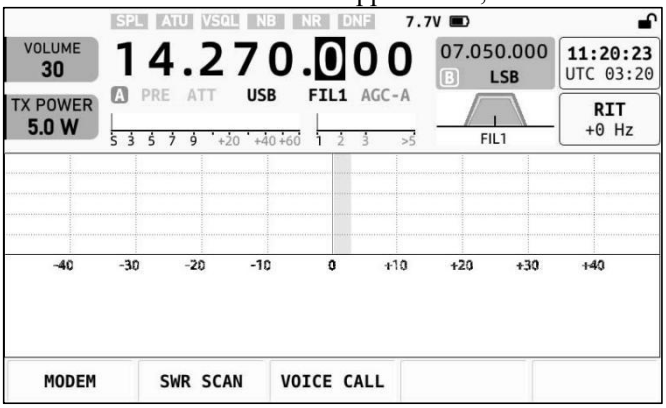
1. Briefly press [SAVE VFO] to save the current frequency, mode, and other status information to a blank channel.
2. Briefly press [TAG] to name the current channel.

Example of Clearing Channel Operation:

1. Turn the main knob to select the channel tag you want to clear.
2. Short press [ERASE MEMO] to clear the channel information of the memory.

APP function operation

Short press [APP] key to enter the sub-menu of the "Application", as shown in the figure below:

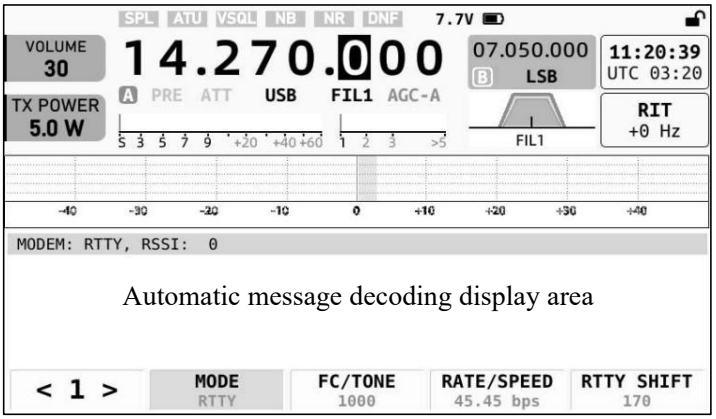


Menu functions are defined as follows:

MODEM	SWR SCAN	VOICE CALL	---	---
Enter the modem interface	Enter the standing-wave scanner interface	Recording call	---	---

Modem Menu

Short press the corresponding key of [MODEM] to enter the sub-menu of the "Modem", as shown in the figure below:



Sub-menu <1> Definitions are as follows:

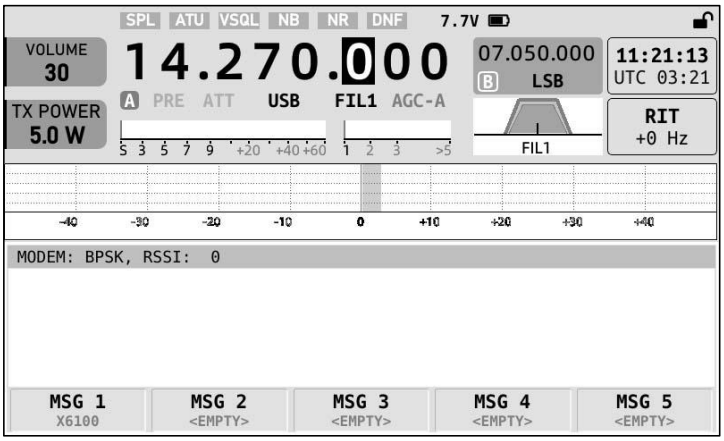
<1>	MODE	FC/TONE	RATE/SPEED	RTTY SHIFT
	Select RTTY/CW/BPSK mode	Carrier / Side tone frequency	Baud rate / code rate	Offset

Sub-menu <2> Definitions are as follows:

<2>	AFC	SQL	CLEAR	EXIT
	Carrier tracking	Modem muting	Clear text	Exit

Automatic Sending of Preset Information under MODEM

In the MODEM interface, short press the [MSG] key on the left side of the panel to enter the automatic message sending interface, as shown in the figure below:



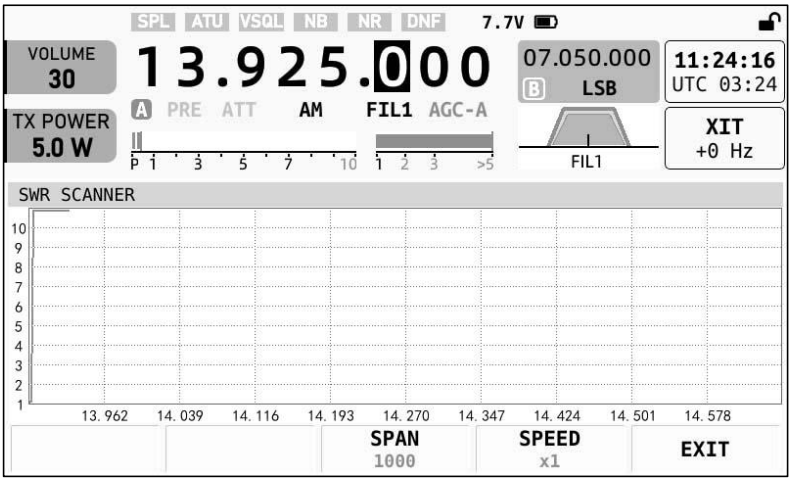
Operation methods:

1. When a tag has pre-stored information, there is information preview under the tag. The above figure shows that: MSG 1 tag already has pre-stored information; the tag has information preview, which is convenient for users to quickly find the required call tag.
2. Press the corresponding tag, X6100 will start sending the preset text information in the tag in the mode selected by MODEM(CW、BPSK、RTTY) until the sending of information is completed.

SWR SCAN Menu

The X6100 has the antenna standing-wave scanner, which can scan the standing-wave parameters of the current antenna to help users adjust the antenna.

Short press the corresponding key of [SWR SCAN] to enter the sub-menu of the "Standing-wave Scanner", as shown in the figure below:



Menu functions are defined as follows:

---	---	SPAN	SPEED	EXIT
———	———	Scanning bandwidth	Scanning speed	Exit

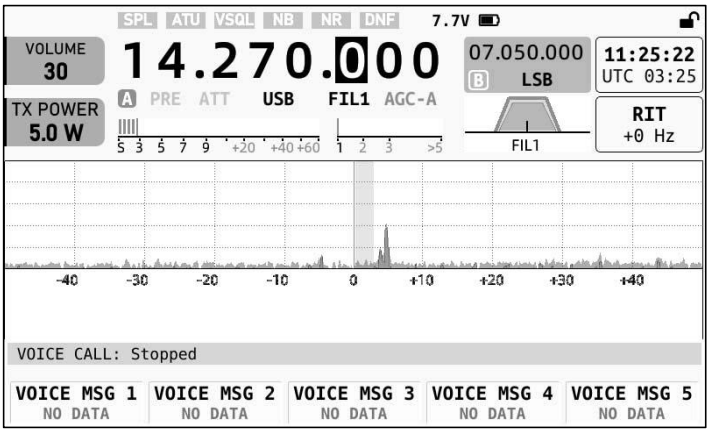
SPAN: short press this key to change the scanning bandwidth.
SPEED: short press this key to change the scanning speed.
QUIT: exit the standing-wave scanner interface.

- The scanning results of the standing wave scanner may have certain errors and are only for temporary reference. If you need to accurately measure data such as antenna standing waves, please use professional antenna analysis equipment for measurement.

Automatic Call by Calling Preset Recording under Voice Mode

X6100 has a built-in recording caller, which can record and store the call voice in the machine in advance, and the stored voice can be used for call transmission.

Key sequence:
[APP] - [VOICE CALL], enter the recording call interface, as shown in the figure below:



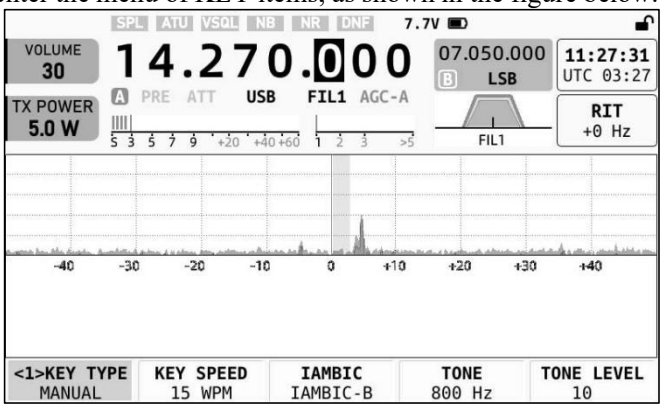
Operation methods:
1. When a tag has pre-stored information, there is a prompt under the tag to facilitate users to quickly find the required call tag.

2. Press the corresponding tag, X6100 will start sending the preset recording information in the tag until the sending of information is completed.

*For the recording method of voice messages, see the relevant operation chapter of "MSG" key in later part.

KEY function operation

Short press [KEY] to enter the menu of KEY items, as shown in the figure below:

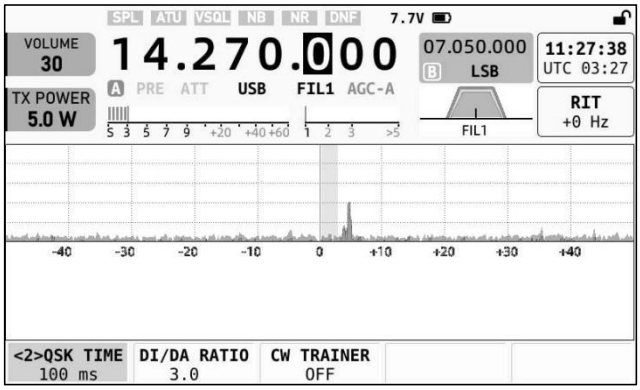


Menu <1> Definitions of functions are as follows:

KEY TYPE	KEY SPEED	IAMBIC	TONE	TONE LEVEL
Manual / automatic mode selection	Automatic key rate	Iambic mode	Side tone frequency	Side tone volume

Press the [KEY] key again to enter the menu on the second page of KEY items:

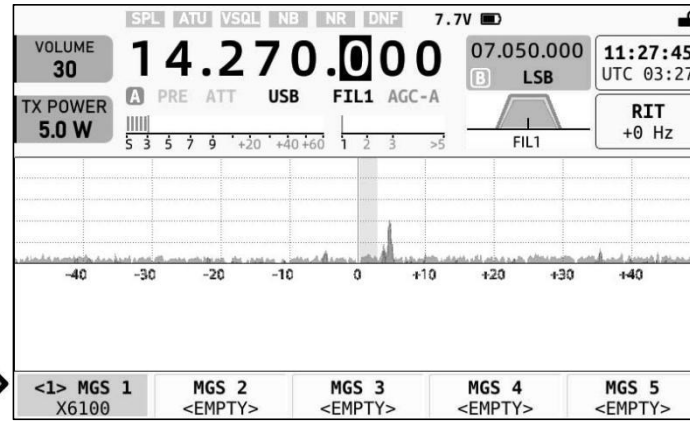
Menu <2> Definitions of functions are as follows:



QSK TIME	DI/DA RATIO	CW TRAINER	---	---
QSK Time	Dot-and-dash ratio	Training mode switch	---	---

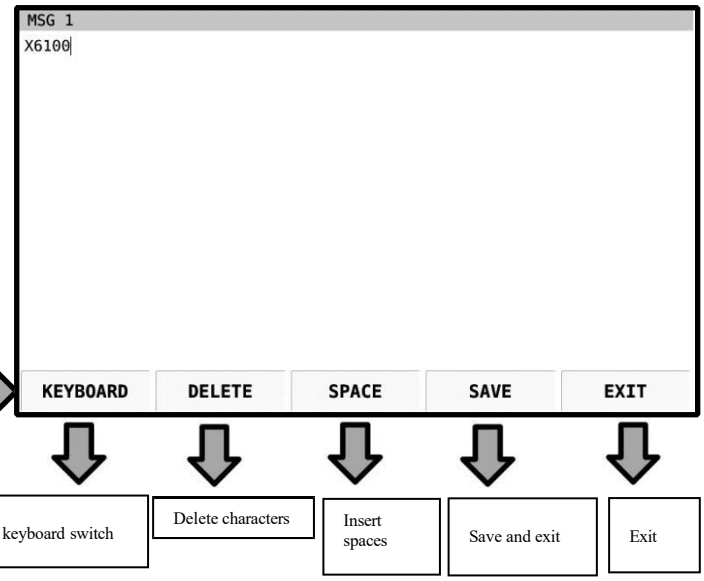
MSG Function Setting Operation

Short press [MSG] to enter the text preset menu on the first page of MSG, as shown below:



Preset message list

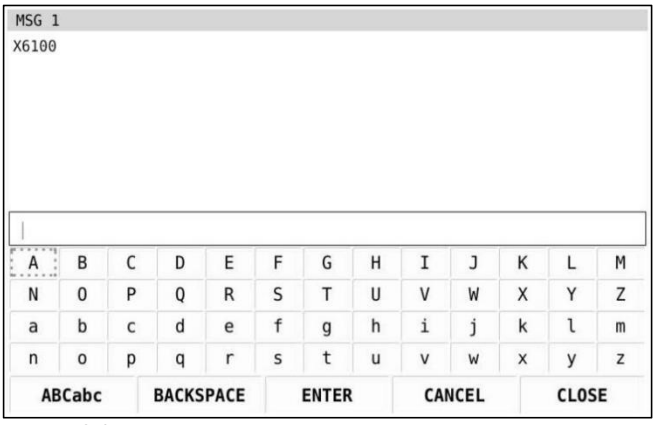
The X6100 can store 5 preset message messages. These messages can be used for automatic CW transmission, as well as RTTY and BPSK automatic transmission. Clicking any MGS tab will take you to the editing interface, as shown in the image below:



Icon function

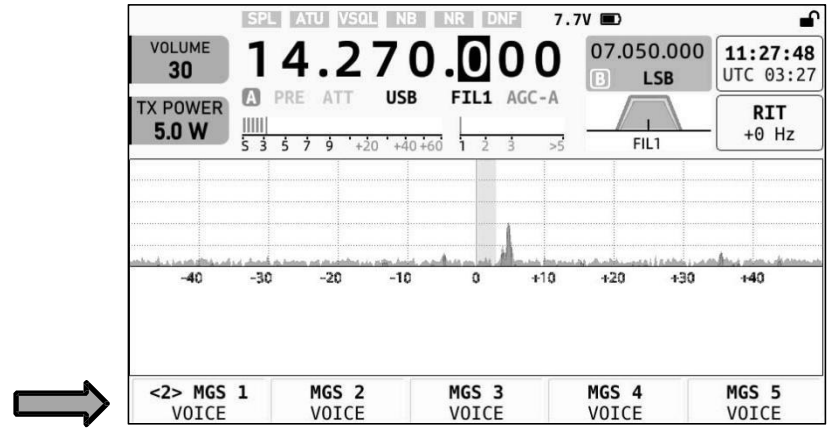
Open the virtual keyboard as shown below:

1. Rotate the MFK knob to select the character you want to input.
2. Rotate to the desired character position, press the MFK knob to input, and use the ABCabc keys to switch keyboards.
3. Use BACKSPACE to undo a character, ENTER to start a newline, and press CLOSE to exit the virtual keyboard after inputting.



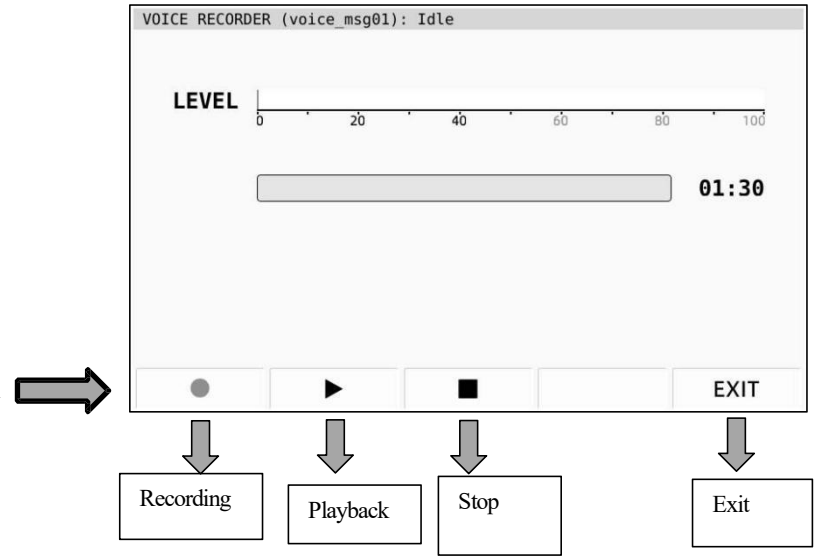
Press [MSG] again to enter the voice recording menu page on the second page of MSG options:

Preset recording list



X6100 can pre-store 5 voice messages. These messages can be used for automatic transmission of voice mode. Click any MGS label to enter the editing interface, as shown below:

Icon function

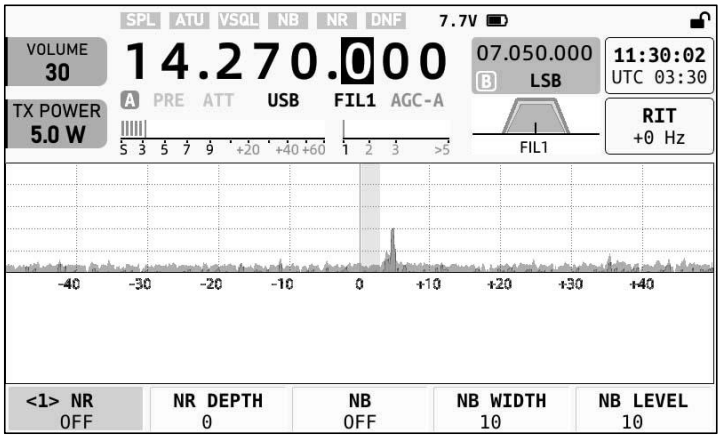


Recording operation method:
1. Pick up the hand microphone and keep it about 5~10cm away from the lips.
2. Press the "Record" key and start speaking at a normal volume until the speech is finished.
3. Press the "Stop" key to stop recording.
4. Press the "Play" key to listen to the voice just recorded.
5. Press the "EXIT" key to exit the current page.

Note:
1. The maximum duration of each recording is 1 minute and 30 seconds.
2. When recording, please turn off the monitoring function to avoid the echo.

DFN function setting and operation

Short press [DFN] to enter the DFN option menu, as shown below:

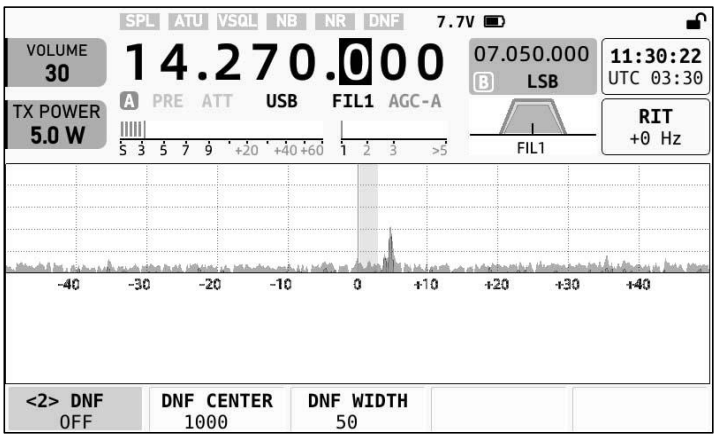


Menu <1> Definitions of functions are as follows:

NR	NR DEPTH	NB	NB WIDTH	NB LEVEL
Noise reduction switch	Noise reduction depth	Pulse blanking switch	Pulse width	Pulse depth

Press [DFN] again to enter the menu on the second page of DFN options:

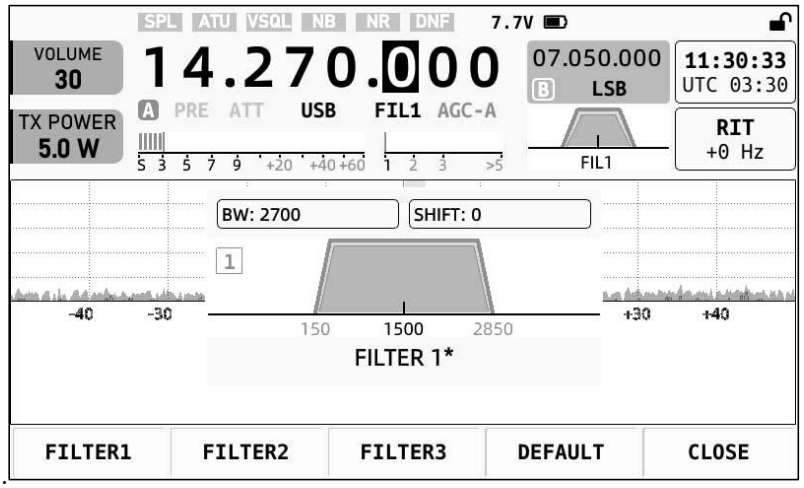
Menu <2> Definitions of functions are as follows:



DNF	DNF CENTER	DNF WIDTH	---	---
Digital trap switch	Trap center frequency point	Trap bandwidth	———	———

DFL function setting and operation

Short press [DFL] to enter the DFL option menu, as shown below:



Operation methods:

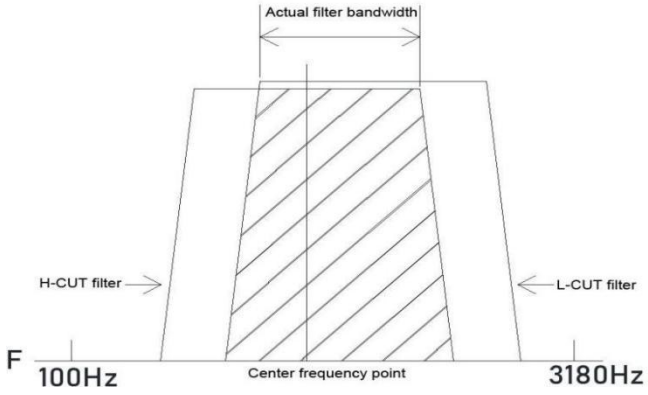
1. Select any filter from FILTER1~3 to enter.
2. Short press the MFK knob to switch and select different edge-cut filters. The blue trapezoidal box is the high-cut filter (H-CUT), and the red trapezoidal box is the low-cut filter (L-CUT).
3. Rotate the MFK knob to adjust the parameters of the filter according to the actual use. After adjustment, the current filter parameters will be automatically stored in the corresponding filter label.
4. Short press [DEFAULT] to restore the filter parameters selected currently to the default parameters.
5. Short press [CLOSE] to exit the current interface.

6. The parameters of each filter bank differ with modes, and will be automatically selected in line with the current mode.

7. As shown in the figure above, the start frequency and cut-off frequency of the filter can be adjusted respectively to set the filter. The overlapping region of the two schematic trapezoidal filter graphs is the actual action range of the filter.The details are as follows:

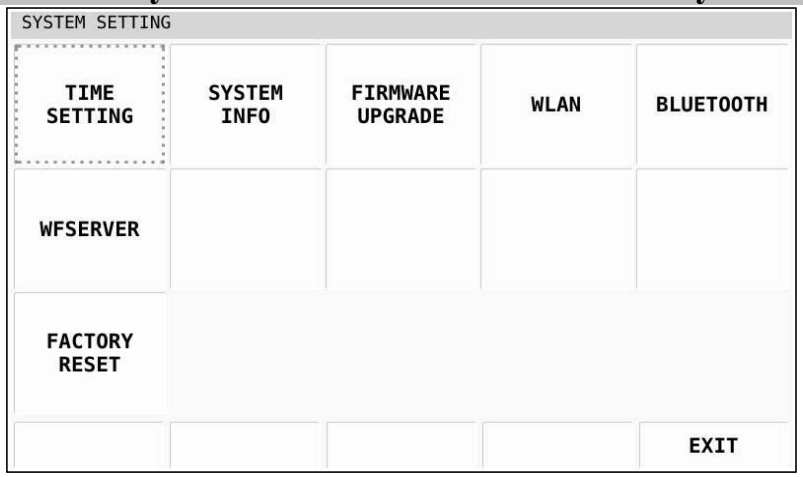
Filter composition diagram:

As shown in the figure on the right, the filter is acted by L-CUT and H-CUT together to form an effective filter bandwidth.
L-CUT controls the low boundary frequency and can effectively cut off the low frequency component;
H-CUT controls the high boundary frequency and can effectively cut off the high frequency component;
In daily use, it can be adjusted according to own habits to achieve the best listening effect.



*Note: If the filter's actual bandwidth is less than the bandwidth of the useful signal, the useful signal will be completely cut off, resulting in no audible signal.

Set the time / Review the system information / Restore factory settings



Button sequence:

[GEN]---the multi-function button [SYSTEM SETTING] at the bottom of the screen, Enter the system setting interface [TIME SETTING].

Time Setting Method:

1. Enter the corresponding option menu, rotate the MFK knob to select the year, month, day, hour, minute, and time zone setting; press the MFK knob to select the current time, rotate the large knob to adjust the number, and finally press the MFK knob again to exit the current option.
2. After adjustment, rotate the MFK knob to select the "OK" button, and press the MFK knob to confirm.

To view system information:

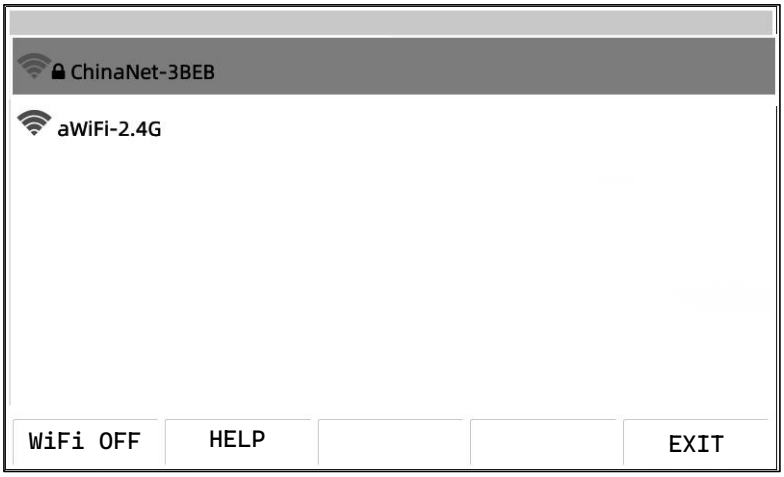
Rotate the MFK knob, select the corresponding [SYSTEM INFO] menu item, and press the MFK knob to enter the item to view the firmware version information.

Restore factory settings:

Note:Performing a factory reset will erase all your personalized settings.

1. Turn the MFK knob to select [FACTORY RESET], and press the MFK knob.
2. Read the prompt information in the screen and press the "OK" button twice to confirm the reset.
3. After waiting for the reset to be completed, X6100 will be automatically shut down. Then turn it on manually again to complete the reset.

Set wireless network parameters



Key Sequence:
[GEN] - Enter the system setting interface via the multi-function key [SYSTEM SETTING] at the bottom of the screen and select the option WIFI.

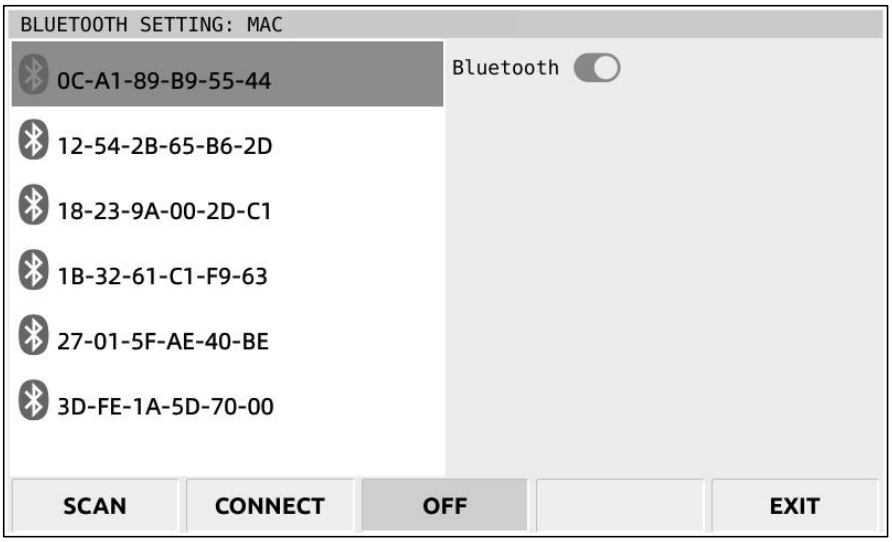
Button Instructions:
WiFi ON/OFF: Turns on WiFi and automatically scans for nearby hotspots; WiFi OFF: Turns off WiFi.
HELP: Click to view operation instructions
EXIT: Exit

Operating Instructions:
1. Click WiFi ON.
2. Rotate the MFK knob to select the wireless network you want to connect to, and press the MFK knob to enter the WiFi details page.
3. Rotate the MFK knob to select the information box, and press the knob to enter the necessary information.
4. After entering the correct configuration information, click CONNECT to connect to the network.

*Attention:

1. Do not rotate the MFK knob while entering information, otherwise, any unentered information may be lost.
2. Some wireless routers that support advanced protocols and new frequency bands may experience connection failures.

Bluetooth function settings



Key Sequence:
[GEN] - enter the system setting interface via the multi-function key [SYSTEM SETTING] at the bottom of the screen and select the option Bluetooth.

Operating Instructions:
OFF/ON: Turn the Bluetooth adapter on/off
SCAN: Scan for connectable Bluetooth devices
CONNECT/DISCONNECT: Connect/disconnect the selected Bluetooth device from the left-hand list
EXIT: Exit

Attention: When the Bluetooth adapter is on, it will continuously scan for surrounding Bluetooth devices.

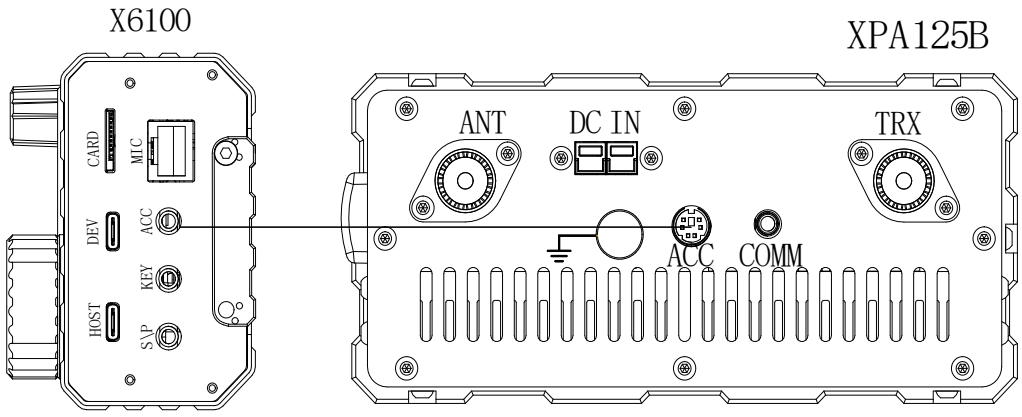
Forced Shutdown

If startup fails, the system freezes, or other reasons prevent normal power-on or shutdown, you can force shutdown the system as follows:

- Press and hold the power button for more than 12 seconds until the indicator light, screen goes out, or sound is muted.

Appendix 1

Connection between X6100 and XPA125B (L4001 cable)



After the X6100 connects with XPA125B power amplifier and antenna tuner through the L4001 cables, the output power can be expanded to 100W.

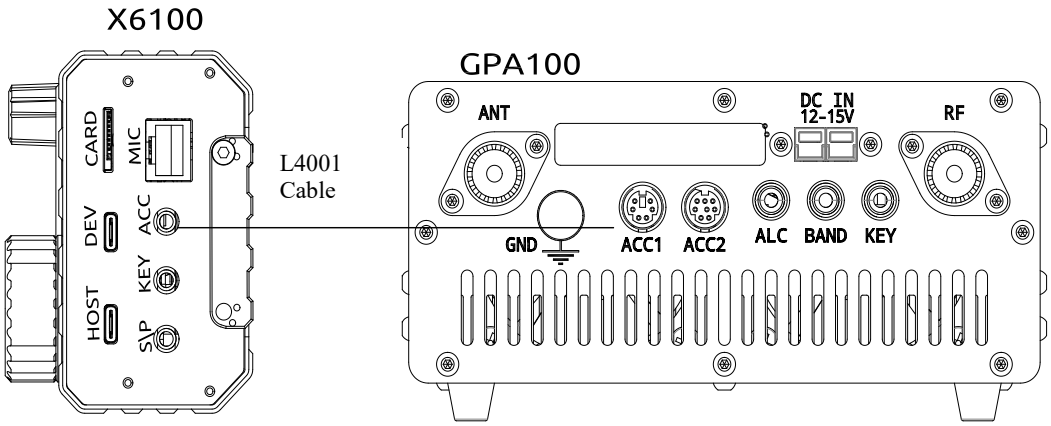
After connection, the X6100 can automatically control the wave band switching of XPA125B. Moreover, the ALC control will be built between two machines. When the X6100 output power exceeds the power limit of the XPA125B, the ALC control will automatically decrease the output power of the radio so that the output power of the XPA125B will be kept to be about 100W.

We suggest to set the output power of the X6100 to be 2～3W to protect the amplifier equipment.

■ XPA125B power amplifier and L4001 cable need to be separately ordered.

Appendix 2

Connection between X6100 and GPA100 (using L4001 cable)



After connecting the X6100 to the ACC1 interface of the GPA100 amplifier via the L4001 cable, the output power can be extended to 100W.

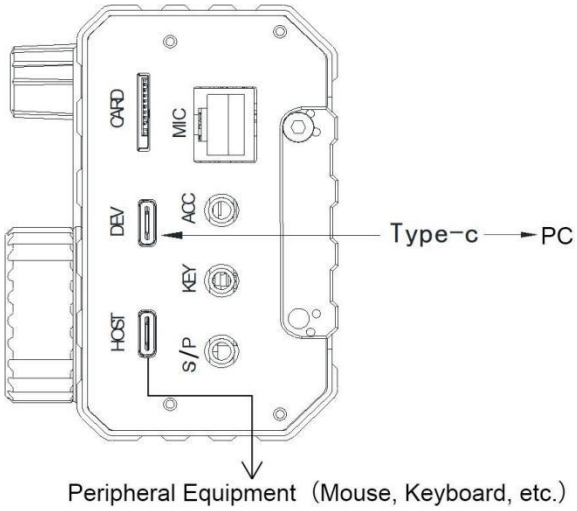
After connection, the X6100 can automatically control the band switching of the GPA100. Simultaneously, an ALC control is established between the two units, automatically reducing the radio's output power to maintain a constant output power from the GPA100 if the X6100's output power to the GPA100 exceeds its limit.

We recommend setting the X6100's output power between 2 and 5W.

■ The GPA100 amplifier and L4001 cable must be ordered separately.

Appendix 3

Connection between X6100 and PC (Type-c)



1. As shown in the diagram above, connect the Type-C cable to the DEV port on the right side of the X6100.
2. The CH342 port driver needs to be installed, or a driver installation tool can be used online.
3. In the data communication software (or control software), select the model "XIEGU X6100" to complete the connection.
4. For audio input/output, please select the virtual sound card provided by the host. Note that input and output must be different audio devices.

Note: If choose other rig that be compatible with CIV instructions, there may be incompatibility.

Connect with N1MM to automatically transmit CW

The connection method is the same as above, and the port is also connected to the DEV port on the right side of the X6100. After configuring the settings of the N1MM terminal, the PC can be used to control the X6100 to send CW telegrams.

External mouse、keyboard equipment

Connect the mouse、keyboard or other external input devices to the HOST interface on the right side of the X6100, and then you can operate the X6100 by the external mouse or keyboard.

Parameter & specification

Frequency range: receiving: 0.5MHz~30MHz 50.00~54MHz

Transmitting: 1.8~2.0MHz 3.5~3.9MHz

7.0~7.2MHz 10.1~10.15MHz

14.0~14.35MHz 18.068~18.168MHz

21.0~21.45MHz 24.89~24.99MHz

28.0~29.7MHz 50.00~54.00MHz

Working mode: CW, AM, SSB, FM

Minimum stepping: 1Hz

Antenna impedance: 50Ω

Working temperature range: 0°C~+55°C

Frequency stability: ±1.5ppm within 10~30min after startup

@25°C: 1ppm/hour

Supply voltage: 9.0~15.0VDC, negative electrode grounding

Current consumption: receiving: 450mA@Max

transmitting: 3A@Max

Dimensions: 180*86*49mm (L*W*H) (not including protrusions)

Weight: about 880g (host only)

Transmitter parameters

RF output power: 10W (SSB/CW/FM) ±1dB @13.8VDC

2.5W (AM carrier wave) @13.8VDC

5W (SSB/CW/FM) ±1dB @ battery

1.5W (AM carrier wave) @ battery

Spurious suppression: 1.8~29.6MHz: ≥50dB

50~54MHz:≥60dB

Carrier suppression: ≥50dB

Microphone impedance: 200~10k (600Ω in general)

Receiver parameters

Circuit type: ZIF

Sideband suppression: ≥50dB

MDS:-138dB

Sensitivity:

Frequency band mode	SSB/CW	FM	AM
0.5~1.79999MHz	/	/	10uV
1.8~1.99999MHz	0.35uV	/	10uV
2.0~27.9999MHz	0.20uV	/	2uV
28.0~30.0MHz	0.20uV	0.22uV	2uV
50.0~54.0MHz	0.20uV	0.22uV	2uV

(PRE=on, ATT=off, NB=off, NR=off, AGC=on)

Audio output: 0.4W(8Ω, ≤10%THD)

Audio output impedance: 4~16 Ω

Antenna tuner

Tuning range of antenna tuner VSWR: 1:4.5

First tuning time: ≤15s

Memory load tuning: ≤0.2s

○ Above specifications are typical values and subject to change without prior notice.

○ Working frequency range of transceiver varies from version of the equipment. Ask local dealer for details.

Packing List

Item Name	Quantity
X6100 host	1 pc.
Type-C cable	1 pc.
Multifunction hand microphone	1 pc.
Charger adapter	1 pc.
Power cable	1 pc.
Warranty card	1 pc.
Manual	1 pc.
Quality certificate	1 pc.（printed on the labels）

Elektro- und Elektronikgeräte

Informationen für private Haushalte

Das Elektro- und Elektronikgerätegesetz (ElektroG) enthält eine Vielzahl von Anforderungen an den Umgang mit Elektro- und Elektronikgeräten. Die wichtigsten sind hier zusammengestellt.

1. Getrennte Erfassung von Altgeräten

Elektro- und Elektronikgeräte, die zu Abfall geworden sind, werden als Altgeräte bezeichnet. Besitzer von Altgeräten haben diese einer vom unsortierten Siedlungsabfall getrennten Erfassung zuzuführen. Altgeräte gehören insbesondere nicht in den Hausmüll, sondern in spezielle Sammel- und Rückgabesysteme.

2. Batterien und Akkus sowie Lampen

Besitzer von Altgeräten haben Altbatterien und Altakkumulatoren, die nicht vom Altgerät umschlossen sind, sowie Lampen, die zerstörungsfrei aus dem Altgerät entnommen werden können, im Regelfall vor der Abgabe an einer Erfassungsstelle vom Altgerät zu trennen. Dies gilt nicht, soweit Altgeräte einer Vorbereitung zur Wiederverwendung unter Beteiligung eines öffentlich-rechtlichen Entsorgungsträgers zugeführt werden.

3. Möglichkeiten der Rückgabe von Altgeräten

Besitzer von Altgeräten aus privaten Haushalten können diese bei den Sammelstellen der öffentlich-rechtlichen Entsorgungsträger oder bei den von Herstellern oder Vertreibern im Sinne des ElektroG eingerichteten Rücknahmestellen unentgeltlich abgeben.

Rücknahmepflichtig sind Geschäfte mit einer Verkaufsfläche von mindestens 400 m² für Elektro- und Elektronikgeräte sowie diejenigen Lebensmittelgeschäfte mit einer Gesamtverkaufsfläche von mindestens 800 m², die mehrmals pro Jahr oder dauerhaft Elektro- und Elektronikgeräte anbieten und auf dem Markt bereitstellen. Dies gilt auch bei Vertrieb unter Verwendung von Fernkommunikationsmitteln, wenn die Lager- und Versandflächen für Elektro- und Elektronikgeräte mindestens 400 m² betragen oder die gesamten Lager- und Versandflächen mindestens 800 m² betragen. Vertreiber haben die Rücknahme grundsätzlich durch geeignete Rückgabemöglichkeiten in zumutbarer Entfernung zum jeweiligen Endnutzer zu gewährleisten.

Die Möglichkeit der unentgeltlichen Rückgabe eines Altgerätes besteht bei rücknahmepflichtigen Vertreibern unter anderem dann, wenn ein neues gleichartiges Gerät, das im Wesentlichen die gleichen Funktionen erfüllt, an einen Endnutzer abgegeben wird. Wenn ein neues Gerät an einen privaten Haushalt ausgeliefert wird, kann das gleichartige Altgerät auch dort zur unentgeltlichen Abholung übergeben werden; dies gilt bei einem Vertrieb unter Verwendung von Fernkommunikationsmitteln für Geräte der Kategorien 1, 2 oder 4 gemäß § 2 Abs. 1 ElektroG, nämlich „Wärmeüberträger", „Bildschirmgeräte" oder „Großgeräte" (letztere mit mindestens einer äußeren Abmessung über 50 Zentimeter). Zu einer entsprechenden Rückgabe-Absicht werden Endnutzer beim Abschluss eines Kaufvertrages befragt. Außerdem besteht die Möglichkeit der unentgeltlichen Rückgabe bei Sammelstellen der Vertreiber unabhängig vom Kauf eines neuen Gerätes für solche Altgeräte, die in keiner äußeren Abmessung größer als 25 Zentimeter sind, und zwar beschränkt auf drei Altgeräte pro Geräteart.

4. Datenschutz-Hinweis

Altgeräte enthalten häufig sensible personenbezogene Daten. Dies gilt insbesondere für Geräte der Informations- und Telekommunikationstechnik wie Computer und Smartphones. Bitte beachten Sie in Ihrem eigenen Interesse, dass für die Löschung der Daten auf den zu entsorgenden Altgeräten jeder Endnutzer selbst verantwortlich ist.

5. Bedeutung des Symbols „durchgestrichene Mülltonne"



Das auf Elektro- und Elektronikgeräten regelmäßig abgebildete Symbol einer durchgestrichenen Mülltonne weist darauf hin, dass das jeweilige Gerät am Ende seiner Lebensdauer getrennt vom unsortierten Siedlungsabfall zu erfassen ist.