XIEGU

HF TRANSCEIVER

X108G

Outdoor version Operating Manual

Important reminder:

Before operating the equipment, please read our operating manual carefully and keep the manual, so as not to lose.

Features:

- Low noise, single conversion HF transceiver. Double balanced diode mixer for extended dynamic range.
- 0.25μV receive sensitivity (preamp on).
- Narrow band double tuned band-pass filters covering all HF amateur frequencies including WARC bands.
- Built NC APC circuit.
- Circuit standard with high quality 0.5ppm TCXO clock source.
- 500 MHz narrow band CW filter configuration.

Security considerations:

Do not use equipment during a lightning storm.

Damp-proof!
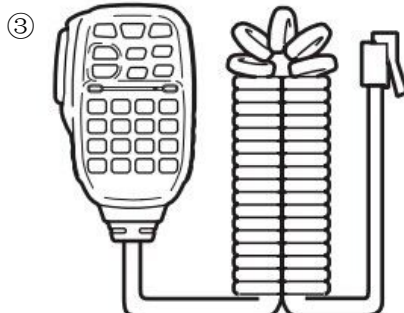

Don't illegal operations!

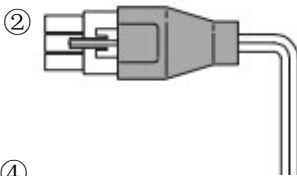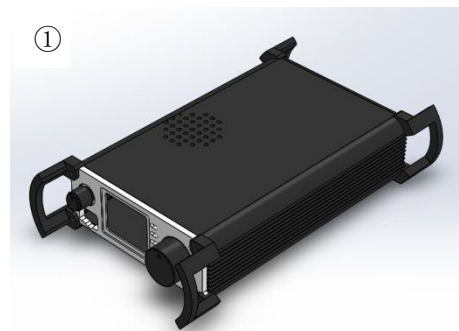Note RF high-voltage of antenna connector!

Packing list:

Qty
- ① X108G..... 1
- ② Power supply cable...........1
- ③ Hand microphone.............1
- ④ USB Cable..........1
- ⑤ Service card................1

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I．Specification:

Basic Specifications:

Frequency range:　Receive:0.5~30MHz（Continuous）

Transmitting:　All HF Amateur bands including WARC bands

Operating mode: SSB（J3E）

　　　　　　　CW （A1A）

　　　　　　　AM （A3E）

minimum frequency stepping:　10Hz

Antenna impedance: 50Ω

Operating temperature range: Maximum temperature is 55℃

Frequency stability: ±0.5ppm @ Open the power about 5 minute

Operating voltage:　　　　　　12~14.5V DC

Current draw: Receiving:　600mA @Max

Transmitting:　7.5A @ Max

Dimensions (mm): 120*45*180（mm）　[Does not include the Front and rear handles and the Knob etc bulge.]

Transmitter

Transmitter power：More than 15W （@13.8V）

Modulation mode:　SSB balanced modulation:

　　　　　　　　AM Low level modulation

Spurious response rejection: ≥40dBc

Carrier suppression：　　　≥45dBc

IF filter：　　　　SSB　2.4kHz(-6dB)

CW　　500Hz(-6dB)

Receiving

IF Frequency:　　　　　10.7MHz

receive sensitivity:　　0.5uV @ 12dB SINAD (PRE ON，≤2.0MHz）

　　　　　　　　　0.35uV @ 12dB SINAD (PRE ON，＞2.0MHz）

Receive Frequency bands:

1.8~2.0MHz

3.5~4.0MHz

5.0~5.5MHz

7.0~7.3MHz

10.0~10.2MHz

14.0~14.5MHz

18.0~18.2MHz

21.0~21.6MHz

24.8~25.0MHz
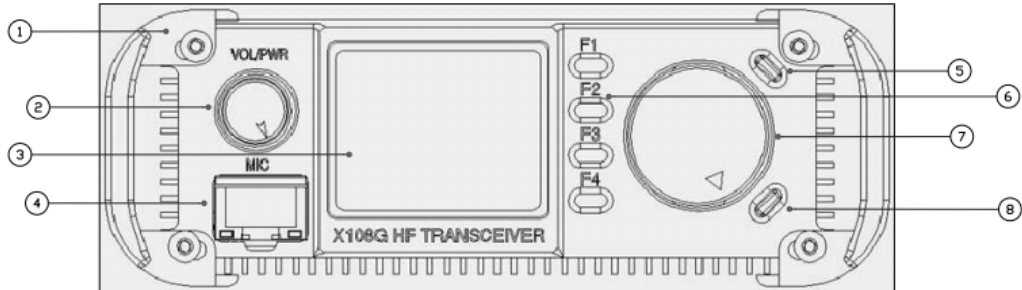
28.0~28.8MHz

0.5~30.0MHz　（＊）

Dynamic range:Better than 90db

RIT Frequency controlrange: ±1kHz

audio output:　　　　0.5W@8Ω

II. Description of equipment

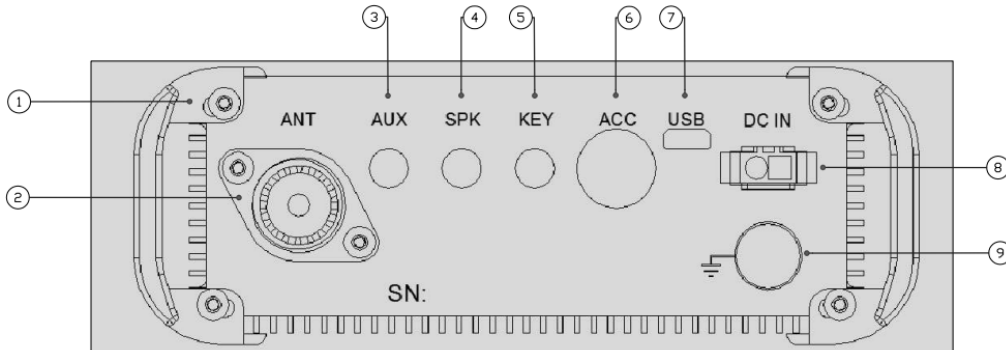## 2.1 Front panel Description

1. Metal handle
2. Power switch/Volume knob
3. Color OLED display screen
4. Microphone port
5. UP Key
6. Multi-function Key
7. Main function knob(frequency knob)
8. DOWN Key

2.2 Rear panel Description

1. Back metal handle
2. Antenna interface
3. AUX port
4. External speaker output
5. KEY port
6. ACC port
7. USB port
8. DC power input
9. Ground connection.

2.3 Microphone
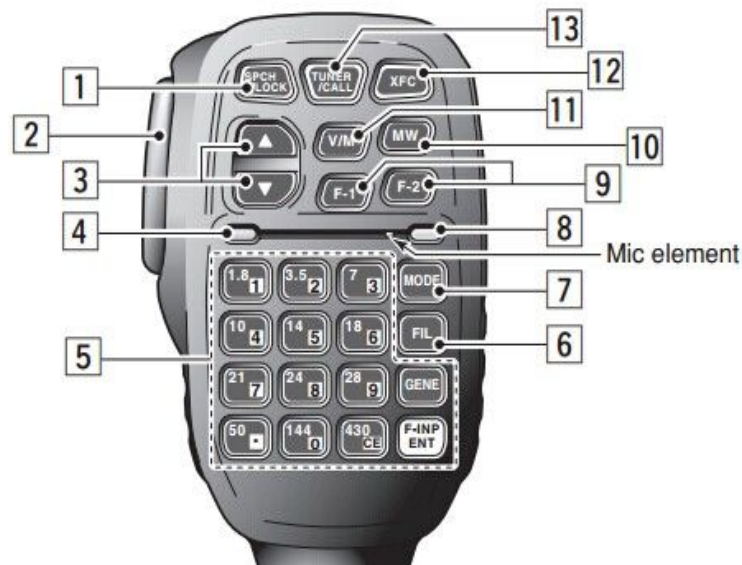
1. Lock button/Press it again unlock
2. PTT button: Launch control button
3. Up / Down: In the system settings menu, upper and lower entry selection
4. Receiving indicator
5. Multifunction
6. Filter selection buttons：Selection of built-in filter
7. Mode selection button：Selection of working mode of the host
8. No indication
9. F1/F2 Custom set key
10. Memory write button
11. Frequency/Channel switching button
12. VFO-A / VFO-B switching button
13. No function

2.4 Display information description
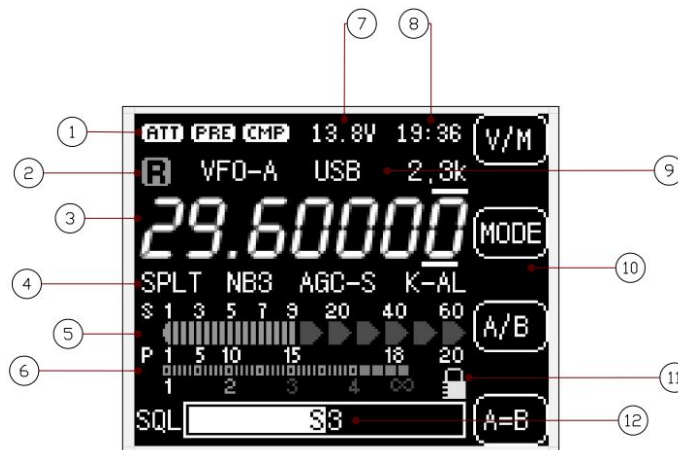
1. Pre-attenuator/Preamplifier/Voice compression
2. Receiving / transmitting status
3. Current operating frequency value
4. Current functional status: SPLIT, NB Suppressor, AGC, Key mode
5. Received signal strength indicator
6. Real time power/SWR indicators
7. The current input voltage display
8. Time display
9. Current working mode/Filter bandwidth
10. Multi function key
11. Lock indication
12. Parameter setting

III．Operating instructions

3.1 Screen displays instructions

【TS+】Increase frequency step
【TS-】Reduce frequency step
【ATT】Switch receive signal attenuator on or off
【PRE】Switch receive preamp on or off

【MODE】Select desired operating mode – CW/AM/LSB/USB.
【AGC】Select AGC level-FAST/SLOW/OFF
【NB】Select NB level between 1 and 4 and OFF
【A/B】Switch between VFO A & VFO B.

【A=B】 Set VFO A the same as VFO B.

【SPLT】 Select SPLIT operating mode on or off.

【RIT】 Select RIT mode-adjust via selector Main function knob, setting shown on RIT display in screen

【POW】 Set RF output power-adjust via selector Main function knob, level displayed via red in screen

【V/M】 Select VFO or Memory mode. Select channel/frequency using selector frequency knob

【M>V】In memory mode, move current frequency to VFO and switch to VFO mode

【MW】In VFO mode, store current frequency and settings in memory

【MC】In memory mode, clear selected memory channel

【FIL】Select filter

【KEY】 Select keyer - Manual/Auto L/Auto R

【KSPD】Select keying speed – adjust via selector Main function knob, speed displayed under KEY in screen

【TIME】Set internal Clock – adjust via selector Main function knob, select hour/minute with Up/Down buttons

【SQL】 Select to adjust Squelch level via selector Main function knob, level shown on line display in screen

【CMP】voice compression settings.

3.2 Start using your X108G

3.2.1 Set the current operating frequency

Method 1: Press the function button(TS+/TS-), move the frequency step to the required numerical digit of adjustments, then rotate the main function knob, Changing the current frequency

Method 2: On the microphone, press the function button **F-INP ENT** then input frequency directly, e.g. 14.27, then press the function button F-INPENT again, complete the setting.

3.2.2: Mode Switching

Method 1: Press the frequency knob to switch the current menu page, then press [MODE].Press corresponding multifunction button, to complete mode switching.

Method 2: On the multifunction digital microphone in hand, press **MODE** to complete the mode switching.

3.2.3: Filter Switching

Method 1: Press the frequency knob to switch the current menu page, then press [FIL]. Press corresponding multifunction button to complete filter switching.

Method 2: On the multifunction digital microphone in hand, press **FIL** to complete filter switching.

3.2.4: Preamplifier on/off

Press the frequency knob to switch the current menu page, then press [**PRE**].
When the preamplifier is on, PRE will be highlighted. Press this button again to close the preamplifier. When the preamplifier is off, PRE will appear dark.

7

3.2.5: Attenuator on/off

Press the frequency knob to switch the current menu page, then press [**ATT**].
When the attenuator is on, ATT will be highlighted. Press this button again to close the attenuator.
When the attenuator is off, ATT will appear dark. The attenuator provides 10 dB attenuation.

3.2.6: Automatic Gain Control on/off

Press the frequency knob to switch the current menu page, then press [**AGC**].

AGC options are Fast or Slow with the screen showing the current status. Press [**AGC**] again to exit.

3.2.7: Noise Blanker on/off (if equipped)

Press the frequency knob to switch the current menu page, then press [**NB**]. The Noise Blanker offers depth of NB1 thru NB4, with the screen showing the current status.

3.2.8: Switching between VFO-A / VFO-B

Press the frequency knob to switch the current menu page, then press [**A/B**]. You can toggle between VFO-A and VFO-B.

3.2.9: Set both VFO's to the same settings

Press the frequency knob to switch the current menu page, then press [**A=B**]. The settings of the current VFO will transfer to the second VFO.

3.2.10: Split frequency operations

Press the frequency knob to switch the current menu page, then press [**SPLIT**].
The radio will receive on VFO-A and when you press PTT, transmit on VFO-B.

3.2.11: RIT tuning

Press the frequency knob to switch the current menu page, then press [**RIT**].
Turning the frequency knob will change the receive frequency but leave the
transmit frequency unchanged. Pressing [**RIT**] again will exit this mode.

3.2.12: Transmit power setting

Press the frequency knob, switch the current menu page, then press [**POW**], power settings on the screen will display the "Po", press the button [**UP/DOWN**], you can change the transmit power value and save it.

3.2.13: Switching between Frequency Mode / Channel Mode

Press the frequency knob to switch the current menu page, then press [**V/M**].
Press this function key to move between frequency mode and channel mode.

3.2.14: Move current channel to VFO

Press the frequency knob to switch the current menu page, then press [**M>V**].
The radio will switch to VFO mode, showing information from the current channel.

3.2.15: Save current settings to Memory

Press the frequency knob to switch the current menu page, then press [**V/M**] to choose channel mode. Turn the frequency knob until "BLANK" is highlighted. Press [**MW**] to return to frequency mode. In the lower left corner of the screen will be the symbol "CH***", flashing..Adjust frequency, operating mode and other parameters desired, then press [**MW**] to write this information to memory.

3.2.16: Delete the current channel

Press the frequency knob to switch the current menu page, then press [**MC**] to clear the information stored in the current channel.

3.2.17: Manual / automatic telegraph key

Press the frequency knob to switch the current menu page, then press [**KEY**].
Choose Manual Key, Automatic Left Hand telegraph key or Automatic Right Hand telegraph key.

3.2.18: Automatic telegraph key rate

Press the frequency knob to switch the current menu page, then press [**KSPD**], via the [**UP/DOWN**] knob to set the automatic key rate.

3.2.19: Set the local time

Press the frequency knob to switch the current menu page, then press [**TIME**].
Then press the corresponding number keys on the microphone to set the local time.

3.2.20: Setting squelch level

Press the frequency knob to switch the current menu page, then press [**SQL**], press the [**UP/DOWN**] knob to set the squelch depth and save the squelch setting.

3.2.21: Set voice (speech) compression ratio

Press the frequency knob to switch the current menu page, then press [**CMP**]. Adjust the compression ratio as desired.

3.2.22: HRD Software

When you connect your computer via HRD, you can select IC7000 model.

3.3 Extended Interface

【AUX】 No function

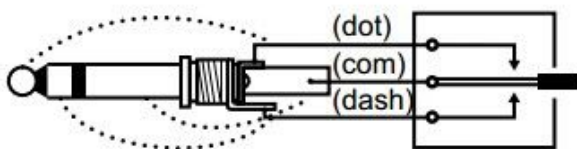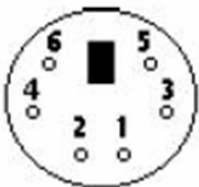**【SPK】 External speaker output**

Speaker or Headphone(3.5 stereo Socket); Otherwise it will damage the rig. Before using the headphone, please decrease the volume.

【KEYER】 Telegraph Key

The telegraph key is automatic and manual integration. You can switch in the corresponding menu.

【ACC】 ACC port

Pin Definitions

1： 9V Power Output

2： PTT Signal Output

3： Wave Bands voltage output

4： ALC voltage output

5： External Audio input

6： Ground

Bandvoltage parameter

BAND	LEVEL	BAND	LEVEL	BAND	LEVEL
1.8MHz	0.33V	10MHz	1.33V	21MHz	2.33V
3.5MHz	0.67V	14MHz	1.67V	24MHz	2.67V
7MHz	1.00V	18MHz	2.00V	28MHz	3.00V

【USB】USB port

PC control or firmware update

【DC IN】 Power port

Power socket polarity, as shown:
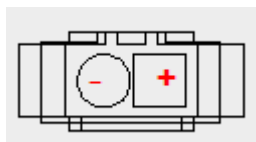
Note：Power input range: 12~14.5V DC

Do not exceed the input voltage range and Reverse polarity.

【Ground hole】

 【Ground screw】

3.4.Advanced Menu Settings

CAUTION: THESE SETTINGS ARE DIRECTLY RELATED TO THE CORRECTOPERATION OF THIS RADIO.
PLEASE EXERCISE CAUTION. PLEASE RECORD AND SAVE ALL ORIGINAL FACTORY SETTINGS BEFORE MAKING ANY ADJUSTMENTS.

3.4.1

In the shutdown state, press and hold the F1 key on the host and turn on (note, do not release) until the screen displays the data of the engineering menu, as shown below:

1. IF SSB: SSB IF

2. IF CW: CW IF

3. BFO LSB: BFO value LSB mode

4. BFO USB: BFO value USB mode

5. BFO CW: BFO value of the CW mode

6. CW Tone: CW side tone pitch frequency
adjustment

7. CW TDly: CW launch delay

8. TOT:

9. Britns:

10. DDSCLK: System Clock

11. DCLKx6: DDS multiplier settings

12. System Audio Settings

13.F1 Custom set key

14. F2 Custom set key

Item 1 to 5, cannot be freely modified, otherwise it will lead to the transceiver exception or even not

work. If you modify them, you can restore the factory data set by RST.

Item 6, for CW Receiving side tone pitch adjustment. Users can according to their preferences and

habits, adjusting CW side tone.

Item 7, for CW transceiver delay. Users can operate according to their own habits, appropriate

changes this parameter to match the transmitters speed.

Item 12, Audio settings for the system, if the system beep or CW side tone is too high, then you can

to adjust your volume size by item.

- Press the frequency Key, choose current item.
- Press the "up" or "down" button in the Mic, can select different items.
- Via the Mic keypad can direct input any value.

■ After setting, press [**save**] key to save and exit setup.

■ If press Exit , not save and exit setup.

3.4.2 **user-defined on call sign display**

X108G can display of custom boot interface information. The system default display is "XIEGU",
Users can customize this content. The method is as follows:

a. In the shutdown state, hold down the F3 key, and then turn on your X108G
b. use the frequency knob to adjust the display character, press the frequency knob to determine the
current state
c. after the setting, press [**SAVE**] to exit.

3.4.3 **ADC on the system check value (Please Note: It is strictly prohibited to modify or delete**

the data!!)

In shutdown state, hold down the F2 key, turn on your X108G, you can see setting interface for ADC
check value of the system. The data in this interface is related to the accuracy of the S table. **It is
strictly prohibited to modify or delete the data!! Otherwise it will cause the S table display is
not accurate or S table does not show.**

IV General troubleshooting

The following points out the troubleshooting for the general problem, if you still can not solve the problem, please do repair, please do not disassemble the machine, or you will lose the warranty.

Fault description	Possible reasons	Resolvent
Unable to turn on your X108G	No connection power cord	Connecting power cable
	Power is not turned on	Turn on the power
	Power cable connection is bad	Replace or repair power cord
	Power supply reverse connection	Properly connected power supply
Not receive	Antenna is not connected	Properly connected antenna
	Antenna failure	Replace or repair antenna
	No communication	Please confirm the propagation characteristics of the current wave
	Other circumstances	need repair
Not transmit	Antenna is not connected	Properly connected antenna
	Low power supply voltage	Please replace the power supply
	Lack of power	Please replace the power supply
	Antenna SWR value is too large	Please check the antenna
	Work mode is not correct	Please choose the right mode of work
	Other circumstances	need repair
Screen no display	No connection power cord	Connecting power cable
	Power is not turned on	Turn on the power
	Other circumstances	need repair
Equipment goes up in smoke, smell		need repair
microphone operation exception	PTT interface connection exception	Re-connect microphone
	Please confirm that the current frequency is not in the forbidden band	Reset frequency
	Button no reaction	Re-connect microphone
	Other circumstances	need repair

After sales service policy

1. **Warranty clause**:

    When buyer from the point of sale who has obtained the authorization of XIEGU to buy our products, within two weeks after purchase,　if　host, multifunctional microphone, shell structure of the host, the USB data lines, power lines appear the performance fault of non-human damage, the buyer can be in the original place of purchase to enjoy a free replacement service. The transport costs borne by the seller.

    When buyer from the point of sale who has obtained the authorization of XIEGU to buy our products, in more than two weeks and within a year, if host, multifunctional microphone, shell structure of the host, the USB data lines, power lines appear the performance fault of non-human damage, the buyer have the right to enjoy free repair service. The transportation cost of the product from the buyer to the original place of purchase is to be borne by the buyer.

    When buyer from the point of sale who has obtained the authorization of XIEGU to buy our products, beyond one year later, if host, multifunctional microphone, shell structure of the host, the USB data lines, power lines appear the performance fault of non-human damage, the buyer can apply for maintenance services in the original place of purchase. The maintenance cost and the transportation cost will be borne by the buyer.

    The warranty period is calculated from the date of the purchase of the product.

2. **Warranty limitation clause:**

    The following restrictions on the warranty services, applicable to the host and all accessories，meet one of the following circumstances, we will cancel the warranty:

A．   Without permission and authorization, modification, removal, maintenance of the host's chip;

B．   Change product's embedded software;

C．   Immersed in liquid, broken, or man-made external damage;

D．   Over the warranty period (including additional warranty period);

E．   Product's serial number, after sales service card serial number does not correspond, missing, is torn or blurred;

F．   Products belong to seller who did not obtain the authorization of XIEGU.

    Meet one of the following conditions, it does not belong to the scope of the warranty:

A.   Damage caused by improper use of the user；

B.   The damage caused by an accident；

C.   Damage due to incorrect testing, maintenance, debugging, or other changes；

D.   The damage is not caused by the material or the quality of production；

E.   Due to improper use, causing damage to the shell or other external components；

F.   Use incorrect connection or match Kit.

Contact us:　**service@cqxiegu.com**

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www.cqxiegu.com