

HFTRANSCEIVER

# **X108G**

## Operating Manual



V1.01A

Outdoor Version

Revise: 2016-1



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## 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.
- 0.25 $\mu$ V receive sensitivity (preamp on).
- Narrow band double tuned bandpass 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 filterconfiguration.

## Security considerations:



Do not use equipment during a lightning storm.



Damp-proof!



Don't illegal operations!

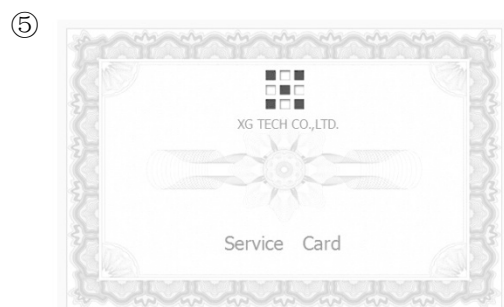
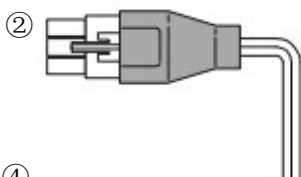
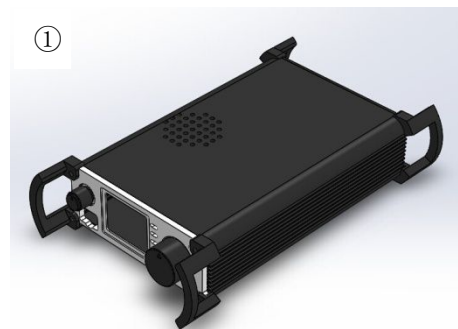


Note RF high-voltage of antenna connector!

## Packing list:

Qty

- |   |                         |   |
|---|-------------------------|---|
| ① | X 108G.....             | 1 |
| ② | Power supply cable..... | 1 |
| ③ | Hand microphone.....    | 1 |
| ④ | USB Cable.....          | 1 |
| ⑤ | Service card.....       | 1 |



## 一、 Specification's

### 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: 1Hz

Antenna impedance: 50  $\Omega$

Operating temperature range: -10°C ~ +60°C

Frequency stability:  $\pm 0.5\text{ppm}$  @ Open the power about 5 minute , -10°C~+60°C

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:  $\geq 40\text{dBc}$

Carrier suppression:  $\geq 45\text{dBc}$

IF filter: SSB 2.4kHz(-6dB)

CW 500Hz(-6dB)

### Receiving

IF Frequency: 10.7MHz

receive sensitivity: **0.5uV @ 12dB SINAD (PRE ON,  $\leq 2.0\text{MHz}$ )**

**0.3uV @ 12dB SINAD (PRE ON,  $> 2.0\text{MHz}$ )**

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

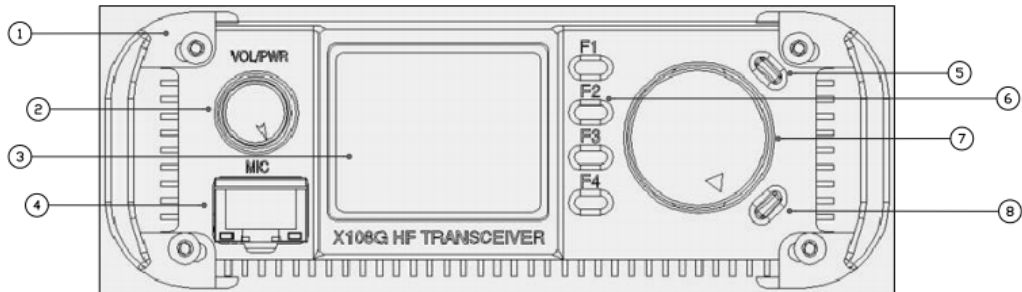
28.0~28.8MHz

0.5~30.0MHz (\*)

Dynamic range: Better than 90db  
 RIT Frequency control range:  $\pm 1\text{kHz}$   
 audio output: 0.5W@8Ω

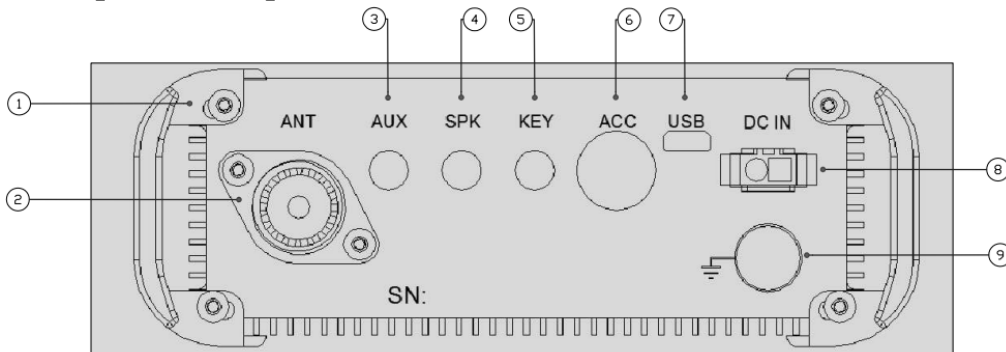
## 二、 Description of equipment

### 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 knob
8. DOWN Key

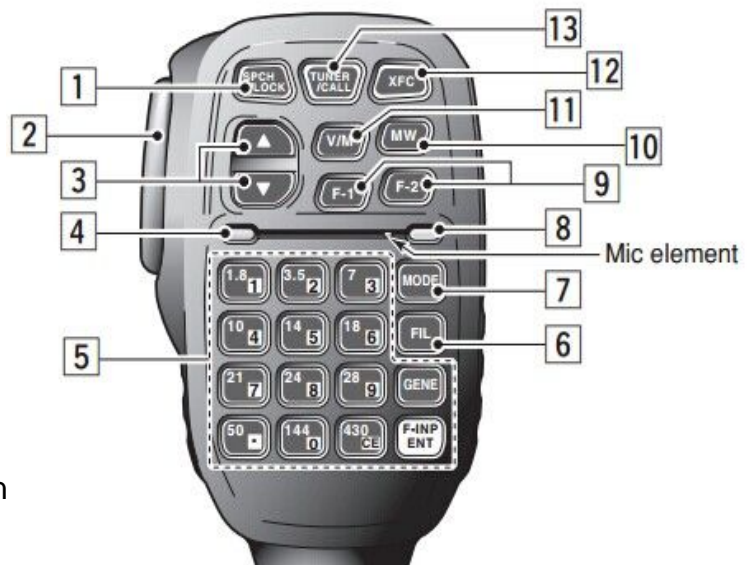
### 2.2 Rear panel Description



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 unlock again
2. PTT button
3. Up / Down frequency/channel
4. Receiving indicator
5. Multifunction
6. Filter selection buttons
7. Mode selection button
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



## 三、 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.

【A/B】 Switch between VFO A & VFO B.



【A=B】 Set VFO A the same as VFO B.

【SPLT】 Select SPLIT operating mode.

【RIT】 Select RIT mode – adjust via selector knob B, setting shown on RIT display in OLED.

【POW】 Set RF output power – adjust via selector knob B, level displayed via red line in OLED



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

【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 knob B, speed displayed under KEY in OLED


【TIME】 Set Internal Clock - adjust via selector knob B, select hour/minute with Up/Down buttons.



**【SQL】** Select to adjust Squelch level via selectorknob B, level shown on line display in OLED.  
**【VCMP】** voice compression settings


### 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  to complete the mode switching.

### 3.2.3: Filter Switching

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

**Method 2:** On the multifunction digital microphone in hand, press  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 green. When the preamplifier is off, PRE will appear dark.

### 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 green. 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 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 to the [POW] menu page, then pressing the corresponding function key, you can enter the transmit power settings. At this point, the power set on the screen will display Po, press [UP/DOWN] key, you can change the transmission 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

In frequency mode, set the frequency, patterns and other information needs to be saved, press the [V/M] button, rotate the frequency knob to empty frequency, press the [MW], you will see CH\*\*\* will appear in the lower left corner of the display flashes, press the [MW] saved.

### 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, switch to [KSPD] menu page, then pressing the corresponding function key, press the [UP/DOWN] key, 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, switch to the [SQL] page menu, and then pressing the corresponding function key, press the [UP/DOWN] key, set SQL squelch depth and saved automatically.

### 3.2.21: Set voice (speech) compression ratio

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

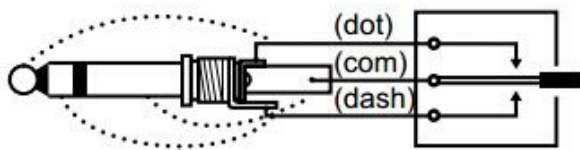


**【AUX】** No function

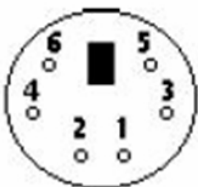
**【SPK】 External speaker output**

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

**【KEYER】** TelegraphKey



Manual integration. You can switch in



**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

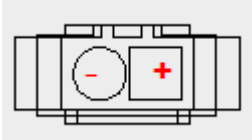
BAND	LEVEL	BAND	LEVEL	BAND	LEVEL
1.8MHz	0.33V	10MHz	1.33V	21MHz	2.33V
3.5MHz	0.67V	14MHz	1.67V	24MHz	2.67V
7MHz	1.00V	18MHz	2.00V	28MHz	3.00V

### 【USB】 USB port

PC controlor firmware update

### 【DC IN】 Power port

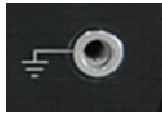
Power socket polarity, as shown:



**Note: Power input range: 12~14.5V DC**

**Do not exceed the input voltage range and Reversepolarity.**

【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.

Avoid

Pushing RST button in advanced menu settings.

Pushing this will remove all factory settings.

All firmware updates and changes to settings are done at owners risk and may void warranty.

Please use the firmware which be provided by Xiegu.

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.

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 to automatic withdrawal.
- If press Exit , not save.

# After sales service policy

## 1. Warranty clause:

When buyer from the point of sale who has obtained the authorization of XIEGU to buy the X108G, within two weeks, 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 the X108G, 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 the X108G, 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.

## Note

I. Contact us:

Xiegu official website:

<http://www.cqxiegu.com/index.php?route=common/home>

II. XIEGU authorized distributor's list:

<http://www.cqxiegu.com/index.php?route=information/information&mid=3>

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