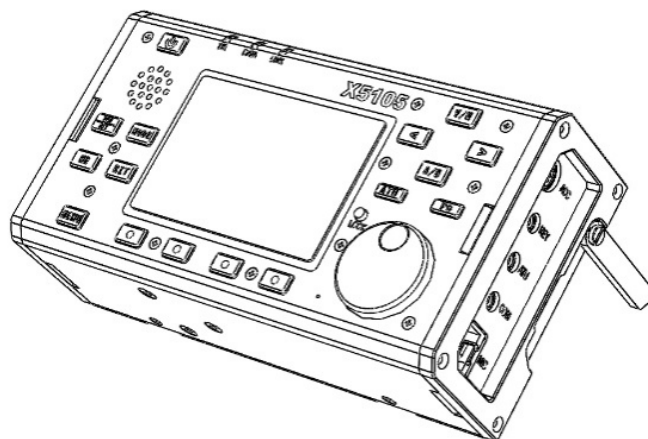**XIEGU COMMUNICATION**

X5105

HF+50MHz Portable HF Transceiver

Instruction Manual   V1.0.03

Chongqing Xiegu Technology Co.,Ltd.
www.cqxiegu.com

Important reminder:

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

Features:

- 3.6 inch LCD screen
- Built in 5000mAh large capacity battery pack
- Built in ATU
- Covers all modes of HF, 50MHz band (SSB/CW/AM/FM/RTTY/PSK)
- IF signal output
- Built in AF-DSP digital noise reduction processor
- Equipped with trestle for desktop operation
- Very small in size and ultra portable

Security considerations:

Do not use equipment during a lightning storm.
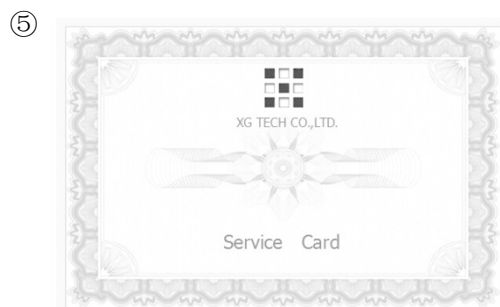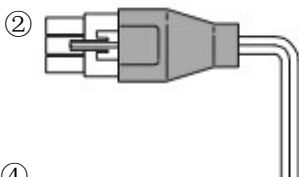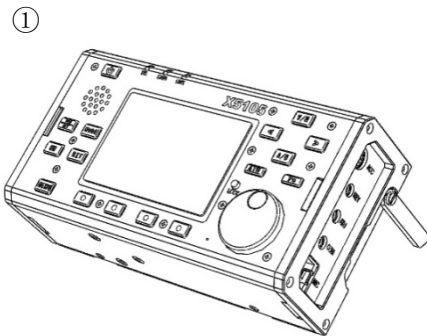
Damp-proof!

Don't illegal operations!

Note RF high-voltage of antenna connector!

Packing list:

Qty

①	X5105......	1
②	Power supply cable...........	1
③	Hand microphone.............	1
④	USB Cable...........	1
⑤	Service card................	1

①

②

④

③

⑤

Introduce

The X5105 is an ultra-portable multimode HF transceiver. 3.6 "super large LCD display screen with rich content information. Built-in 3800mAh high-capacity battery pack can provide 6 to 8 hours of use time for outdoor use, built-in highly efficient automatic antenna tuner (ATU), so you no longer worry about the antenna problem, you can quickly deploy your field shortwave communication station. X5105 covers HF, 50MHz band full mode.

X5105 has many advanced functions of large base stations. VFOA/B mode, split frequency **transceiver function,** RIT receive fine tuning, NB noise suppressor, AGC speed selection, NR digital noise reduction, number NOTCH, built-in automatic telegraph keys, built-in efficient automatic antenna tuner, CW trainer, large capacity battery pack, and computer-aided control functions.

X5105 has a small size (about 168 * 93 * 47mm, without protrusions), light body (about 0.94kg). It provides up to 5W of RF power over the full frequency range. It operates normally from 9 to 15V DC; its low standby current provides longer battery life, it has intelligent battery management.

1 X5105　Specifications

Basic Specifications

Frequency range:

Receive: 500kHz-30MHz   50MHz-54MHz

Transmitting: 160 meters -6 meters (Amateur band only)

Operating mode: A1A(CW)，A3E(AM)，J3E(USB/LSB)，F3E(FM)

minimum frequency stepping: 1Hz

Antenna impedance: 50Ω

Operating temperature range: -10℃ ~ +60℃

Frequency stability: after turn on the radio 1-60 minutes is + 4ppm, @25℃：1ppm/hour

supply voltage: normal: 13.8VDC + 15%, negative grounding

Operating voltage: 9.0-15.0VDC, negative grounding

Current consumption: receive: 500mA@ Max   transmit: 2.5A@ Max

Battery capacity: 3800mAh @12V

Dimensions: 168*93*47mm[does not include protrusion]

Weight: 0.94Kg[host only]

Transmitter parameters

Transmitter power：5W(SSB/CW/FM)，1.5W(AM carrier)，　@13.8VDC

Modulation mode: SSB balanced modulation/AM low level amplitude modulation/FM Variable reactance frequency modulation

FM Maximum frequency swing: ±5kHz

spur reduction: -45dB

Carrier suppression: > 40dB

Sideband spurious: > 50dB

SSB frequency response: 400Hz-2800Hz（-6dB）

Microphone impedance: 200-10k(conventional 600Ω)

Receiving parameters

Circuit type: double frequency conversion superheterodyne + audio DSP

IF frequency:　　first IF: 70.455MHz　　second IF: 10.695MHz　　third IF: 455kHz（NFM）

Sensitivity

	SSB/CW	AM	FM
1MHz-1.8MHz	0.35uV	10uV	/
1.8MHz-28MHz	0.25uV	2uV	/
28MHz-30MHz	0.25uV	2uV	0.35uV
50MHz-54MHz	0.25uV	2uV	0.35uV

(PRE=on，ATT=off，NB=off，NR=off，SSB/CW/AM = 10dB S/N，FM = 12dB SINAD)

Image rejection: 70dB

If Rejection: 60dB

Selectivity:　　SSB：-6dB:2.4kHz/-60dB:4.6kHz

　　　　　　　CW：-6dB:500Hz/-60dB:2000Hz

　　　　　　　AM：-6dB:6.0kHz/-60dB:25.0kHz

　　　　　　　FM：-6dB:12.0kHz/-60dB:25.0kHz

Audio output: 0.6W　（8Ω，≤10% THD）
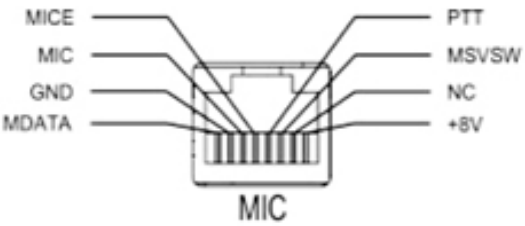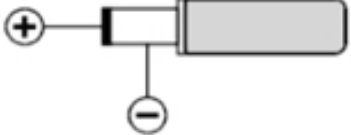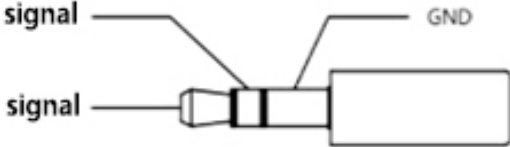
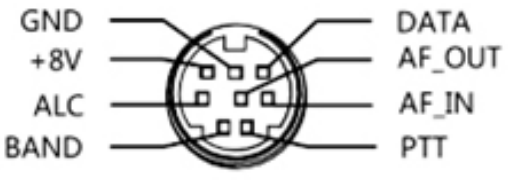Audio output impedance: 4 – 16Ω

Packing List
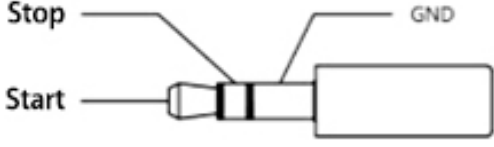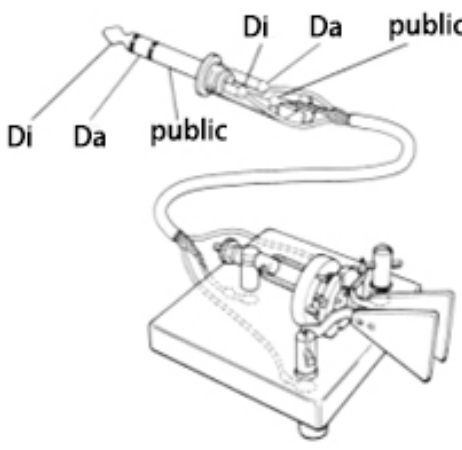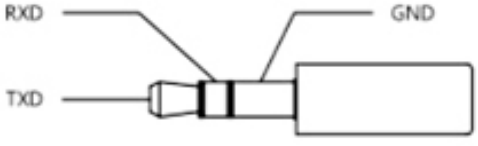
Item	Quantity
X5105	1pcs
Mic	1pcs
power cable	1pcs
Data cable	1pcs
Instructions	1pcs
Certificate	1pcs
warranty card	1pcs

==

Optional accessories

Item	Description
CE-19	ACC Wiring expansion card
XPA125	120W PA and ATU integrated machine

Interface definition

Microphone interface	DC power input 13.8V
MICE — PTT MIC — MSVSW GND — NC MDATA — +8V MIC	⊕ ⊖
	External connection speaker / earphone
	signal — GND signal
ACC	**ATU**
GND — DATA +8V — AF_OUT ALC — AF_IN BAND — PTT	Stop — GND Start
	Key
COM	Di Da public Di Da public
RXD — GND TXD	

Charging and maintenance of internal battery

X5105 has a built-in 3800mAh battery pack. When the external power supply is not connected, the battery pack supplies power to the X5105, when the X5105 is connected with an external power supply, the circuit inside the machine automatically switches to the external power supply.

Charging method:

1. In the menu-7, select [CHG], select "CHG ON", start charging function.
2. select "Charger ON", Start boot-strap charging function.
3. Select "Charger OFF" Shut down boot-strap charging function. If it is power off, then the default is start boot-strap charging function.
4. The external power supply voltage is set between 13.5V-15.0V and the power supply is connected to the X5105 external power supply.
   The host will automatically start charging.
5. The maximum charge time is about 12~15 hours. When the battery is full, the charging will stop automatically.

When the battery is powered for X5105, when the battery power is about to run out, the power indication sign on the upper right corner of the screen is displayed as ⊂⊐. At this point, the X5105 should be charged or switched to an external power supply. During the charging process, the casing of the machine has a slight fever.

Normally, the lifetime of the internal battery is about 3 years. When there is a significant drop in capacity or charging failure, contact the dealer to replace the battery (outside the warranty period, you will be charged for a fee).

When using an external power supply, do not exceed the rated voltage of the device, otherwise it will cause damage to the device.

Please turn off the power immediately when the machine shell is very hot near the battery, and put the equipment in a safe and ventilated place. After confirming the safety situation, please contact us for proper handling.

External power supply connection

External DC power supply output voltage: 13.8；electric current load capacity：3A

Cable connection method:

  white wire connect "+", shielded wire connect "-".

X5105

Shielded

white
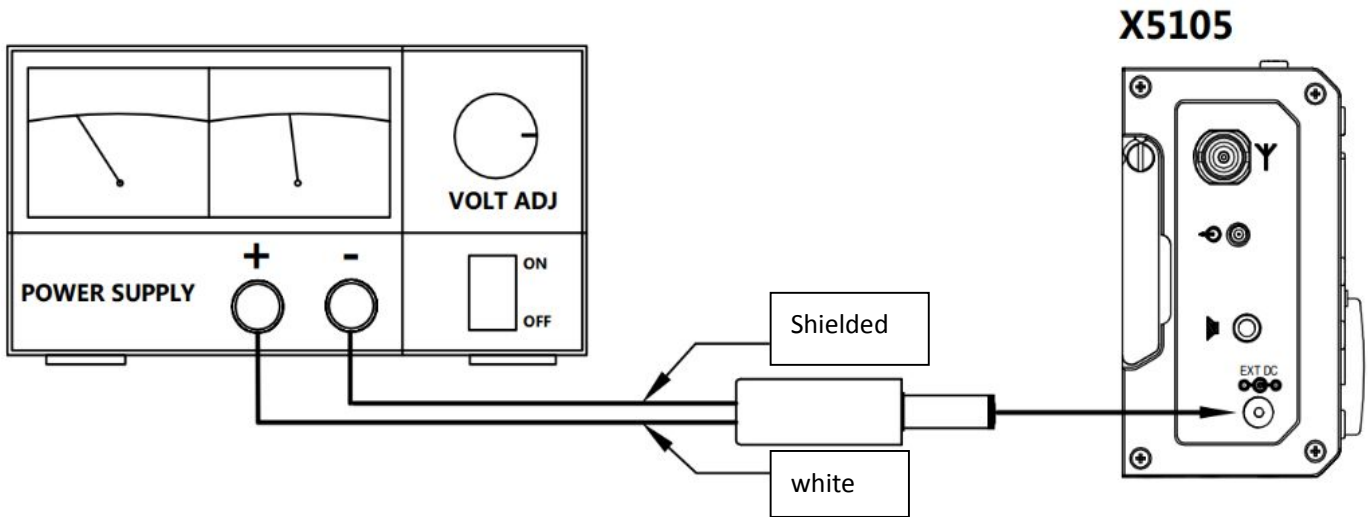
EMC magnetic ring installation method：As shown；

The headphone cable Loop two Loop around the magnetic ring .

尽可能靠近接头

2 Description of equipment

2.1 Front panel button function

① Power button

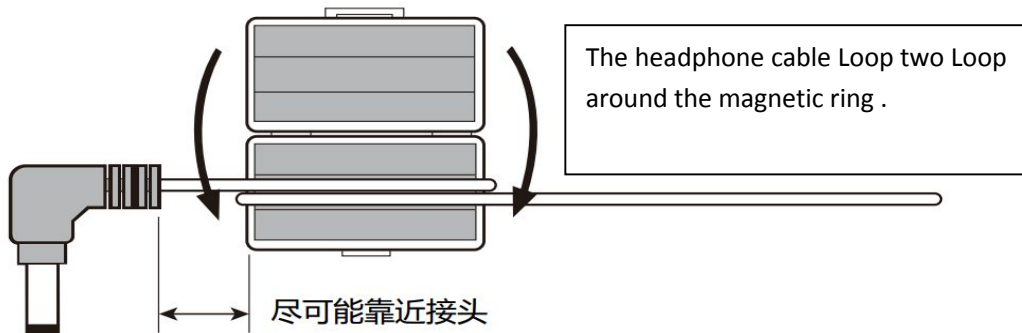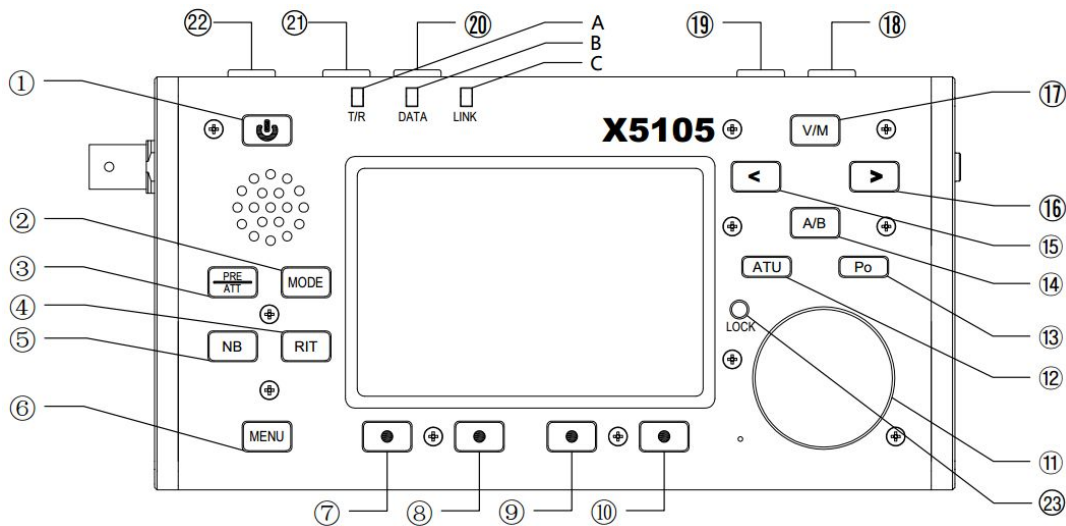Press this button for a second to turn on or turn off the radio.

② Mode button

With this key, you can change the mode of operation and will cycle in the following mode: [LSB-USB-CW-CWR-NFM-AM]

③ PRE/ATT button

With this key, the preamplifier or pre attenuator will be turned on or be turn off in the following states: [PRE=ON--ATT=ON--PRE/ATT=OFF]

④ RIT button

With this key, the receive frequency adjustment function is turned on.

⑤ NB button

With this key to turn on or turn off the NB function.

⑥ MENU button

With this key, you can switch the current display of the multi-function menu.

⑦ -⑩ Multifunctional menu button

Press these four buttons to turn on or off the corresponding function displayed on the menu area on the current screen.

⑪ Major tuning knob

The main tuning knob of X5105, can be used either for frequency regulation or set the parameters.

⑫ ATU button

When the key is pressed for a short time, the automatic antenna tuner will be connected to the antenna port, by pressing this button for a long time, the automatic antenna tuner will be started.

⑬ **Po button**

With this key, and with the main tuning knob, the power of the transmitter can be adjusted. The range of adjustment is from 0.5W-5W, stepping for 0.5W.

⑭ **A/B button**

With this key, you will switch between VFOA/VFOB.

⑮ **< button**

With this key, the current frequency step carries one bit to the left.

⑯ **> button**

With this key, the current frequency step carries one bit to the right.

⑰ **V/M button**

With this key, you can switch between VFO mode and MEMO mode.

⑱ **Up button**

With this key, X5105 can be switched to higher frequency bands.

⑲ **DN button**

With this key, X5105 can be switched to lower frequency bands.

⑳ **- button**

With this key, you can reduce current volume.

㉑ **+ button**

With this key, you can increase current volume.

㉒ **PTT button**

Press and hold this button, X5105 will go into the transmit state.

㉓ **LOCK button**

If you press this button for a short time, you will lock all buttons and knobs on the panel;

By pressing this button for a long time, you can set the backlight on / off.

Status indicator		
A [T/R]	B [DATA]	C [LINK]
Transmit/Receive switch indication	Data indication	Peripheral indicator light

Indicator color description:

A T/R indicator

When the X5105 is in receiving mode, the indicator light is green.

When the X5105 is in transmitting mode, the indicator light is red.

B   DATA indicator

When the data signal or channel are busy, the indicator light flashes.

C   LINK indicator

When the host is connected with the external equipment, the indicator light will shine.

Function menu corresponding to 4 multi-function buttons below screen.

1.

A=B	SPL	NR	NTH
Copy VFOA to the background	Split On/Off	Digital noise reduction	number Notch

2.

AGC	FIL	SRM	SWR
Automatic gain control selection	Filter selection	Scan receiving mode	SWR scanning

3.

M > V	MW	MC	TAG
Save the VFO frequency on the channel	Store current channel	Clear current channel	Channel information / custom characters(Press this button for a long time to enter the editor)

4.

BK	KEY	KSP	-
CW insert function on / off	Key manual / automatic mode selection	Automatic key rate selection	-

5.

RE1	RE2	RE3	CSN
Set CW message 1(Press this button for a long time to enter the message editing)	Set CW message 2(Press this button for a long time to enter the message editing)	Set CW message 3(Press this button for a long time to enter the message editing)	Power on display call sign editing(Press this button for a long time to enter the editor)

6.

SQL	CMP	MTR	VLT
Squelch function	Speech compression	Display switch of multi-function table	Power / voltage display switching

7.

CHG	MSL	IFO	VER
Charging switch	Built-in / external MIC selection	IF output switch	Firmware version display

8

| **MDN**	**-CAR**	**-AFC**	**------**
Digital MODEM	Carrier Tracking (MDN=ON)	frequency tracking (MDN=ON)	

9

AFF	**-HPF**	**-LPF**	**SPK**
Digital audio filter	high-pass filter	lower-pass filter	Speaker / headphone mode selection

Screen display information

Work mode information — VFO-A FM — Host status information

working frequency — 50.025.000

Multifunctional instrument area

Advanced functional status indication area

RIT +0.05 CH 000 — Current channel information

COMP PRE ATT AGC-M NR NB FIL-0.5k — Lock flag

1 Messages

AGC KEY CMP FIL — Multi function menu area

2.2 Left panel interface function
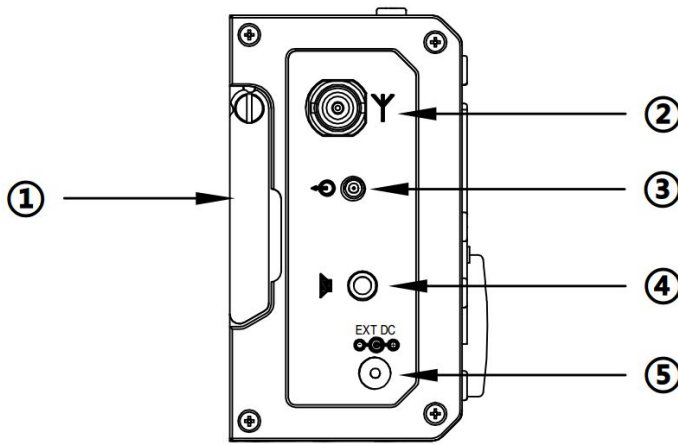
① **Left bracket**
Rotate the bracket when using it, when after using it, take it back to the side shield.
② **Antenna interface**
Connect the antenna to the 50 ohm coaxial cable with the BNC connector.
③ **IF signal output port**
The first IF signal is output for use by the XDT1.
* XDT1 is a data terminal equipment of Xiegu.
④ **External speaker / earphone interface**
This interface is 3.5mm stereo socket (3 line), it can connect external speaker (impedance 4-16).
Before inserting the headset into the interface, be sure to select earphone mode first so as to avoid damage to your hearing and headset.
⑤ **DC power interface**
The external DC power input interface, it uses the standard power cord to connect the external stable DC power to this interface. The external DC power supply must be able to provide the power output of the 13.8V@3A. The interface can also be used to charge for internal battery.

## 2.3 Right panel interface function
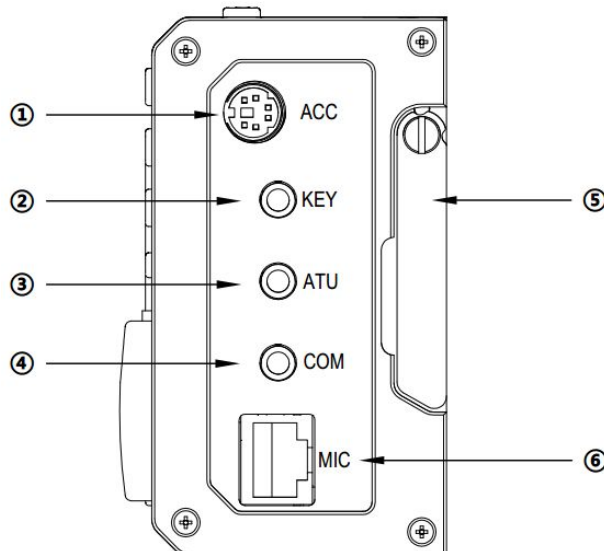
① ACC interface

The interface is a 8PIN micro DIN interface, it can be used for external power amplifier connection, PTT control, band signal transmission, it can also be used to communicate with the computer for PSK communication when the audio signal input / output.

② KEY interface

The interface is 3.5mm stereo interface, which can be used to connect manual / automatic telegraph keys.

Key connection is shown in this figure:
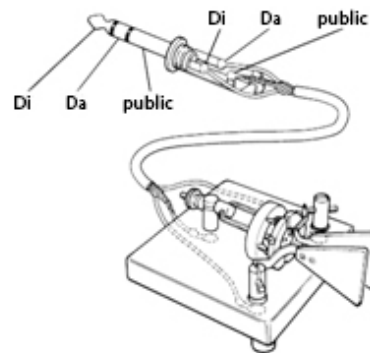
Manual key, you need to "drop"
And "click" connected together

③ ATU interface

The interface is a 3.5mm interface (3 lines) that can be used to control external power amplifiers with antenna tuning.

④ CIV interface

The interface is a 3.5mm interface (3 wire) which used for the connection of the computer aided control system or firmware update.

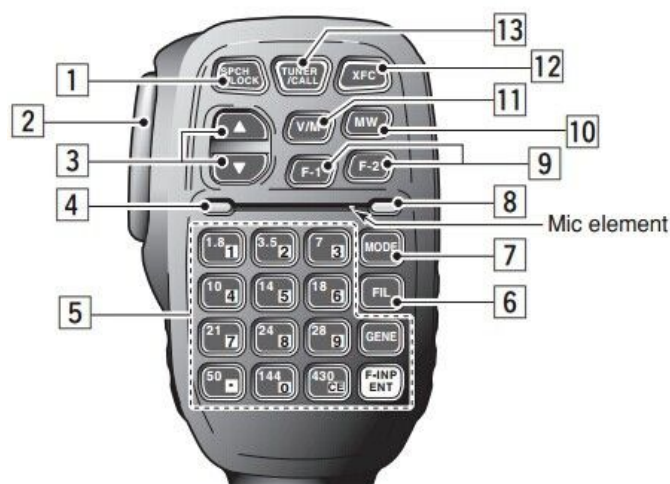## ⑤ Right bracket

Rotate the bracket when using it, when after using it, take it back to the side shield.

⑥ MIC (microphone) interface

The interface can be used for microphone connections.

2.4 Handheld microphone function

1. LOCK button, you can lock the host button and the mouse button via this button, and press it again to unlock.
2. PTT button, transmitting control button.
3. Move up/down, Increase and decrease of frequency.
4. Receiving / Transmitting indicator light, microphone operated indicator light.
5. Digital key
6. FIL button, built in filter selection.
7. MODE button, selection of host operating mode.
8. Function indicator lamp, **No** indication.
9. Function button, F1/F2 custom settings button.
10. MW button, store operation.
11. V/M button, frequency / channel switching.
12. XFC button, No function.
13. CALL button, press this button for a long time to start the automatic antenna tuning in the host.

3 Operation

3.1 Turn on / off transceiver
1. Turn on the transceiver: just press ⏻ for a long time
2. Turn off the transceiver: in the boot state, press the key ⏻ for a long time.
Press the button of the switch to delay one second, in order to prevent the misoperation of the switch key.
Forced reset: When the host system is in a halted state, such as the key is not responding, or can not exit the transmit state and the key is not responding, long press the power button and hold for more than 8 seconds, will force reset the MCU and shut down.

3.2 Battery / voltage display
1. When the battery is powered by the built-in battery, the remaining battery power of the current battery will be displayed in the upper right corner of the display.
2. When using an external power supply, after switching to the [VLT] Page 6 menu, this location shows the voltage level of the external DC power currently connected to the transceiver.

If you have not used the X5105 transceiver for more than 20 days, we recommend that you plug it in with an external power source and charge the device until the display is done. For details, please refer to [Charge] section.

3.3 Operating frequency band selection

The frequency range of X5105 covers 1~54MHz. The amateur frequencies in this range are divided into multiple frequency bands and can be switched in a number of different ways. You can complete the equipment operation according to the operation instructions in this section.

Operation method: press DN or UP key to switch to the next or last operation band respectively.

1.8MHz ⟷ 3.5MHz ⟷ 5.2MHz ⟷ 7.0MHz ⟷ 10MHz ⟷ 14MHz
50MHz ⟷ 28MHz ⟷ 24MHz ⟷ 21MHz ⟷ 18MHz
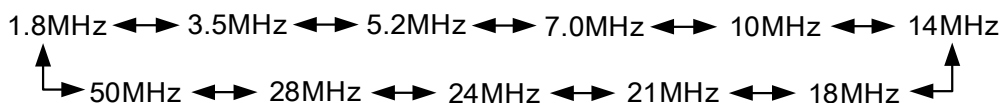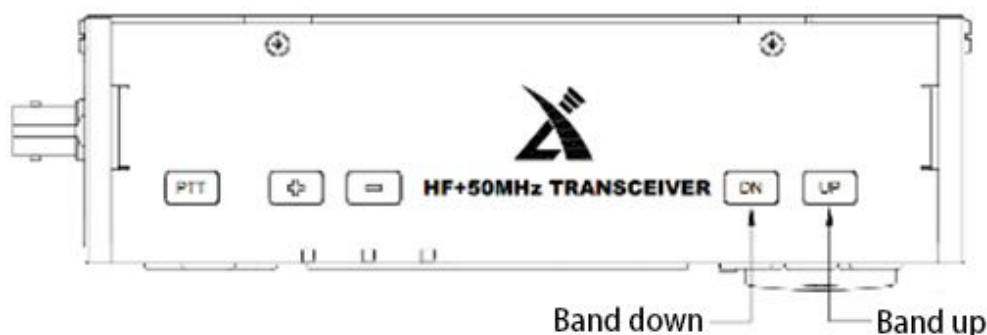
A. The opening of the 5MHz frequency band is based on the regulations of the country (or region) where it is located.
B. Different versions of the machine have different frequency divisions, depending on their country (or region) regulations.
C. VFO-A and VFO-B are two separate VFO modes, which can be set to different working conditions, please refer to the [VFO settings].

3.4 Work mode selection

Press the [MODE] button to switch between all modes in a fixed order.

LSB ⟷ USB ⟷ CW ⟷ CWR
FM ⟷ AM
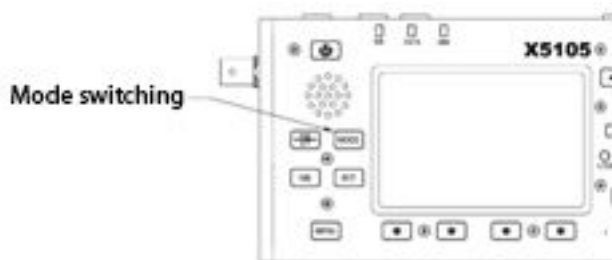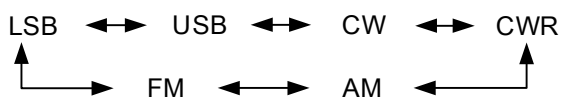
*VFO-A and VFO-B can be set to different operating modes in the same frequency band, thus realizing the different operation modes of "voice /CW".

3.5 Adjust the volume

Adjust the output volume according to the volume plus and minus buttons.

Volume increase   Volume reduction
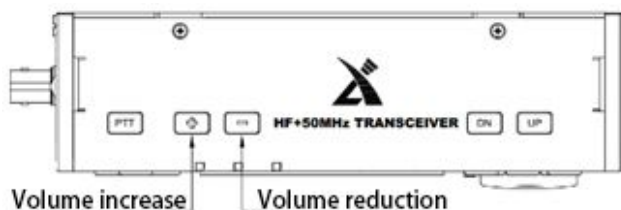
When using the AF- IN/OUT port of the ACC interface, please adjusting the volume level in the system menu.

3.6 Regulated transmit power

Press the [Po] transmit power setting button, you can set the transmit power.
A. Press the [Po] button to enter the power setting state, the screen will display the Po power setting number.
B. Rotate the big knob, set the power, step 0.5W.

Transmit power setting
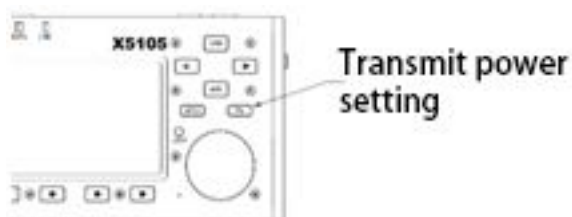
When you do not understand the current state of the antenna, minimize the set transmit power value for the first time you use the X5105 transceiver.

3.7 Use the host PTT button

X5105 comes with a PTT button, you can start the transceiver's transmission through this button.
Operation method:
A. Press this button to start the transmitting function.
B. Speaking into the built-in MIC hole, can be completed communications.

PTT button
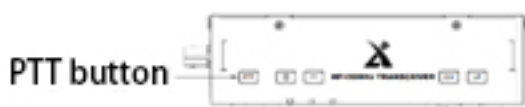
3.8 Set operating frequency

There are two ways to set the X5105 operating frequency, use the big knob to set the frequency, or use the multi-function mic to set the frequency.

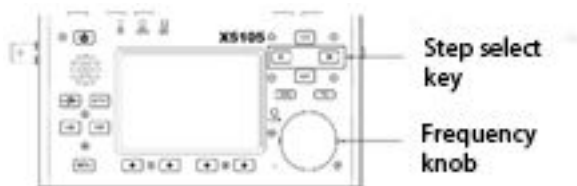Operation method:

A. Use large knob to set frequency

Press the button [<] or [>], move the cursor of the frequency bit to the left or to the right, select the frequency of the desired step.

Rotating frequency knob sets the frequency of the current step.

Step select key

Frequency knob

B. Use a multi-function microphone for frequency setting

Press the [F-INP ENT] button on the cursor, and the X5105 enters the frequency setting. The cursor appears on the left of the frequency display bit.

Enter the desired frequency value in turn, and then press [F-INP ENT] button again to complete the frequency setting.

For example, set the current frequency to 51.050000MHz, and press the order as follows:

First, press the [F-INP ENT] button.

Please press the 51.050000 numeric key in turn.

Once again press the [F-INP ENT] button to complete the settings.

3.9 Start the ATU (automatic antenna tuner) into the tuning function

X5105 transceiver built-in an efficient automatic antenna tuner, which can help you easily complete the erection and debugging of the antenna.

Press the [ATU] button shortly to access the built-in tuner and the "TUNE" logo appears on the top of the screen.

Press the [ATU] button for a long time, it will start the ATU auto tuning function. When the tuning is complete, the host will automatically return to the receiving state.

ATU tuning button
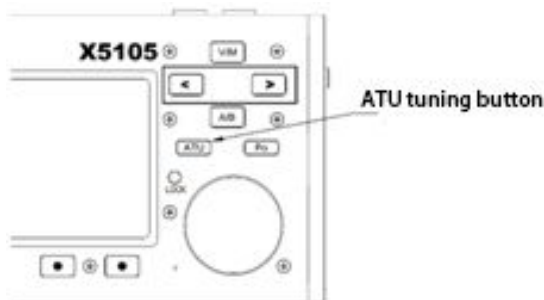
In actual operation, if the [HI-SWR] icon flashes on the screen, the tuning fails, and the SWR is large and needs to be tuned again.

3.10 RIT (receive frequency trimming)

Relative to the set frequency, the RIT function can set the offset value of the actual

receiving frequency of the maximum ±1.5kHz.

Operation method:

A. Press [RIT] button to start RIT function.

B. The rotating knob can change the receiver frequency in the range of ±5kHz. The screen has the corresponding area to display the frequency change value.

C. If you want to clear the RIT offset, press [RIT] button for about 2 seconds, in the system prompt tone "beep" sound, the value of RIT settings will be cleared.
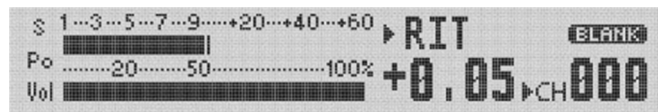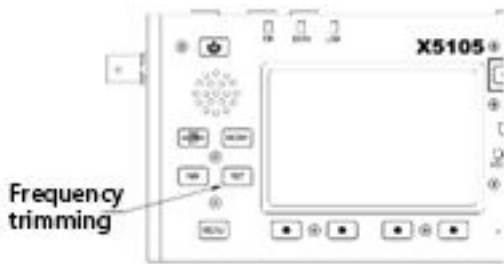
If the frequency offset range more you want, you can use split frequency transceiver mode. Please refer to the VFO instructions for details.

3.11 Automatic gain control (AGC)

By adjusting the appropriate AGC automatic gain control speed, the receiver can achieve the best effect. Operation method:

A. Switch to the second page menu, press [AGC] function button shortly.

B. The AGC function will be selected in the following order:
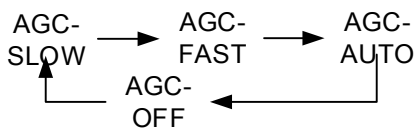
When you select "AGC-AUTO", the CW mode is actually "AGC-FAST", in voice mode is "AGC-SLOW."

If AGC-OFF is selected, the AGC system is turned off and the display of the S table is stopped.

3.12 Preamplifier / preamplifier (PRE/ATT)

Pre amplifier (PRE) and pre attenuator (ATT) can improve the receiver's listening effect. When the signal is weak, the preamplifier can be switched on to increase the signal strength. When the signal is strong, the preamplifier can be switched on to reduce the signal strength.

Of course, you can also choose to turn off the circuit unit so that the signal will by pass.

Operation method:

A. Press the [PRE/ATT] button to start the function.

B. The switching sequence will follow the following loop:
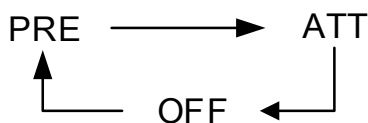
In the low frequency waves (less than 10MHz) operation, the preamplifier can be closed, then let signal in by-pass state, it will be more conducive to improve the receiving effect,

And it can avoid the blocking of receiver caused by strong interference signal. Typically, when the S table is still changing, the preamplifier is not need to turned on.

3.13 Noise suppressor NB
Noise suppressor can effectively eliminate some specific pulse type interference, especially the noise produced by the automobile ignition system, and can improve the receiving effect obviously.

Operation method:

A. Press the [NB] button, the screen appears corresponding prompt information, NB function is turned on.

B. Press the [NB] button again, it will turn off the NB noise suppressor.

* The NB function can only suppress the pulse noise of a specific type, and can not replace the NR noise reduction function.

3.14 The Short-wave Data MODEM (MDN)(Currently only PSK31 receive decoding function can be used.)
X5105 built-in amateur radio data communications modem.

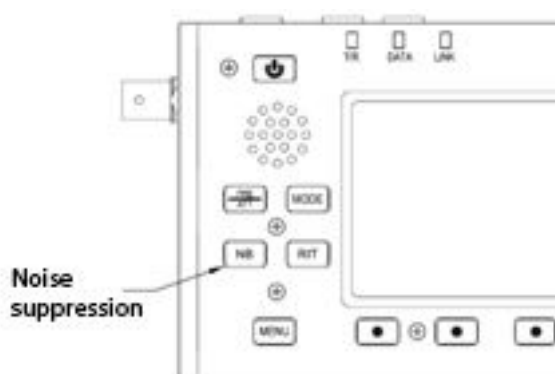Operation method:

A. In the menu-7--MODEM function selection; select [**MDN**], Open the data function;

B. [CAR] is the carrier tracking mode;

C. [AFC] frequency tracking mode;
   When receiving the PSK31 signal, the spectrogram will display the spectrum of the corresponding signal, and the modulation information of PSK31 mode will be automatically demodulated.

D. Press [**MDN**] again, then Exit.

3.15 Pilot frequency operation SPL and VFOA/B setting
There are two independent VFO in X5105 transceiver, which can set different frequencies and modes respectively. Set the VFO reasonably, and with the menu SPL function, you can easily achieve pilot frequency transceiver operation mode.

VFO settings:

A. Press the [A/B] button, you can switch between VFO-A and VFO-B.

B. When you switch to a certain VFO state, you can set the current VFO's working frequency, working mode, and so on.

Pilot frequency transceiver operation method:

A. First set the receiver frequency and mode (VFO-A).

B. And then set the transmit frequency and mode (VFO-B).

C. Press [MENU] button, switch to the first page menu, select the SPL function, it opens the pilot frequency transceiver working mode.

*You can also make full use of VFOA/B to set different frequencies or modes, so double frequency monitoring can be achieved via real-time switching.
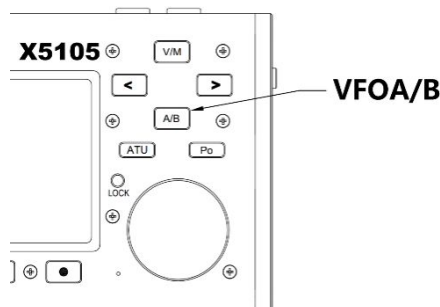
3.16 VFO mode /MEMO mode (V/M) setting

Transceiver can switch between VFO mode and MEMO mode, and realize flexible operation mode.

Operation method:

A. Press the [V/M] button, you can switch between the VFO (frequency) mode and the MEMO (frequency) mode.
B. In the current mode, press the [V/M] button, and then switch to another mode.
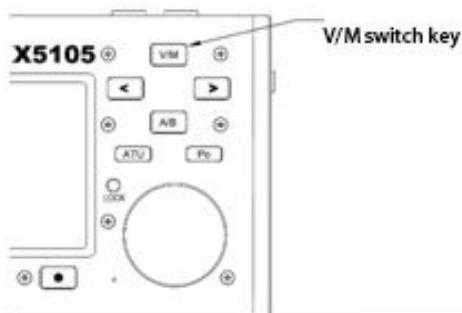
3.17   Lock button /Backlight off operation

The lock key (LOCK) can avoid the incorrect triggering of the transceiver and the microphone during outdoor operation.

Operation method:

A. Press the [Lock] button shortly to start the lock.
B. Press the [Lock] button shortly again to turn off the lock.
C. After locking, the corresponding area on the screen will have a locked symbol display.
D. Press the [LOCK] button for a long time to turn off the display backlight completely. Press and hold the button again, turn on the backlight. This function is still valid when the lock is on.
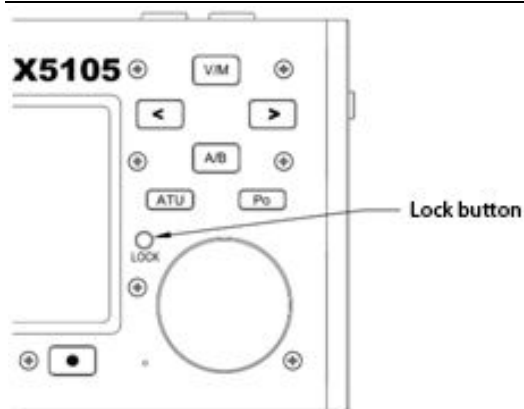
3.18 CW communication

Operate with a hand key or an external keying device.

Operation method:

A. Insert the plug of the key (three wire) into the KEY interface on the right.
B. Press the [MODE] button and switch mode to CW (or CWR).
C. Press the [MENU] button for a long time, rotate the knob, transfer Menu #2（CW T/Rx Delay Time）, press the button [<] and [>] set the delay time (default: 500ms). Press the corresponding [YES] button at the bottom of the screen to save the new setting and exit the menu mode.
D. Press the [MENU] button, switch to the fourth page menu, select the BK function.
E. Press the key, you can do the CW communication.

*Practice mode

You can use X5105 as a CW code trainer, as follows:

Press the [MENU] button briefly, switch to the fourth page menu, select the BK function as "OFF".

In this state, press the key, the transceiver CW side tone issued, but did not transmit the signal.

F. The volume of the CW side tone can be adjusted by system menu, as follows:
● Press [MENU] button for a long time to enter menu mode.
● Turn to menu fifteenth (BEEP Volum);
● Rotary encoder, select the required volume level, range from 0~7 adjustable;
● After completing the operation, press the corresponding [YES] key below the screen, save the new settings and exit the menu mode.

G. The tone of the CW side tone can be adjusted by the third system menu (CW RX Side Tone), as follows:
● Press [MENU] button for a long time to enter menu mode.
● Move to Menu 3 (CW RX Side Tone)
● Press the button [<] and [>] with the rotary encoder, select the required tone, range from 500~1200Hz to adjustable, the default value is 800Hz.
● After completing the operation, press the corresponding [YES] key below the screen, save the new settings and exit the menu mode.

H. The left and right hand patterns in CW mode can be adjusted by [KEY] on the fourth page menu, as follows:
● Press the [MENU] button shortly and switch to the fourth page menu.

● Press [KEY] button, select Manual / left hand / right hand mode.

I. The automatic key rate adjustment method is as follows.
● Press the [MENU] button shortly and switch to the fourth page menu.
● Press the [KSP] button, rotate the encoder to adjust the automatic key rate.

3.19 CW automatic calling device

The X5105 host provides 3 sets of CW preset message storage to realize automatic call in CW mode.
Operation method:
● Quickly press the [MENU] button, switch to the fifth page menu.
● Press [RE1] ~ [RE3] function button 2 seconds, into the preset message editor.
● In the text editor window, under the screen to provide the text editing tools used, press the corresponding function button to enable the corresponding function.
● After editing, press the [SAVE] button to save the edited message content and return to the normal operation state.
● Quickly press [RE1] ~ [RE3] function button, you can start the CW automatic call.

3.20 SWR scanner
The X5105 host has the function of a simple antenna analyzer, which can scan the SWR parameters of the current antenna and facilitate the user to adjust the antenna.
Operation method:
● Press [MENU] button shortly, switch to the second page menu.
● Press the [SWR] function button, start SWR scanning function.
● Under the scanner interface, the SWR of the current antenna can be observed intuitively.
● Press the [BW] function button, you can set the SWR scanning bandwidth.
● Press the [QUIT] function button, exit SWR scanner.
The scanning results of the SWR scanner may have some errors, such as the accurate measurement of antenna SWR and other data, please use professional antenna analyzer or RF network analyzer for measurement.

3.21 Digital audio filter(AFF)
Operation method:
A. Light press[**MENU**] to Page 9;
B. Select [AFF], open the digital filter function. In this case, [HPF] and [LPF] function options are displayed.
C. [HPF] is a high-pass filter option, and [LPF] is a low-pass filter option. Select any filter, rotate the main knob to adjust the filter parameters. Two sets of filters cooperate, can form the ultra-narrow band filter, can improve the signal performance.
D. Press [**AFF**] again, Exit.
1. SSB mode: We recommend to adjust the minimum HPF to 300Hz ， the LPF adjust to 1800～2200Hz.

2. CW mode: We recommend to adjust the minimum HPF to 500Hz , the LPF adjust to 900 ~ 1200Hz.

3.22 Speaker / headphone mode switch

Operation method:

A. Light press[**MENU**] to Page 9;
B. Select [**SPK**], Switch between speaker / headphone mode. At this point, the left side of the screen will display the corresponding speaker icon or headset icon.

⚠️ When in speaker mode, do not insert headphones. Otherwise it will damage your hearing and headphone equipment.

3.23 Frequency / channel scan SCN

No function.

3.24 Channel storage(MW)

Regular channel storage:

A. In VFO mode, parameters such as frequency, mode and advanced functional status are adjusted.
B. Press the [MENU] button briefly, switch to the third page menu, select the [MW] function, start channel storage operation.
C. Rotate the encoder to select the channel number to be stored. Press the [YES] button shortly to complete the channel storage.
D. If the current channel has stored the information and used this channel number to store again, the previous channel information is cleared and the current channel information is saved.

Adjust storage channel:

A. If in VFO mode, press the [V/M] button on the panel, it will enter the channel mode.
B. Rotate the encoder to switch the current channel.

Clear channel storage:

A. In the channel mode, press the [MENU] button, switch to the third page menu, press the MC function key, start clear channel function.
B. At this point, the channel number starts flashing. Rotating encoder to the corresponding channel number, press [YES] button shortly, you can complete the channel removal.

3.25 Channel naming

The stored channels can be named with the labels of letters and numbers.

Operation method:

A. Bring up the channel you want to name.
B. Press the [MENU] button shortly, switch to the third page menu, press the [TAG] button for 2 seconds, and then release it into the text editor.
C. In the text editor, under the screen to provide text editing tools used, press the corresponding function button to enable the corresponding function.
D. After editing, press the [SAVE] button to save the set text content and return to the normal operation state.

E. In the channel mode, press the [TAG] button shortly, you can switch between the channel number /user-defined channel name.

3.26 Boot interface call sign setting

This machine can set up the call sign information displayed on the boot interface, as follows:

● Press [MENU] button shortly, switch to page 5 menu, select [CSN] function, enter the call sign editor.
● In the editor, the bottom of the screen to provide text editing tools used, press the corresponding function button to enable corresponding function.
● After editing, press the [SAVE] button to save the set text and return to normal operation.
● When you start the machine again, the boot screen will display your edited text message.

4. System menu operation

The System Settings menu allows you to personalize the transceiver to better suit your usage habits.

Operation method:

● Press the [MENU] key for 1 second and enter the system settings menu;
● Press the [<] and [>] key buttons below the screen to bring up the menu items you want to set.
● Press the [<] and [>] button on the board below and rotate the encoder to set the number you want.
● After setting, press the [YES] button to save the current settings and exit the menu mode.

*In the fourth step, if the [NO] button is pressed shortly, the new settings will not be saved and the system menu mode will be exited.

System menu specification

	Menu item	Functional description	Set value	Default value
01	RF GAIN	Receive RF gain	0~100%	65%
02	CW T/Rx Delay Time	CW transmit delay	0~5000ms	200ms
03	CW RX Side Tone	CW receiving side tone	50~1200Hz	800Hz
04	Tx AF Gain SSB	MIC gain in SSB mode	0~100%	
05	Tx AF Gain AM	MIC gain in AM mode	0~100%	50%
06	Tx AF Gain NFM	MIC gain in NFM mode	0~100%	100%
07	RX AF Gain SSB	SSB mode receiving audio gain	10~100%	40%
08	RX AF Gain AM	AM mode receiving audio gain	10~100%	90%

09	RX AF Gain NFM	NFM mode receiving audio gain	10~100%	90%
10	LCD Backlight Level	Screen backlight adjustment	0~100%	80%
11	Ref Clock	System reference clock	26000000Hz	Don't adjustment！
12	NFM TX IF	NFM mode transmit IF	10697000Hz	Don't adjustment！
13	Outband TX	Amateur band transmit control	Disable / Enable	Disable
14	Misc Option	Digital baseband configuration	0x7A5C3360 / 0x59A03360	
15	Beep Volum	system volume	1~7	4
16	AUX AFIN Volum	ACC port input volume	0~7	7
17	AUX AFOUT Volum	ACC port output volume	0~31	3
18	User Key F1	Manual F1 button customize	/	TS-
19	User Key F2	Manual F2 button customize	/	TS-
20	Ext MIC Bias	External MIC bias setting	Disable / Enable	Enable
21	Reset ALL	Reset all system parameters	No / YES	No

* The default parameter ensures that the transceiver operates in a better state. You can also set up the transceiver according to your own habits.

5 Restore factory settings:

When the system parameter setting error causes the host unable to work, you can reset the transceiver using the "restore factory" function, and then all the data set on the transceiver will be cleared.

Operation method:

Select [Reset ALL] menu, adjust to "YES", and press the [YES] button below the screen.

6 Connection and operation with computer aided control system

6.1 PSK communications and wiring instructions

X5105 transceiver can be connected with the computer, using the corresponding computer software to complete the PSK communication.

Operation method:

A. From the ACC port (MINI-DIN8), the computer audio output / input is connected to X5105.

B. Use the data cable to connect the CIV port of the X5105 with the computer and ensure the driver is installed correctly. The PC software can control the X5105 transceiver.

C. Adjust the volume of X5105, ACC port input / output volume to the right, observe the software interface, to avoid the audio amplitude is too large can not communicate.

* In order to prevent interference, the radio and computer must be grounded well. Please install EMC magnetic ring for the data line and audio line, and install it as close as possible to the host of the radio.

The X5105 uses the standard CIV instruction set. You can use it to remotely control the transceiver, you can also control the X5105.

6.2 Band data format

The ACC port of the X5105 provides band data for each band. The band data can be used to control the peripheral, to make automatic band switching, or to identify the band information for other devices.

Band	Voltage	Band	Voltage	Band	Voltage	Band	Voltage
1.8MHz	230mV	7MHz	920mV	18MHz	1610mV	28MHz	2300mV
3.5MHz	460mV	10MHz	1150mV	21MHz	1840mV	50MHz	2530mV
5.0MHz	690mV	14MHz	1380mV	24MHz	2070mV	/	

After-sales service policy

1. Warranty:

This product has two years warranty effective from the date of purchase. This warranty covers only manufacturing- and parts defects. It does not cover damage caused by lightning, excess voltage on the power supply, accidental damage or purposeful damage or misuse.

If the product needs warranty repair within two weeks of receiving the product, XieGu will pay for the shipping both ways. After two weeks XieGu will pay only for return shipping.

If the product is not covered under warranty, the customer pays for shipping both ways plus the cost of the repair.

2. Warranty limitations:

Any of the following will void the warranty applicable to the product and its accessories:

A. Modification-, removal-, or maintenance of the internal circuitry, without permission and authorization;

B. Unauthorized change of product's embedded software;

C. Immersion in liquid or signs of external damage;

D. Warranty period expired;

E. Product's serial number is missing, torn or blurred so we cannot determine if the radio is under warranty;

F. Product was not bought from XieGu or authorized distributor of XieGu.

*None of the following conditions, are covered by the warranty:

A. Damage caused by improper use by the user；

B. Damage caused by an accident；

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

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

E. Damage to the shell or other external components due to improper use.

Contact us: service@cqxiegu.com

Xiegu communication

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