MOONRAKER

TITAN

10 METRE MOBILE TRANSCEIVER

USER MANUAL

Table of contents

NOTICE

It is recommended to carefully read this owner's manual before using the product.This will also help the user to prevent using the radio in violation of the regulations valid in the country where the product is used,as well as to avoid any possible interferences with other services. This radio is an Amateur Radio HF transceiver; designed to work on the 28 MHz frequency band reserved to Amateur Radio communication.This transceiver has been manufactured and factory programmed, in order for the user to operate the radio immediately after purchase. The radio covers the 28 MHz (10&12-Meter) Amateur Radio HF frequency band (frequency range 28.000-29.700 MHz). The manufacturer is not responsible any modification to the hardware or software of the product, which might possibly cause the radio to operate illegally and/or out of this frequency range.

Features, specifications, and availability of optional accessories are allsubject to change without notice..

Our Thanks to You

Thank you for purchasing our radio. Properly used, this product will give you many years of reliable service.The radio is a is a 10-Meter band Amateur Radio transceiver using advanced hardware and software design radio which provides you with top performance. With the use of SMT technology to guarantee the best stability, reliability and unprecedented quality.

IMPORTANT

READ ALL INSTRUCTIONS

Carefully and completely before using the transceiver.

SAVE THIS INSTRUCTION MANUAL

This instruction manual contains important oper ating instructions for the T-RANSCEIVER.

EXPLICIT DEFINITIONS

WORD	DEFINITION
⚠WARNING	Personal injury, fire hazard or electric shock may occur.
CAUTION	Equipment damage may occur.
NOTE	If disregarded, inconvenience only. No risk of personal injury, fire or electric shock.

PRECAUTIONS

WARNING! NEVER connect the transceiver to an AC outlet. This may pose a fire hazard or result in an electric shock.

WARNING! NEVER operate the transceiver while driving a vehicle. Safe driving requires your full attention—anything less may result in an accident.

NEVER connect the transceiver to a power source of more than 13.8 V DC. This will damage the transceiver.

NEVER connect the transceiver to a power source using reverse polarity. This will damage the transceiver.

NEVER cut the DC power cable between the DC plug and fuse holder. If an incorrect connection is made after cutting,the transceiver may be damaged.

NEVER expose the transceiver and microphone to rain,snow or any liquids. The transceiver and microphone may be damaged.

NEVER operate or touch the transceiver and microphone with wet hands. This may result in an electric shock or damage the transceiver and microphone.

NEVER place the transceiver where normal operation of the vehicle may be hindered or where it could cause bodily injury.

DO NOT push the PTT when not actually desiring to transmit.

DO NOT allow children to play with any radio equipment containing a transmitter.

DO NOT operate the transceiver for extended periods without running the vehicle's engine. The transceiver's power consumption may soon exhaust the vehicles battery.

DO NOT use or place the transceiver in direct sunlight or in areas with temperatures below −10°C or above +60°C.

DO NOT set the transceiver in a place without adequate ventilation. Heat dissipation may be affected, and the transceiver may be damaged.

DO NOTt use the chemical agents such as benzine or alcohol when cleaning, as they can damage the transceiver's surfaces.

1. WHERE AND HOW TO MOUNT YOUR RADIO

a) You should choose the most appropriate setting from a simple and practical point of view.

b) Your radio should not interfere with the driver or the passengers.

c) Remember to provide different wires for passing and protection. (e.g.:power, antenna, accessory cabling) so that they do not in any way interfere with the driving of vehicles.

d) To install your equipment, use the cradle (1) and the self-tapping screws [2] provided (drilling diameter 5 mm). Take care not to damage the vehicle's electrical system while drilling the dash board.

e) Do not forget to insert the rubber joints [3] between the radio and its support as these have a shock-absorbing effect which permits gentle orientation and tightening of the set.

f) Choose where to place the microphone support and remember that the microphone cord must stretch to the driver without interfering with the controls of the vehicle.


Port E is used for connect to microphone by connect cable
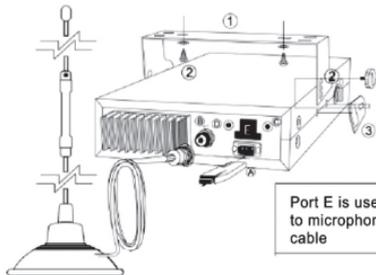
ANTENNA INSTALLATION

• Antenna location

To obtain maximum performance from the transceiver, select a high-quality antenna and mount it in a good location.

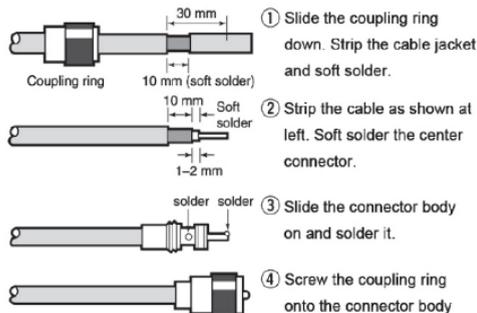A non-radial antenna should be used when using a magnetic mount.

Roof-mount antenna
(Drill a hole or use a magnetic mount.)

Gutter-mount antenna

Trunk-mount antenna
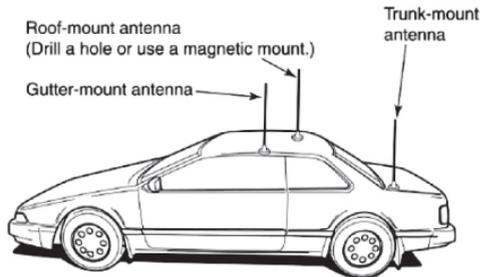
ANTENNA INFORMATION

For radio communications, the antenna is of critical importance, to maximize your output power and receiver sensitivity. The transceiver accepts a 50 Ω antenna and less than 1:1.5 of Voltage Standing Wave Ratio (VSWR). High SWR values not only may damage the transceiver

Antenna connector

The antenna uses a PL-259 connector.

• PL-259 CONNECTOR

① Slide the coupling ring down. Strip the cable jacket and soft solder.

② Strip the cable as shown at left. Soft solder the center connector.

③ Slide the connector body on and solder it.

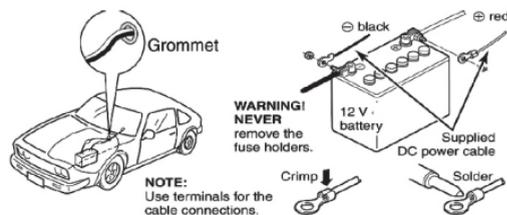④ Screw the coupling ring onto the connector body

NOTE: There are many publications convering proper antennas and their installation. Check with your local dealer for more information and recommendations.   Connects a 50Ω antenna with a PL-259 connector and a 50 Ω coaxial cable.

Battery connection

WARNING NEVER remove the fuse holders from the DC power cable.

DO NOT use the cigarette lighter socket for power connection. Attach a rubber grommet w-hen passing the DC power cable through a metal plate to prevent a short circuit.

Connecting to a DC power source

Grommet

WARNING! NEVER remove the fuse holders.

NOTE: Use terminals for the cable connections.

⊖ black   ⊕ red

12 V battery

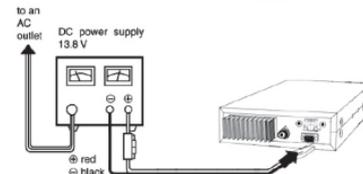Supplied DC power cable

Crimp   Solder

DC power supply connection

WARNING NEVER remove the fuse holders from the DC power cable.

Use a 13.8 V DC power supply with at least 10 A capacity. Make sure the ground terminal of the DC power supply is grounded.

Connecting to a DC power supply

to an AC outlet   DC power supply 13.8 V

⊕ red
⊖ black

CONTENT OF THE PACKAGING

Please check that all the following items are contained in the packaging :

Main unit (transceiver)

>DC power cord with fuse holder and fuse

>Dynamic microphone

>Car mounting bracket

>Car mounting bracket accessories (hardware, knobs, etc.)

>Microphone bracket

>Owner's manual

> one connect cable from microphone to back side of radio

RESET FUNCTION (Resume Factory Default)

This Radio introduces RESET FUNCTION to prevent accidents and provide a solution for customers who changed some functions unconsciously and do not know how to resume normal settings. The Radio will resume factory default once this function is activated.

How to Operate:

Step 1: Power off the radio.

Step 2: Press and hold FUNC and DW keys at the same time, followed by powering on the radio.

Step3: Release the two keys when LCD displays "RES". All former settings would be replaced by Factory Default value when LCD displays "REND" it will take about 10 seconds.

WARNING: All former settings would be replaced by Factory Default value after operating the RESET FUNCTION.
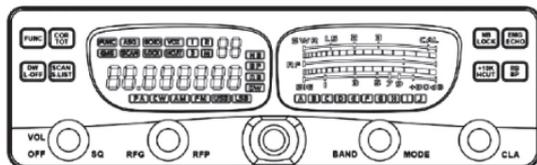
BAND

Band 10: 28.000-29.700MHz

Band 12H: 24.500-26.405MHz

Band HF: 25.615-30.105MHz

Band CB: EU MULTI BAND

Noted: Only Band 10 allow to use in Europe

How to select Band

1. Press and hold "EMG" "RB" "PTT of MIC speaker" keys and turn on the radio to enter the band select system

2. Then use "DN"/"UP" keys to select band, finally push "PTT" button to enter

How to operate when radio in the Menu status

Press " FUNC " key 2 seconds then the radio enter the menu system then rotate the channels knob to change the menu, and when rotate CLA knob, it is able to chage the parameter at current menu.

FUNCTIONS AND FEATURES

1. PA, CW, AM, FM, USB, LSB modes
2. SWR METER AND DUAL-DIGITAL TUBE FOR CHANNEL DISPLAY
3. USE TCXO technology
4. Two Big LCD which displays frequency and all kinds of information
5. 6 bands in total, with 40 channels at most in each band to be programmed.
6. Frequency Tuning Step can be 10Hz, 100Hz, 1KHz or 10KHz.
7. Multiple CLARIFIER Operating Modes
8. ECHO Function
9. MIC GAIN AND RF GAIN AND RF PWR ADJUSTMENT
10. SCAN FUNCTION
11. RB FUNCTION
12. NB/ANL FUNCTION
13. DW DUAL-WATCH FUNCTION
14. BEEP VOICE PROMPT
15. +10KHZ Function
16. SWR, S/RF, DC Voltage display function
17. TOT function
18. HI-CUT FUNCTION
19. EMG CALL
20. SWR PROTECTION
21. POWER SUPPLIED VOLTAGE PROTECTION
22. Key-Lock Function
23. SQ, Function
24. Noise Cancelling

BASIC OPERATIONS TO BE CARRIED OUT BEFORE USING YOUR SET FOR FIRST TIME (without transmitting or using the <<Push-To-Talk>> switch on the microphone)

a) Connect the microphone;   b) Check the antenna connections;
c) Turn the set on by turning the volume knob clockwise; d) Turn the squelch knob to minimum; e) Adjust the volume to a comfortable level; f) Go to channel 20@D band by using either the UP or DN key on the microphone or the rotary knob.

ADJUSTMENT OF SWR (Standing Wave Radio)

WARNING: This must be carried out when you use your radio for the first time (and whenever you re-position your antenna). The adjustment must be carried out in an obstacle-free area.

Adjustment with a built-in SWR meter or external SWR meter

a) To connect the SWR meter

Connect the SWR meter between the radio and the antenna as close as possible to the radio (use a maximum of 40cm cable).

b) To adjust the SWR meter

- Set the radio to channel 20@D band in FM.
- put the switch on the SWR meter to position CAL or FWD.
- Press the <<Push-To-Talk>> switch on the microphone to transmit.
- Bring the index needle ▼ to by using the calibration key.
- Change the switch to position SWR (reading of the SWR level).

The reading on the meter should be as near as possible to 1. If this is not the case, re-adjust your antenna to obtain a reading as close as possible to 1.(An SWR reading between 1 and 1.8 is acceptable).

- It will be necessary to re-calibrate the SWR meter after each adjustment of the antenna.

CONTROLS AND OPERATION

<LCD DISPLAY>
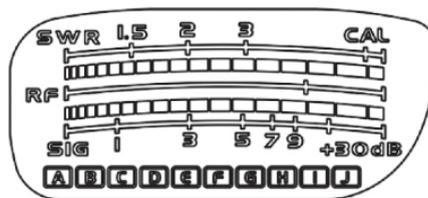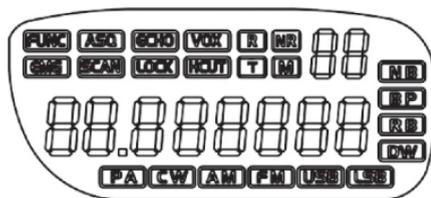
1. Eight digits display frequency and any other information.
2. FUNC : Appears after pressing FUNC key.
3. BEEP : Appears when BEEP function is started (enabled).
4. SCAN : Appears after pressing SCAN key.
5. R.B : Appears after pressing R.B key.
6. EMG : Appears after pressing EMG key..
7. ASQ : Appears after pressing ASQ key (Optional).
8. ECHO : Appears after turn on ECHON knob.
9. DW : Appears after pressing DW key.
10. VOX : Appears after pressing VOX key.(Optional)
11. TX : Appears when transmit the radio.
13. The first decimal point : Appears when current channel is edited with SCAN DEL.
14. 1. Appears when CLARIFIER function is FINE operation.
    2. Appears when CLARIFIER FUNCTION is COARSE operation or RT operation.

3. Appears when CLARIFIER FUNCTION is transmitting frequency regulated.

M. When M display on LCD means the radio on MODE status, or the radio the radio on BAND status.

15. NB/ANL : Appears when NB/ANL function is started (enabled).
16. HCUT : Appears when HI–CUT function is started.
17. SWR : Appears when SWR is used.
18. RF : Appears when RF is used..
19. PA, CW, AM, FM, USB, LSB: Indicate different operating modes.
20. A, B, C, D, E, F, G, H, I, J are bands
21. 88 shows the current channel number

7

CONTROLS AND OPERATION
<FRONT PANEL>
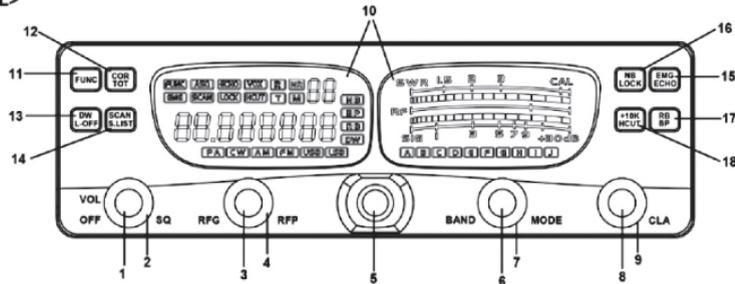
1. OFF/ON/VOLUME (Inner Dual Concentric)

Turn clockwise to switch on the radio and set desired volume level. Under normal operating state, the VOLUME control is used to adjust the output volume obtained either by the transceiver speaker or the external speaker or the external PA speaker, if used.

2. SQUELCH (Outer Dual Concentric)

This control is used to cut off or eliminate receiver background noise in the absence of an incoming signal. For maximum receiver sensitivity, it is desired that the control be adjusted only to the point where the receiver background noise or ambient background noise is eliminated. Turn fully anticlockwise then slowly clockwise until the receiver noise disappears. Any signal to be received must now be slightly stronger than the average received noise. Further clockwise rotation will increase the threshold level which a signal must overcome in order to be heard. Only strong signals will be heard at a maximum clockwise setting.

3. RF GAIN (Inner Dual Concentric)

This switch is for adjusting sensitivity during reception. For long distance communications RF GAIN should be set to maximum. RF GAIN can be reduced to avoid distortion, when your correspondent is close by and when he does not have RF POWER. The normal setting of this function is on maximum (fully clockwise).

4. RF POWER (Inner Dual Concentric)

Adjustment of the output power is for AM and FM mode only. Reducing the power is allowed when communicating with a person who has no RF GAIN. The normal position of this function is set to maximum, fully clockwise.

5. CHANNEL SELECTOR

Rotate this switch to select any desired channel from eighty citizens band channels.

CONTROLS AND OPERATION
<FRONT PANEL>
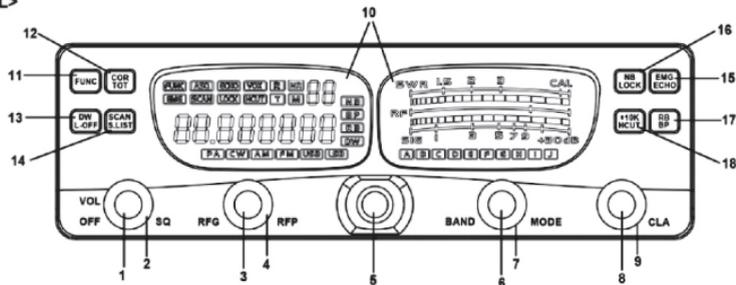
6. BAND SELECTOR

Rotate this switch to select A, B, C, D, E, F, G, H, I, J band of operation

7. MODE (PA/CW/AM/FM/USB/LSB)

This switch allows selecting the modulation mode PA, CW, AM, FM, LSB or USB. Your modulation mode has to correspond with the one of your correspondent. The mode selector changes the mode of operation of both transmitter and receiver simultaneously.

Frequency Modulation/FM: for nearby communications on a flat open field.

Amplitude Modulation/AM : Communication on a field with relief and obstacles in middle distance (the most used).

Upper and Lower Side Band/USB-LSB : Used for long distance communications (according to the propagation conditions).

NOTED: PUSH THE SELECTOR TO SWITCH THE BAND OR MODE, WHEN LCD DISPLAY "M" MEANS AT MODE STATUS

8. CLARIFIER

This is frequency tuning knob which can be set as different modes (refer to CLA Specifications in Functions Menu for more details).

9. PUSH

This is PUSH Key which can be set as different modes (refer to PSH specifications under Functions Menu for more details).
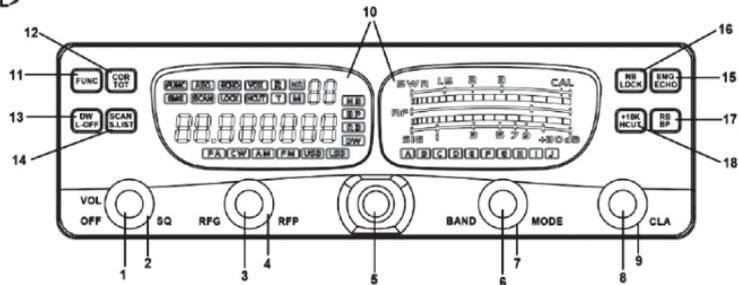
10. LCD DISPLAY

Display frequency, all kinds of information and icons.

11. FUNC

This is functional key. Press and hold this key for 2 seconds to enter into Functions Menu Setup (refer to Functions Menu for more details).

Press FUNC key and other individual key to realize the second functions silk-screened under the button. For example, press FUNC key followed by pressing RB key to realize the BP function. Press FUNC key followed by DW to realize the LCD OFF function.

9

CONTROLS AND OPERATION
<FRONT PANEL>

12. COR/TOT

This COR key is able to change LCD display color, the radio have seven colors, you can select them by this key.

FUNC + TOT: it is able to switch the TOT function ON or OFF.

13. DW or LCD OFF

(1)The DW (dual watch) function allows automatic alternate monitoring of two channels. Refer to the following procedures to enable this function. To enable the DW function, firstly turn the SQ control clockwise until the background noise is cut out. Select the first channel to be monitored by using the CHANNEL SELECTOR knob or the channel selector keys on the microphone. Press the DW key and the DW icon will flash on the LCD display. Secondly, follow the above procedures to select second channel to be monitored. Finally, press the DW key again and the two monitoring channels will be alternately indicated on the LCD. Radio will automatically start monitoring (scanning) the two channels. When a signal is detected on one of the channels, scanning stops and it is possible to listen to the communications on that channel. Press PTT to transmit on this channel. If there is no transmission or detected signal on that channel within 5 seconds(time to resume scanning can be programmed by PC software), radio will resume scanning. When the DW function is enabled, the DW icon appears on the LCD. To exit the DW function, press the DW key or the PTT key. The scan Type above is the SQ mode under SCA Selection in Function Menu. If TI mode is selected and valid signal is detected, the radio would still start scanning when it is time to resume scanning, whether there is signal or not in current channel.

(2) FUNC+DW

When this function is enabled, LCD display would be switched OFF(LCD OFF). Repeat this operation to switch ON/ OFF the function.

CONTROLS AND OPERATION
<FRONT PANEL>
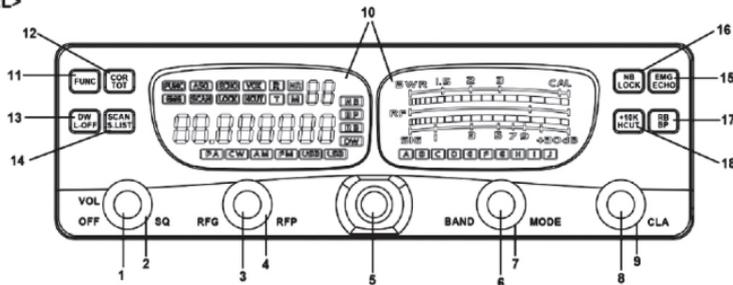
14. SCAN OR S.LIST

(1) SCAN

Automatic Scanning of busy channels.

Press the SCAN key to enable the SCAN function. Before enabling the SCAN function, firstly turn the SQ control clockwise till the background noise is cut out. Then press the SCAN key, radio will automatically scan all channels continuously in the scan list and the SC icon will appear on the LCD. When a signal is detected on a channel, scanning stops on this channel. You can receive the calling, and also, can transmit on this channel by pressing PTT key. If there is no transmission or detected signal on that channel within 5 seconds(time to resume scanning can be programmed by PC software), radio will start scanning again. To exit the SCAN function, press the SCAN key or the PTT key. The Scan Type above is the SQ mode under SCAN Selection in Function Menu. If mode is selected and valid signal is

detected, the radio would still start scanning when it is time to resume scanning, whether there is signal ornot in current channel.

(2) FUNC+SCAN

SC.LIST (Scan ADD or Delete). Press FUNC+SCAN to delete current channel from scan list. The first digit on LCD would display. When Scan function is enabled, the radio would skip the deleted channel. Repeat this operation to Add or Delete channels from scan list.
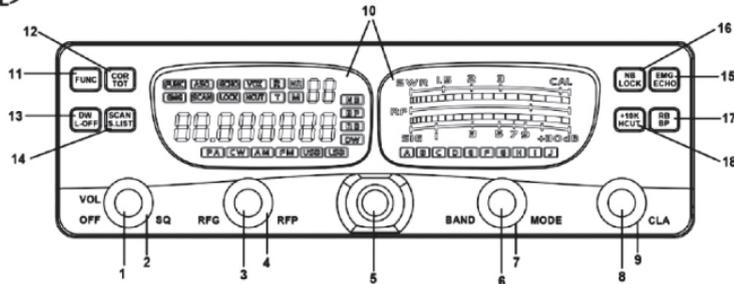
15. EMG

(1) EMG realizes Emergency Channel Call. When emergent situation happens, the radio would switch to the channel set in advance to communicate immediately. Then the "EMG" icon would display on the LCD . Press EMG key again to return to previous channel.

(2) FUNC+EMG

Press this key, it is able to open or close ECHO function

CONTROLS AND OPERATION
<FRONT PANEL>

16. NB/ANL or LOCK

(1) Press NB/ANL key to enable NB/ANL function with "NB/ANL" icon appearing on the LCD display. Press the key repeatedly to switch on/ off the function.

Noise Blanker/Automatic Noise Limiter. These filters allow reducing back ground noises and some reception interferences.

(2) FUNC+NB/ANL

Press FUNC+NB/ANL to realize the Keyboard Lock function. When this function is enabled, all keys are invalid except PTT, BAND SWITCH, and MODE SWITCH. When pressing any key except PTT, BAND SWITCH, MODE SWITCH, the LOCK icon will display on the LCD. These situations indicate that the keyboard has been locked.

Press FUNC+NB/ANL repeatedly to switch on/off the function.

17. +10KHZ or HI-CUT

(1) +10KHZ Press this key to shift frequency up by 10khz.

When pressing this key, 10KHZ would appear on LCD and frequency of channels is shifted up by 10 KHZ. Repeat this operation to switch ON/OFF this function.

(2) FUNC+ +10KHZ

Press FUNC+10KHZ to realize HI-CUT function. Once this function is

18. ROGER BEEP OR BEEP FUNCTION

(1) RB Press "RB" key to enable "ROGER BEEP" function with "RB" icon appearing on LCD display. Press the key repeatedly to switch on/off the function. When RB function is enabled, the radio will automatically transmit the audio signal at the end of your transmission. The listener can note easily that your transmission is over through the signal.

(2) FUNC+RB Press FUNC+RB to realize BP Function. It is a prompting function with "BP" icon appearing on LCD display. Speaker would emit a BEEP for prompting when press any key. press FUNC+RB repeatedly to switch on/off the function.

12

<REAR PANEL>
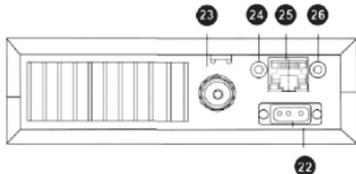
22. POWER

Accept 13.8VDC power cable with built-in fuse (10 Amp) to be connected.

23. ANTENNA

Accept 50 ohm coaxial cable with a type PL-259 plug to be connected.

24. CW KEY

This jack is for Morse code operation; to operate, connect a CW key to this jack and place the MODE switch in the CW position (LCD display icon "CW")

25. Microphone port

This port can be used for Microphone

26. EXT SP or PA SP

EXT SP

Accept 4 to 8 ohm, 4 watt external speaker to be connected. When external speaker is connected to this jack, the built-in speaker is automatically disconnected.

PA SP

It is used to connect a PA speaker. Before operating PA, you must firstly connect a PA speaker to this jack.

FUNCTION MENU SETUP

The initial functions and parameter can be changed via the following settings and operations. Please read the following instruction before making any desired amendments.

To enter Function Menu: under ON state, press and hold FUNC key for more than 2 seconds, and then release the FUNC key to enter into the Function Menu Setup. Under this condition, press FUNC key to select different functions menu, CHANNEL SELECTOR Switches to change the data of Function Menu.

(1) Echo-TIME
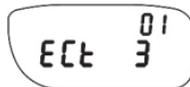
This menu is used to set the adjustment level by turning the "MODE" knob, there are "1-5 levels";This is to set the delay time of the echo.

(2) Echo-"Deep"

This menu is used to set the adjustment level by turning the "MODE" knob, there are "1-5 levels";This is to set the depth of the echo
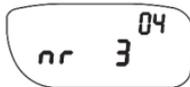
13

(3) NR（On/Off）

```
        03
  nr oFF
```

This menu is used to set noise reduction to be turned on or
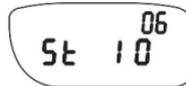off by the "MODE" knob;

（4）NR LEVEL

```
       04
  nr  3
```

This menu is used to set the noise reduction level from "1 to 6"
adjusted by turning the "MODE" knob;

(5) UOS (Mute Switch)

```
        05
  UOSoFF
```

This function will be treated as mute when the received volume
is less than a certain level.
This menu is used to set the speaker volume to be turned on or
off by the "MODE" knob.

（6）STP(Frequency Tuning Step)

```
        06
  St  10
```

This menu is to set tuning step when adjusting frequency
by MODE knob
Options:5 Hz,100 Hz,1 KHz,10 KHz
Default:5Hz

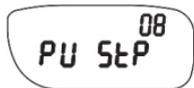**(7) RT(transmitting and receiving)**

```
        07
  CL  rt
```
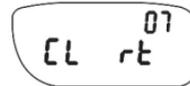
This menu is to set functions turned by CLA knob.
Options are as RT When this option is selected, users can
regulate the frequency of both transmitting and receiving.
In tuning process, "2" icon will appear on the LCD.

14

(8)PUS(PUSH Function Setting)

$$PU \; StP \quad {}^{08}$$

This menu is to set functions realized via PUSH knob.Options are as follows:
COA:When this option is selected press PUSH and turn CLARIFIER knob to realize COARSE function.
When pressing this key,"2"icon will appear on far left of the LCD.
Under this condition rotate the CLARIFIER knob to change frequency of both transmitting and receiving.
T:When this option is selected press PUSH and turn CLARIFIER knob to change transmitting frequency.When pressing this key,"3"icon will display on the far left of the LCD.Under this condition rotate the CLARIFIER knob to change the transmitting frequency only.
STP:When this option is selected PUSH function will change Frequency Tuning Step of CLARIFIER knob. Press this key,then the corresponding frequency bit would blink.
Default:STP

(9) ASQ(Automatic Squelch Control)

$$AS \; oFF \quad {}^{09}$$

ASQ control setting. It has same function with AQ button on the microphone.
Default:OFF

(10) TOT (Time-Out-Timer)

$$to \; oFF \quad {}^{10}$$

This menu is to turn on/off TOT time via MODE knob

(11) SC Scanning Type Selection

$$SC \; S9 \quad {}^{11}$$
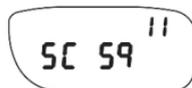
This menu is to set Scan Type.Options are as follows:
SQ:When SQ is selected scan would stop when a valid signal is
detected. The radio would resume scanning after signal disappears
for 5s.
TI:When TI is selected,scan would stop when a valid signal is detected
The radio would resume scanning 5 seconds later whether signal
disappears or not.
Default:SQ

15

(12) CW (SWR Protection)

```
      12
Ct on
```

This menu is used to set SWR Protection to be turned on
or off by the "MODE" knob;

(13) AM(AM SWR Protection)

```
      13
At on
```

This menu is used to set AM SWR Protection to be turned
on or off by the "MODE" knob;

(14) FM (FM SWR Protection)

```
      14
Ft on
```
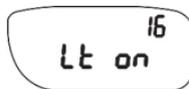
This menu is used to set FM SWR Protection to be turned on
or off by the "MODE" knob;

(15) USB(USB SWR Protection)

```
      15
Ut on
```

This menu is used to set USB SWR Protection to be turned
on or off by the "MODE" knob;

(16) LSB(LSB SWR Protection)

```
      16
Lt on
```

This menu is used to set LSB SWR Protection to be turned
on or off by the "MODE" knob;

(17) TDC(Power Supplied Voltage Protection)

```
        17
  dC  on
```

This menu is to choose whether to enable Power supplied Voltage
Protection function or not.
ON:When ON is selected the radio will detect the supplied voltage.
Once the voltage surpasses the voltage setup in advance,the radio
would display"DC LO" or "DC HI" to remind you that the voltage is
not in normal state.Meanwhile,the radio will prohibit transmitting
and emit beep prompt.
OFF:When OFF is selected the Power Supplying Voltage is disabled
Default:ON(DC10.5V-16V)

(18) TLD(Content displayed on the LCD when transmitting)

```
        18
  td  tF
```

This menu is to set the content displayed on the LCD when transmitting
TF:When TF is selected LCD would display transmitting frequency
when transmitting.
SR:When SR is selected.LCD would display SWR value of antenna
when transmitting,for example:"1.2" on the LCD.
BAT:When BAT is selected LCD would display Supplied Voltage
when transmitting,for example:"13.8DC" on the LCD.
TOT:When TOT is selected LCD would display TOT remaining time
when transmitting. And TOT would count down till remaining time is
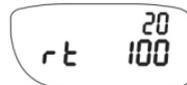0,forexample: "170" displayed on the LCD display.
Default:TF

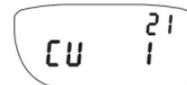**(19) RB (ROGER BEEP Frequency Setting)**

```
        19
  r b  2000
```
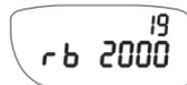
This menu is to select frequency of Roger Beep.The
frequency range is 300KHz-3KHz.The shift step is 10Hz
Default: 2000Hz

(20) RBT(ROGER BEEP Holding Time)

```
        20
  r t  100
```

This menu is to select Roger Beep Holding
Time from 50ms-1000ms.
The shift step is 50ms.
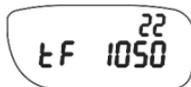Default:500ms

(21) CPT(CW transmission power)

```
        21
  CU  1
```

This menu is to adjust the transmission power
of the CW signal, ranging from level 1 to level 4;
Default: 1

17

(22) TON(Transmitting Single-Tone Frequency)

```
        22
 t F  1050
```

This menu is to select Transmitting Single-Tone
Frequency from 300Hz-3KHz.The shift step is
10 Hz.Default:1050Hz

(23) TALK BACK FUNCTION，on/off
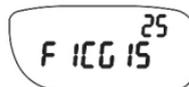
```
        23
 t b  oFF
```

This menu is used to set TALK BACK FUNCTION to be
turned on or off by the "MODE" knob;

(24) MIC gain level selection in AM mode

```
        24
 A IC G  15
```

This menu is used to set MIC gain level selection in AM mode
to be adjusted by the "MODE" knob;

(25) FM mode mic gain level selection

```
        25
 F IC G  15
```

This menu is used to set MIC gain level selection in FM
mode to be adjusted by the "MODE" knob;

(26) USB mode mic gain level selection

```
        26
 U IC G  15
```
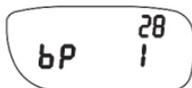
This menu is used to set MIC gain level selection in USB
mode to be adjusted by the "MODE" knob;

(27) LSB mode mic gain level selection

```
        27
 L IC G  15
```
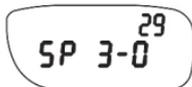
This menu is used to set MIC gain level selection in LSB
mode to be adjusted by the "MODE" knob;

18

(28) BEU

```
       28
 bP     1
```

This menu is to set the volume of prompt voice. 4 grades in total.Default: 1

(29) SWR protection value setting

```
       29
 SP  3-0
```

This menu is to select SWR protection value setting from 1.1 to 20. Default: 5.0
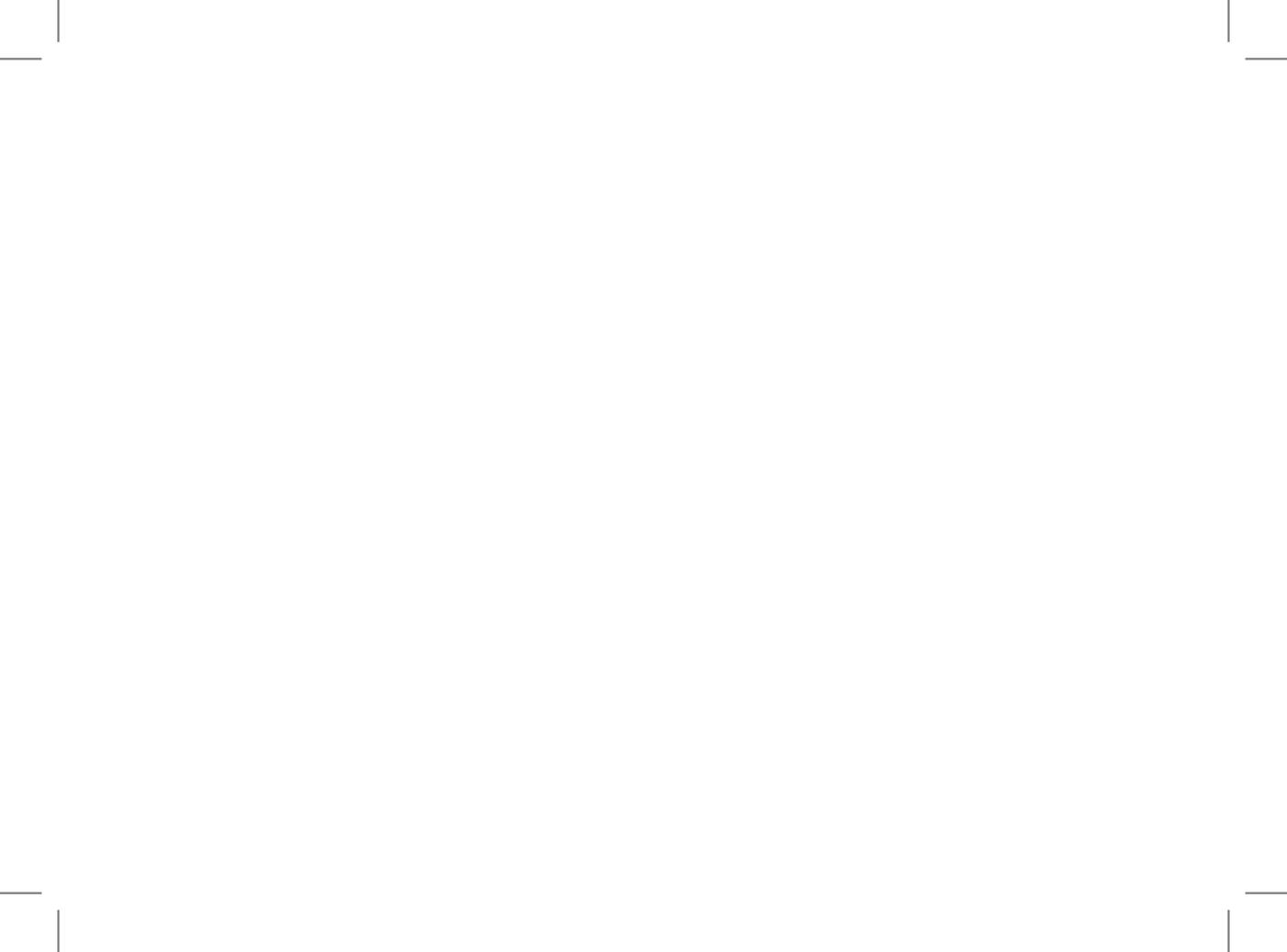
GENERAL

Frequency	28.000 - 29.700 MHz (24.500 - 30.105 MHz) (*)
Frequency Bands	A/B/C/D/E/F/G/H/I/J
Channels	40 Channels (programmable) in each band
Frequency Control	Phase-Locked-Loop Synthesizer
Frequency Step	10 Hz - 100 Hz - 1 KHz - 10 KHz
Frequency Tolerance	0.005%
Frequency Stability	0.001%
Temperaure Range	-30°C to +50°C
Microphone	Plug-in Dynamic with PTT / UP / DN switch and coiled cord
Input Voltage	13.8V normal / 15.9V max. / 11.7V min.
Current	Drain 5A (TX AM Full Mod.) / 9A (SSB 30W PEP) 0.6A (RX Squelched)
Size / Weight	17.5 x 18.2 x 5.3 cm / 1.5 Kg.
Antenna Connector	UHF, SO239

TRANSMITTER

RF output power	AM:12W FM/SSB/CW:40W
Modulation	High and Low level Class B Amplitude Modulation : AM Varied Capacitance Frequency Modulation : FM
Inter-modul. Distorsion	SSB : 3rd order, more than -25dB 5th order, more than -35dB
SSB Carrier Suppr.	55dB
Unwanted Sideband	50dB
Frequency Response	AM and FM; 450 to 2500Hz
Impedance	50 Ohm, unbalanced

RECEIVER

Sensitivity (12dB Sinad)	SSB : 0.25μV for 10dB (S+N)/N at greater than 1/2W of audio output AM : 1.0μV for 10 dB (S+N)/N at greater than 1/2W of audio output FM : 1.0+μV for 20 dB (S+N)/N at greater than 1/2W of audio output
Selectivity	AM/FM : 6dB at 3 KHz / 50dB at 9KHz SSB : 6dB at 2.1 KHz / 60dB at 3.3KHz
IF Frequency	AM/FM : 10.695 MHz 1st IF, 455 KHz 2nd IF SSB : 10.695 MHz
Adjacent Channel	60dB AM/FM / 70dB SSB
RF Gain Control	45dB adjustable for optimum signal reception
Autom. Gain Control (AGC)	Less than 10dB change in audio output for inputs from 10 to 100,00 μV
Squelch Adjustable;	threshold less than 0.5μV.
Automatic Squelch Control	(AM/FM only) 0.5μV
ANL	Switchable
Noise Blanker	RF Type, efecctive on AM/FM and SSB
Audio Output Power	3W into 8 Ohm
Frequency Response	300 to 2800 Hz
Built-in Speaker	8 Ohm, round.
External Speaker	8 Ohm; disables internal speaker when connected (not supplied)

MOONRAKER

Moonraker Group Limited MK17 8UR UK
www.moonrakeronline.com