Radioddity

# QT60

## 10 Meter Amateur Radio

# Instruction Manual

Downloaded from www.cbradio.nl

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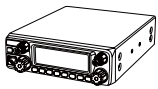
## FUNCTIONS & FEATURES

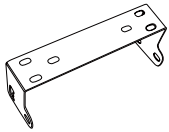
- Big LCD displays frequency and all kinds of information
- FM, AM, USB, LSB, PA mode
- Frequency Tuning Step 100Hz, 1KHz, 5KHz, 10KHz, 100KHz, 1MHz
- ±1.5KHz CLARLFILER Adjustment
- Flexible Menu Function and PC Program Software
- ECHO Function
- SQ, ASQ Function (FM and AM mode only)
- RF GAIN Adjustment
- RF PWR Adjustment
- SCAN Function
- Programmable RB Function
- NB/ANL Function
- DW DUAL-WATCH Function
- Offset Frequency Function
- BEEP Voice Prompt
- +10KHZ Function
- SIG, PWR, SWR Function
- TOT function
- HI-CUT Function
- EMG Channel Function
- SWR Protection
- Power Supply Voltage Protection
- Key-Lock Function
- Six(6) Groups Memory Channel
- Model Name Customized Function
- CTCSS/DCS Code
- VOX Function
- TX and RX Noise Reduction
- Compatible with electronic and dynamic MIC type
- WX weather channel
- Weather Alert

## ■ STANDARD ACCESSORIES



Radio

Microphone



Mounting Bracket

Microphone Hanger

Non-slip Mat

Screws for bracket

Pads for bracket

Adjusting screws

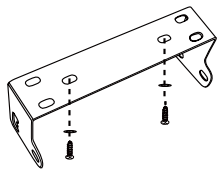
Spare Fuses (10A, 125V)

Self-tapping Screws

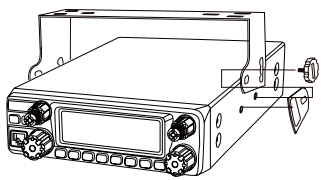
Pads

## ■ INSTALLLATON

Choose the most appropriate setting from a simple and practical point of view. Your radio should not interfere with the driver or crash the driver's knee or leg when rush brake.

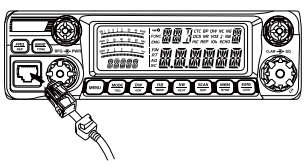


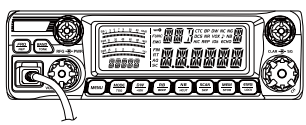
1. Using the self-tapping screws and pads(2 sets) to fix the bracket.
2. Put the Non-slip mat on the 2 ends of the bracket and put in the radio. Then insert the adjusting screws and check careful each screws, make sure the screws and machine will not loose when the car shaking.
3. Choose suitable angle by the 3 screw holes in the two ends of bracket.



**Microphone connection**

1. Plug microphone connector into jack.
2. Pull on the screw for microphone connector.



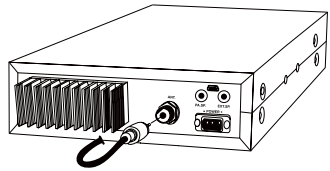


## ANTENNA INSTALLATION

Before using this radio, please install a high efficent and harmonious adjusted CB antenna, suitable antenna type and correct installation will bring excellent communication.

To match with the radio, the antenna and cable shall with characteristic impedance of 50ohm, or the antenna system will not efficient enough and will disturb TV, radio or other electronics.

1. Screw the antenna connector into the antenna jack.
2. Grounding the antenna system to ensure best performance of this radio.



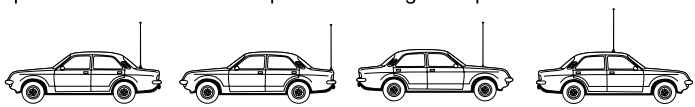
**WARNING:**

▲ Connect antenna firstly before transmiting, or it might damage the radio.

▲ To avoid the risk of fire, electric shock, radio damage, all base station shall equip of lightning protector

▲ Be sure choose a matching antenna, you may enquiry our dealers.

3. The position of antenna can be put as following example:



## POWER CONNECTION

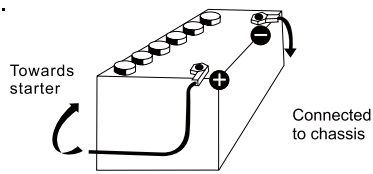
This radio adopt 13.8V power supply, never connect it to 24V battery, And the 13.8V car battery shall with sufficient current, or the LCD will become dark and Transmit power will drop down.

1. Connect positive red power cable with the + terminal of the battery.
2. Connect negative black power cable with the - terminal of the battery.
3. Connect the DC power cable to the transceiver's power supply connector.

▲ We suggest not use cigar lighter as it often bring down the voltage.

▲ Locate the power cable away from high temperature, moisture, portfire and cable insulator.

▲ Use a full power cable even it is longer than need, do not take off the fuse holder from the cable.



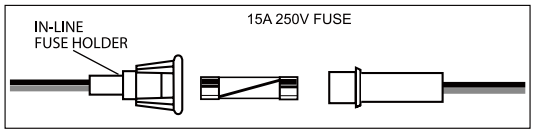
## Replacing Fuse

This radio adopt 15A, 250V fuse.

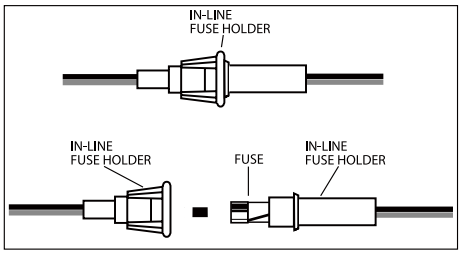
If the fuse blows, determine the reason, then correct the problem.

After the problem is resolved, replace the fuse. If newly installed fuses continue to blow, disconnect the power cable and contact your autho-rized dealer or an authorized servicecenter:

1. Pull the two fuse cover in difference direction and open it.

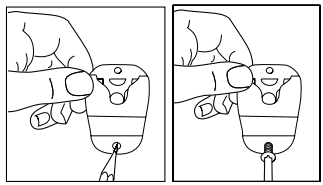



2. Replace the broke fuse with good one, and close the fuse holder.
3. Be sure to use suggested fuse, or it might damage the radio.




## Install Microphone Hanger

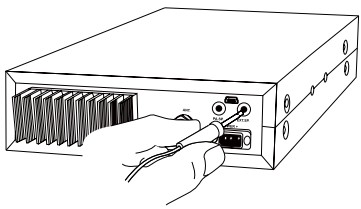
Choose a ideal location which will not interfere the driver. Using supplied self-tapping screws and pads(2 sets) to fix the hanger.



## Install External Speaker

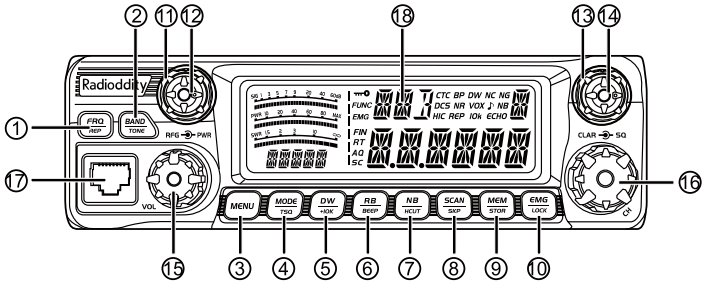
If use an external speaker, please choose 8ohm speaker with 3.50mm mono band (doulbe cable) plug.

1. Locate the external speaker in a suitable place.
2. Plug into the speaker jack.



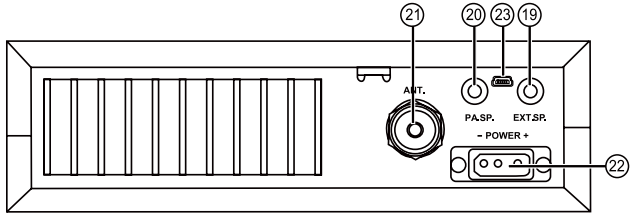
## ■ GETTING ACQUAINTED

### Front Panel



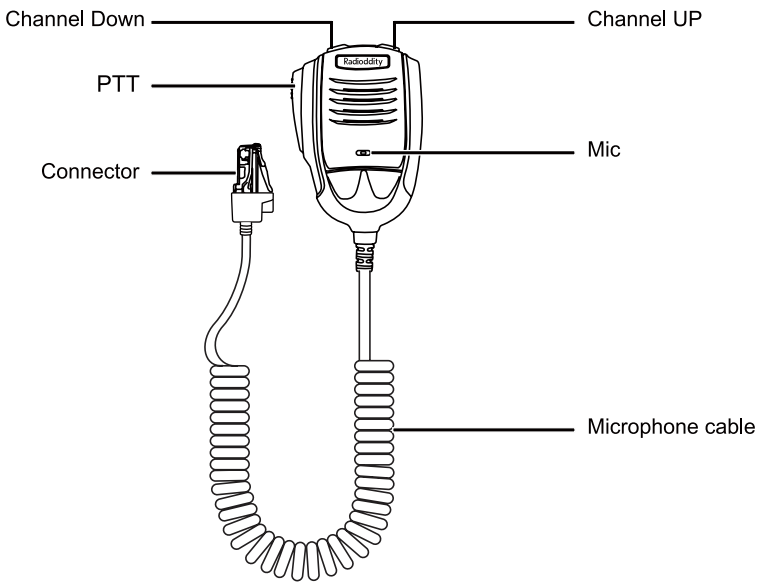

| No. | Key | Functions |
|---|---|---|
| 1 | FRQ | Switch between channel mode and frequency mode、offset setup |
| 2 | BAND | Switch band: A-I、ECHO setup |
| 3 | MENU | Function Menu key |
| 4 | MODE | Switch mode(FM、AM、USB、LSB、PA)、TSQ setup |
| 5 | DW | Dual–watch scan、Frequency+10K function |
| 6 | RB | RB function、Beep voice prompt function |
| 7 | NB | NB function、HI-CUT function |
| 8 | SCAN | Scan、Scan add、Scan delete |
| 9 | MEM | Use, store or delete memory channel |
| 10 | EMG | Emergency Channel; Keypad lock. |
| 11 | PWR | RF Power Control |
| 12 | RFG | RF Gain Control |
| 13 | SQ | Squelch Control |
| 14 | CLAR | SSB Clarifier switch |
| 15 | VOL | Power On/Off; Volume Control. |
| 16 | CH | Channel Switch, Push key. |
| 17 | | Microphone Jack |
| 18 | | LCD Display |

## Rear Panel

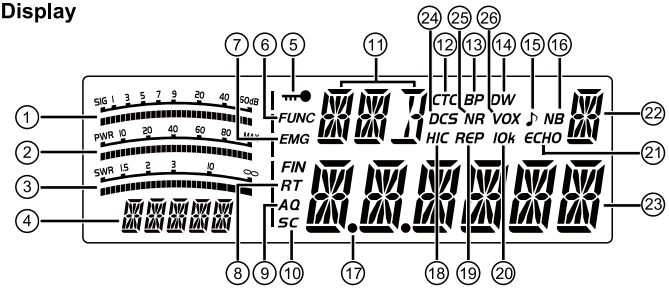



| No. | Functions |
|---|---|
| 19 | External SP Jack |
| 20 | External  PA Jack |
| 21 | Antenna Jack |
| 22 | Power Supply Jack |
| 23 | Programming jack |

## Microphone



## LCD Display




| | | |
|---|---|---|
| 1 | | RX Signal strength indicator. |
| 2 | | TX Signal strength indicator. |
| 3 | | SWR strength indicator. |
| 4 | | Model name Indicator. |
| 5 | | Appears when the Keypad lock function is ON. |
| 6 | *FUNC* | Appears when press MENU key. |
| 7 | *EMG* | Appears when using Emergency channel. |
| 8 | *FIN*<br>*RT* | Appears when adjust SSB clarifier frequency. |
| 9 | *AQ* | Appears when use ASQ. |
| 10 | *SC* | Appears when scan function is ON. |
| 11 | | Appears when modulation mode is ON. |
| 12 | *CTC* | Appears when set with CTCSS code. |
| 13 | *BP* | Appears when Beep voice is ON. |
| 14 | *DW* | Appears when Dual-watch function is ON. |
| 15 | *RB* | Appears when RB function is ON. |
| 16 | *NB* | Appears when adjust Noise Blanker is ON. |
| 17 | ● | Appears when scan list is ON. |
| 18 | *HIC* | Appears when Hi-cut function is ON. |
| 19 | *REP* | Appears when repeater function is ON. |
| 20 | *IOk* | Appears when add 10k function is ON. |
| 21 | *ECHO* | Appears when Echo function is ON. |
| 22 | | Working band indicator. |
| 23 | | Display of frequency and channel. |
| 24 | *DCS* | Appears when set with DCS code. |
| 25 | *NR* | Appears when noise reduction function is ON. |
| 26 | *VOX* | Appears when VOX function is ON. |

## HOW TO USE YOUR RADIO

### OFF/ON Radio

1. Turn VOL clockwise to switch on the radio, the radio emit a beep. When the LCD displays frequency or channel, the radio is on.
2. Turn VOL anti-clockwise to switch off the radio, the radio is OFF when hear Ka Ta from the switch.

### Volume Control

When the radio is turned on, turn VOL clockwise will increase the volume, turn VOL anti-clockwise will reduce the volume. The LCD displays **VOL: XX** (XX stands for the volume level, total 1-36 levels).

**Note: Adjust the volume during communication to get suitable level.**

### RF Power Control

When the radio is transmitting, turn PWR outer shaft to adjust power. Turn it clockwise to increase power, anti-clockwise to reduce power.

### RF Gain Control

When the radio is receiving, turn RFG inner shaft to adjust RF gain. Turn it clockwise to increase gain, anti-clockwise to reduce gain.

### SQUELCH Control

When the radio is standby, turn SQ outter shaft clockwise to adjust squelch level. The LCD displays **SQ: XX.** (XX stands for the squelch level, total 1-36 levels).

### SSB Clarifier control

When the radio is transmitting or receiving, turn CLAR inner shaft to adjust USB/ LSB TX or RX frequency. Turn it clockwise to increase frequency, anti-clockwise to reduce frequency.

### Channel Selection

When radio is in channel mode, turn channel knob to select desired channel. Clockwise to increase, anti-clockwise to reduce channel.

**Note: In channel display mode, each press 【PUSH】key will increase the frequency by 10 times of channel step size.**

**Frequency control**

1. In frequency mode, press【**PUSH**】key, then you can adjust frequency for present channel;
2. When the frequency is flashing, turn CH clockwise to increase frequency, anti-clockwise to reduce frequency.
3. When the frequency is flashing, press【**PUSH**】again to adjust frequency step size

## ■ KEYPAD FUNCTION

### 【MENU+MODE】

Press【**MENU**】and【**MODE**】together to enter weather channel mode.

### 【FRQ/REP】

Short press【**FRQ**】to switch between frequency display mode and channel display mode.

**Offset Direction Function**

1. Long press【**FRQ**】for 2 seconds to enter offset direction function, LCD displays "**REP**";
2. Press【**PUSH**】to select offset, turn channel switch to select;

   **REPOF:** Turn off offset direction function;

   **REP+:** Turn on offset direction function, TX frequency>RX frequency;

   **REP-:** Turn on offset direction function, RX frequency>TX frequency;
3. Press【**PUSH**】to store and exit.

### 【BAND/TONE】

**Band Selection Function**

Short press【**BAND**】to choose band A-B-C-D-E-F-G-H-I.

**Echo Function**

1. Long press【**BAND**】for 2 seconds to enter ECHO function, LCD displays "**ECHO**";
2. Long press【**BAND**】for 2 seconds to turn off ECHO function.

### 【MENU】

Long press【**MENU**】for 2 seconds to enter menu list.

### 【MODE/TSQ】

**Modulation Mode**

Short press【**MODE**】to choose mode FM-AM-USB-LSB-PA.

**CTCSS/DCS Function**

Long press【**MODE**】for 2seconds to enter CTC/DCS setting.

Press Push to choose turn on or off CTCSS/DCS function.

When CTCSS/DCS is turned on, the LCD displays CTC or DCS.

## 【DW/+10K】

**Dual-Watch function**

1. Short press【**DW**】to turn on Dual watch, LCD displays "**DW**";
2. Short press【**DW**】again or press PTT to exit DW mode;

**Frequency+10KHz function**

1. Long press【**DW**】for 2 seconds to turn on frequency +10KHz function, LCD displays "**10K**";
2. Long press【**DW**】for 2 seconds again to turn off frequency +10KHz function.

## 【RB/BEEP】

**RB function**

1. Short press【**RB**】to turn on RB function, LCD displays "**RB**";
2. Press【**PUSH**】to select RB frequency, turn on channel switch to select. OFF~5, total 6 groups.

   **OFF:** Turn off RB function;
3. Press 【**PUSH**】 to store and exit.

**BEEP Voice Prompt function**

1. Long press【**RB**】for 2 seconds to enter BEEP voice prompt function, LCD displays "**RB**";
2. Long press【**RB**】for 2 seconds again to turn off BEEP voice prompt function.

## 【NB/HCUT】

**NB function**

1. Short press【**NB**】to enter NB function, LCD displays "**NB**";
2. Short press【**NB**】again to turn off NB function.

**HI-CUT function**

1. Long press【**NB**】for 2 seconds to enter HI-CUT function, LCD displays "**HIC**";
2. Long press【**NB**】for 2 seconds again to turn off HI-CUT function

## 【SCAN/SKP】

**Scan function**

1. Short press【**SCAN**】to enter scan function, LCD displays "**SC**";
2. In scan mode, Turn channel switch will change scan direction.
3. Short press【**SCAN**】again to exit.

**Add/delete scan list function**

1. Long press【**SCAN**】for 2 seconds to add or delete the current channel from scan list;
2. When LCD displays "●", current channel is not added to scan list; When LCD does not display "●", current channel is added to scan list.

## 【MEM/STOR】

**Using memory channel:**

1. Short press【**MEM**】to enter memory channel, turn channel switch to choose memory channel. M1-M6, Total 6 memory channels.
2. Short press【**MEM**】again to exit memory channel mode.

**Store/Delete memory channel:**

1. **Store memory channel**

   When the radio is not in memory channel mode, choose the channel to be stored, and hold【**MEM**】enter storage mode, the channel number flashes, Turn Channel switch to choose the location to be stored (M1-M6), then hold【**MEM**】until the flashing channel number disappear, the storage is done.

2. **Delete memory channel**

   In channel mode, hold【**MEM**】for over 2 seconds, the memory channel number flashes, turn the CH switch to choose the memory to be deleted. Then hold【**MEM**】until the flashing channel number disappear, the delete is done.

## 【EMG/LOCK】

**Choose EMG channel:**

Short press【**EMG**】to use Emergency channel, LCD displays "**EMG**".

1. Short press【**EMG**】once to choose CH9;
2. Short press【**EMG**】again to choose CH19;
3. Short press【**EMG**】thrice to return to last normal channel.

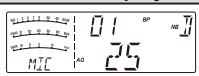
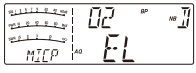
**Keypad Lock Function:**

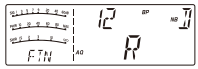
1. Long press【**EMG**】to lock keys, LCD displays " 🔒 ";
2. Long press【**EMG**】again to unlock the keys.

**Note: When this function is turned on, only PTT button is valid.**

## ■ BACKGROUND FUNCTION MENU OPERATION

1. Press【**MENU**】for 2 seconds to enter menu list;
2. Turn Channel switch to select menu list;
3. Press【**PUSH**】to enter the menu setup;
4. Turn channel switch to select wanted setup;
5. Press any other key or wait 5 seconds, the setting will be stored and exit.

| No. | Function | LCD Display | Values and Descriptions |
|---|---|---|---|
| 1 | Mic Gain |  | 1-36, Total 36 levels available;<br>**Default:** 25. |
| 2 | Microphone type |  | EL: Choose EL if use electronic microphone<br>DY: Choose DY if use dynamic microphone<br>Default: EL |
| 3 | CTCSS/DCS code (For RX) | | OFF: Turn off CTCSS/DCS for RX.<br>C-XXX: Choose CTCSS code: 67.0-250.3Hz, Total 38 groups;<br>D-XXX: Choose DCS code: 023N-754N total 104 groups;<br>Default: C-008(88.5Hz) |
| 4 | CTCSS/DCS code (For RX) | | OFF: Turn off CTCSS/DCS for TX.<br>C-XXX: Choose CTCSS code: 67.0-250.3Hz, Total 38 groups;<br>D-XXX: Choose DCS code: 023N-754N total 104 groups;<br>Default: C-008(88.5Hz) |
| 5 | CTCSS/DCS code For TX and RX | | OFF: Turn off CTCSS/DCS for TX and TX.<br>C–XXX: Choose CTCSS code: 67.0–250.3Hz, Total 38 groups;<br>D–XXX: Choose DCS code: 023N–754N total 104 groups;<br>Default: C–008(88.5Hz) |
| 6 | Frequency Step | | 100: Step size is 100Hz<br>1K: Step size is 1KHz<br>5K: Step size is 5KHz<br>10K: Step size is 10KHz<br>100K: Step size is 100KHz<br>1M: Step size is 1MHz<br>Default: 1KHz<br>Note:<br>This function is valid only when the channel switch is defined as FREQ. |
| 7 | Monitor Gain | | 1-32, OFF, Total 33 levels available;<br>Default: OFF. (Shut NOG function) |
| 8 | TOT | | 1-600s, OFF, Total 10minutes available;<br>**Default:** 180S. (Shut TOT function) |
| 9 | SWR Protection | | **OFF:** Shut SWR function;<br>**ON:** Open SWR function;<br>**Default:** ON. |
| 10 | Voltage protection | | OFF: Shut voltage protectio;<br>ON: Open voltage protection;<br>Default: ON. |
| 11 | Scan Type | | **SQ:** SQ scan function;<br>**TI:** Time scan function;<br>**Default:** SQ. |

| No. | Function | LCD Display | Values and Descriptions |
|---|---|---|---|
| 12 | SSB Clarifier switch |  | **OFF:** Shut frequency adjustment;<br>**R:** Open RX frequency adjustment;<br>**T:** Open TX frequency adjustment;<br>**RT:** Open TX/RX frequency adjustment;<br>**Default:** R. |
| 13 | Channel Frequency switch | | **CHAN:** Channel adjust;<br>**FREQ:** Frequency adjust;<br>**Default:** FREQ. |
| 14 | ASQ Control | | **01~09:** Total 9 Levels;<br>**Default:** 05. |
| 15 | Offset frequency | | **Frequency range:** 100Hz~5MHz;<br>**Default:** 100KHz. |
| 16 | VOX level | | 01~09: Total 9 Levels for VOX sensitive.<br>Default: OFF. |
| 17 | VOX delay | | 01~09: Total 9 Levels for VOX delay time set.<br>Default:03 |
| 18 | Echo volume | | 01~32: Total 32 Levels for echo volume.<br>Default:19 |
| 18 | Echo delay | | 01~32: Total 32 Levels for echo delay time set.<br>Default:19 |
| 20 | Weather alert | | OFF: Shut weather alert function;<br>ON: Open weather alert function;<br>Default:OFF. |
| 21 | RXNR | | 01~05: Total 5 Levels for RX noise reduction<br>OFF:Turn off RX noise reduction<br>Default:OFF |
| 22 | TXNR | | 01~05: Total 5 Levels for TX noise reduction<br>OFF:Turn off TX noise reduction<br>Default:OFF |
| 23 | Reset | | OPT: All function setup resume default;<br>ALL: All channels and setup resume default<br>Default: OPT |

## ■ SPECIFICATIONS

| GENERAL | |
|---|---|
| Frequency Range | 28.000-29.700MHz(Programmable) |
| Frequency Band | A/B/C/D/E/F/G/H/I |
| Channel | 40channels(programmable)in each band |
| Frequency Control | Phase-Locked-Loop Synthesizer |
| Frequency Step | 100Hz、1KHz、10KHz、100KHz、1MHz |
| Frequency Tolerance | ±5.00ppm |
| Temperature Range | -20℃ to +50℃ |
| Microphone | with push-to-talk /UP/DN and coiled cord |
| Input Voltage | 13.8V |
| Dimensions (in mm) | 305(L)x200(W)x60(H) |
| Weight | 1.73kg |
| Antenna Connector | UHF, SO239 |

| TRANSMITTER | |
|---|---|
| Power Output | AM PEP: 60W / FM: 50W / SSB: 60W(PEP) |
| Drain | 10A(with modulation) |
| Modulation | AM/FM/USB/LSB |
| Inter-modulation Distortion | SSB: 3rd order, more than -25dB; 5th order, more than -35dB |
| SSB Carrier Suppression | 55dB |
| Unwanted Sideband | 50dB |
| Frequency Response | AM/FM: 300 to 3000Hz<br>SSB: 450 to 2500Hz |
| Output Impedance | 50ohms, unbalanced |

| RECEIVER | |
|---|---|
| Sensitivity | SSB: 0.25μV for 10dB(S+N)/N at greater than 1/2-watt of audio output<br>AM:1.0μV for 10dB(S+N)/N at greater than 1/2watt of audio output<br>FM: 1.0μV for 20 dB (S+N)/N at greater than 1/2 watt of audio output |
| Adjacent-Channel Selectivity | AM/FM: 60dB SSB: 70dB |
| Image Rejection | More than 65dB |
| IF Frequency | AM/FM: 10.695MHz 1st IF, 455KHz 2nd IF<br>SSB: 10.695MHz |
| RF Gain Control | 45dB adjustable for optimum signal reception |
| Automatic Gain Control(AGC) | Less than 10dB change in audio output for inputs from 10 to 100,000 microvolt. |
| Squelch | Adjustable; threshold less than 1.0μV.<br>Automatic Squelch Control(only AM/FM)1.0μV |
| Audio Output Power | 3 watts into 8 ohms |
| Frequency Response | AM/FM: 300 to 3000Hz SSB: 450 to 2500Hz |
| Built-in Speaker | 8 ohms, round. |
| External Speaker(Not Supplied) | 8 ohms; disables internal speaker when connected. |

| WX channels | |
|---|---|
| WX-01 | 162.400MHz |
| WX-02 | 162.475MHz |
| WX-03 | 162.425MHz |
| WX-04 | 162.450MHz |
| WX-05 | 162.500MHz |
| WX-06 | 162.525MHz |
| WX-07 | 162.550MHz |

## ■ CTCSS/DCS CHART

### ⁘ 38 SETS ANALOG FRQ LIST(CTCSS)

| No. | Freq.(Hz) | No. | Freq.(Hz) | No. | Freq.(Hz) | No. | Freq.(Hz) |
|---|---|---|---|---|---|---|---|
| 01 | 67.0 | 11 | 97.4 | 21 | 136.5 | 31 | 192.8 |
| 02 | 71.9 | 12 | 100.0 | 22 | 141.3 | 32 | 203.5 |
| 03 | 74.4 | 13 | 103.5 | 23 | 146.2 | 33 | 210.7 |
| 04 | 77.0 | 14 | 107.2 | 24 | 151.4 | 34 | 218.1 |
| 05 | 79.7 | 15 | 110.9 | 25 | 156.7 | 35 | 225.7 |
| 06 | 82.5 | 16 | 114.8 | 26 | 162.2 | 36 | 233.6 |
| 07 | 85.4 | 17 | 118.8 | 27 | 167.9 | 37 | 241.8 |
| 08 | 88.5 | 18 | 123.0 | 28 | 173.8 | 38 | 250.3 |
| 09 | 91.5 | 19 | 127.3 | 29 | 179.9 | | |
| 10 | 94.8 | 20 | 131.8 | 30 | 186.2 | | |

### ⁘ 104 SETS DIGITAL FRQ LIST(DCS)

| Code No. | DSC (Octal) | Code No. | DSC (Octal) | Code No. | DSC (Octal) | Code No. | DSC (Octal) |
|---|---|---|---|---|---|---|---|
| 001 | 023 | 027 | 152 | 053 | 311 | 079 | 466 |
| 002 | 025 | 028 | 155 | 054 | 315 | 080 | 503 |
| 003 | 026 | 029 | 156 | 055 | 325 | 081 | 506 |
| 004 | 031 | 030 | 162 | 056 | 331 | 082 | 516 |
| 005 | 032 | 031 | 165 | 057 | 332 | 083 | 523 |
| 006 | 036 | 032 | 172 | 058 | 343 | 084 | 526 |
| 007 | 043 | 033 | 174 | 059 | 346 | 085 | 532 |
| 008 | 047 | 034 | 205 | 060 | 351 | 086 | 546 |
| 009 | 051 | 035 | 212 | 061 | 356 | 087 | 565 |
| 010 | 053 | 036 | 223 | 062 | 364 | 088 | 606 |
| 011 | 054 | 037 | 225 | 063 | 365 | 089 | 612 |
| 012 | 065 | 038 | 226 | 064 | 371 | 090 | 624 |
| 013 | 071 | 039 | 243 | 065 | 411 | 091 | 627 |
| 014 | 072 | 040 | 244 | 066 | 412 | 092 | 631 |
| 015 | 073 | 041 | 245 | 067 | 413 | 093 | 632 |
| 016 | 074 | 042 | 246 | 068 | 423 | 094 | 654 |
| 017 | 114 | 043 | 251 | 069 | 431 | 095 | 662 |
| 018 | 115 | 044 | 252 | 070 | 432 | 096 | 664 |
| 019 | 116 | 045 | 255 | 071 | 445 | 097 | 703 |
| 020 | 122 | 046 | 261 | 072 | 446 | 098 | 712 |
| 021 | 125 | 047 | 263 | 073 | 452 | 099 | 723 |
| 022 | 131 | 048 | 265 | 074 | 454 | 100 | 731 |
| 023 | 132 | 049 | 266 | 075 | 455 | 101 | 732 |
| 024 | 134 | 050 | 271 | 076 | 462 | 102 | 734 |
| 025 | 143 | 051 | 274 | 077 | 464 | 103 | 743 |
| 026 | 145 | 052 | 306 | 078 | 465 | 104 | 754 |

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