CT310

DUAL BAND VHF/UHF TRANSCEIVER

› INSTRUCTION MANUAL

SPECIAL FEATURES

200 Memory channels

FM radio

3 colors display

MIDLAND®

Index

CT310 transceiver will provide you with reliable, clear and efficient communication service. This sturdy and reliable transceiver introduces innovative DSP digital signal processing technology, high degree integration and it is including plenty of professional functions.
The transceiver is including plenty of TX, RX channels, as well as UU, VV and UV standby modes which is able to realize cross band function, 51 groups of CTCSS encode/decode and 1 group of user-defined CTCSS encode/decode, 1024 groups of DCS encode/decode, 5TONE encode/decode, DTMF encode/ decode, built-in FM radio functions, etc..
It is a meticulous build functional and Multi frequency band radio for radio amateur.

Unpacking

Please carefully unpack the transceiver. We recommend that you identify all items before discarding the packing material.
If any items are missing or have been damaged during shipment, please contact with dealers immediately.

Supplied Accessories

- CT310 transceiver with belt clip
- Li-Ion battery pack 7.4V 1200mAh
- Desktop charger
- Wall adaptor

Maintenance

Your Two Way Radio is an electronic product of exact design and should be treated with care.

The suggestions below will help you to fulfill any warranty obligations and to enjoy this product for many years.

- Do not attempt to open the radio for any reason! The radio's precision mechanics and electronics require experience and specialized equipment; for the same reason, the radio should under no circumstances be realigned as it has already been calibrated for maximum performance. Unauthorized opening of the transceiver will void the warranty.
- Do not store the Radio under the sunshine or in hot areas.
- High temperatures can shorten the life of electronic devices, and warp or melt certain plastics.
- Do not store the radio in dusty and dirty areas.
- Keep the Radio dry. Rainwater or damp will corrode electronic circuits.
- If it appears that the Radio diffuses peculiar smell or smoke, please shut off its power immediately and take off the charger or battery from the radio.
- Do not transmit without antenna.

Main features

- VHF/UHF dual band and channel displayed
- Operating modes: UHF/VHF, UHF/UHF, VHF/VHF
- Output power 5W UHF/VHF
- 200 memory channels
- 51 CTCSS tones and 1024 DCS codes
- 1750/1450/1000/2100Hz repeater tones
- SOS Emergency function
- FM radio receiver (76-107.95MHz)
- VOX, Scan, frequency band scan
- Mode selection: channel/frequency/name
- Talk Around feature (TX = RX)
- Frequency step: 2.5/5/6.25/10/12.5/20/25/30/50KHz
- Adjustable frequency offset: 0 – 69.9975MHz
- Dual transmission (PTT and SUB PTT keys)
- Stop Watch
- Automatic power off 30min/3 hrs
- Li-Ion battery pack 7.4V 1200mAh
- 2pin Kenwood accessory jack

Programming software

Thanks to the Midland Programming software PRG-G10, it is possible to increase the performance of your radio or to reduce its functionality by enabling or disabling some features.
For further information, please consult the Programming software manual.
When programming the transceiver, read the factory initial data first, then rewrite the frequency and signaling etc., otherwise errors may occur because of different frequency band etc.

Charging Operation

The battery is not charged at the factory, please charge it before use. Charge the battery for the first time after purchase or extended storage (more than 2 months) may not bring the battery to its normal operating capacity. After repeating fully charge/discharge cycle for two or three times, the operating capacity will reach the best performance. The battery life is over when its operating time decreases even though it is fully and correctly charged. Replace the battery.

Battery Charger Type

Please use the original charger by Midland; other models may cause explosion and injure people. After installing the battery, if the radio red light twinkles, it means that the battery is discharged; please charge it. .

Charging notes

- After the battery is charged to its highest capacity, don't charge anymore.
- Do not short-circuit the battery terminals or throw the battery into fire.
- Never attempt to remove the casing from the battery pack.
- Please turn the power off before charging. It will affect the battery life when charging the power-on radio.
- If the radio still shows low power after the normal charge, please change the battery.
- The average usage time of battery pack is 11 hours. Average usage time is 5% for transmitting, 5% for receiving and 90% for standby.

How to Charge

1. Plug the AC adaptor into the AC outlet, then plug the cable of AC adaptor into the DC jack, the indicator lights orange for 1s and turns into GREEN---waits to charge.
2. Slide the battery or transceiver with battery into the charger; make sure the battery terminals are in contact with the charging terminals well. LED turns into twinkling RED---pre-charging begins.
3. Pre-charging for about 5 minutes, LED twinkles stop then charging begins.
4. It takes about 4 hours to fully charge the battery, when LED turns into GREEN — fully charged.

NOTE: When charging a power-on transceiver equipped with battery, the LED will not turn into green to show the full charge status; it will be indicated only when you turn off the transceiver: because when the transceiver is turned on, it would consumes energy and the charger cannot detect when the battery has been fully charged.

Charging Process:

Standby (self-examine orange lights 1 second when power on)	Green light
Pre-charging (pre-charging stage)	Red light twinkles for about 5 minutes
Charging	RED light lightens for about 4 hours
Full charged	Green light

LED Indicator:

STATUS	LED
Self-examine when power on	Orange (for 1 second)
(No battery)	Green
Pre-charging	Red light twinkles for 5 minutes
Charge normally	Red
Full Charged	Green
Trouble	Red twinkles for a long time

NOTE: Trouble means battery heating, battery short-circuit or charger short-circuit.

Charging Prompt

1. **Self-examination:** When charging, ORANGE light twinkles for 1 second and goes out. That means the charger has passed its self-examination and it can charge the battery normally. If the light remains orange or the red light twinkles, which means the charger can not pass its self-examination or charge the battery.
2. **Trickle pre-charging:** When the battery has been inserted into the charger and red light twinkles (it means the remnant voltage is low), the charger trickle charges the battery (pre-charging status), until the battery reaches a certain electric quantity, the charger automatically turns into normal charging. And if the red light stops twinkling, (it means the remnant voltage meets a certain electric quantity), the charger will charge the battery normally.

NOTE:The time for Trickle pre-charging does not exceed 30m. After 30m, if the red indicator is still twinkling, it means it is unable to charge battery. Please kindly check battery and charger.

How to Store the Battery

If the battery needs to be stored for a long period, the battery should be removed from the radio. Its state of charge should be 50-100% charged.
It should be kept in low temperature, dry environment.
Kkeep away from hot places and direct sunlight.

Warning

- Do not short circuit battery terminals.
- Never attempt to remove the casing from the battery pack.
- Never assemble the battery in dangerous surroundings, spark may cause explosion.
- Do not put the battery in hot environment or throw it into fire, it may also cause explosion.

Installing / Removing the Li-ion Battery

Match the two grooves of the battery pack with the corresponding guides on the back of the transceiver and push.

1. Press the battery pack and transceiver firmly together until the release latch on the top of the transceiver locks. After hearing a "click" sounds, the battery has been locked.
2. To remove the battery pack, slide the ▼ release latch and remove the pack away from the transceiver.

Installation & Connection

Installing / Removing the Antenna

Installing the Antenna:
Screw the antenna into the connector on the top of the transceiver by holding the antenna base and turning it clockwise until secure.
Removing the Antenna:
Turn the antenna counterclockwise to remove it.

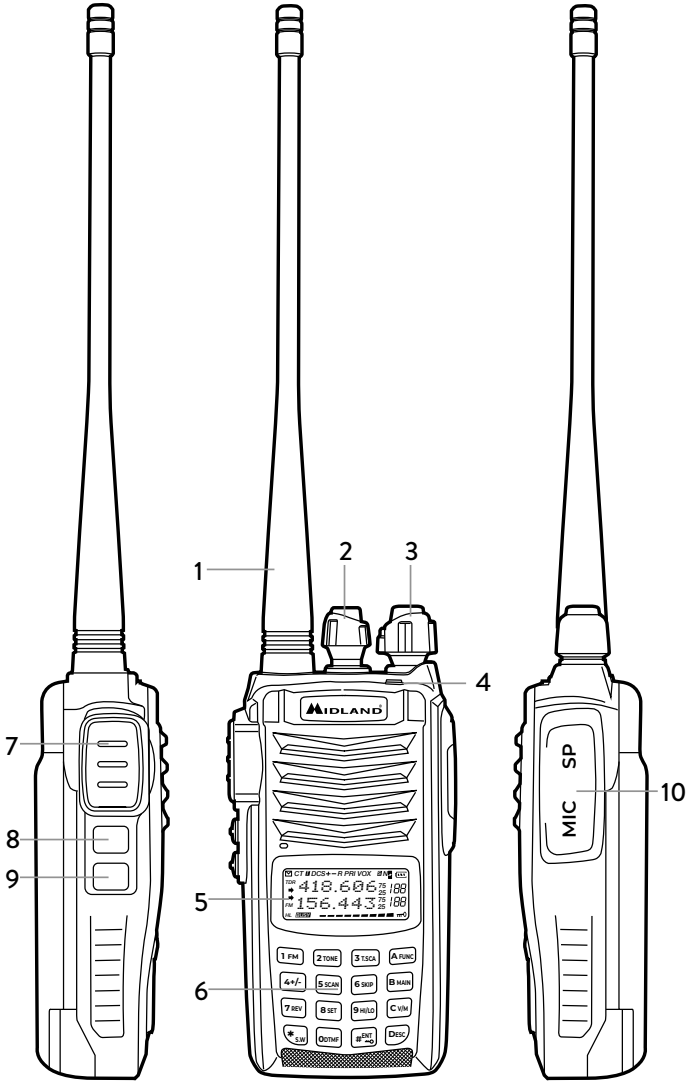
Installing / Removing the Belt Clip

Installing the Belt Clip:
Place the belt clip to the corresponding grooves on the back of the transceiver, and then turn the screws clockwise.
Removing the Belt Clip:
Turn the screws counterclockwise to remove the belt clip.

Installing Optional Speaker / Microphone

Unveil the MIC-SP jack cover and then insert the Speaker/ Microphone plug into MIC-SP jack.

Note: The transceiver is not completely waterproof while using the Speaker/ Microphone.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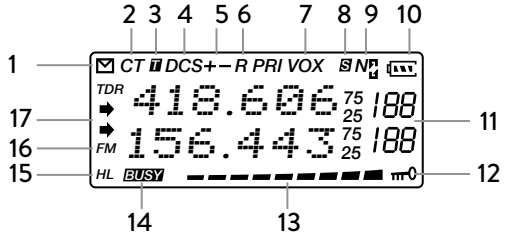
MIDLAND
SP
MIC

Getting acquainted

1. **Antenna**
2. **Selection Knob**
3. **Power/Volume Switch.** Rotate it clockwise to turn on the transceiver; rotate it anticlockwise till you hear a "click" to turn it off. When the transceiver is turned on, rotate the knob clockwise to increase the volume, anticlockwise to reduce the volume.
4. **TX/RX indicator.** RX is GREEN, TX is RED
5. **LCD display.** Displays current frequency/channel and operations
6. **Keypad.** Enters desired frequency/channel or operations by keypad
7. **PTT key.** Press PTT key to talk, release this key to receive.
8. **PF1 key:** multifunction button. The functions are selectable.
9. **PF2 key:** multifunction button. The functions are selectable.
10. **Speaker/Microphone jack: suitable for external accessories and for programming software**

LCD Display



On the LCD display screen, you will see various icons which show the selected functions.

1. Function (FUNC)
2. CTCSS tone selected
3. Optional signalling (DTMF)
4. DCS code selected
5. Frequency offset
6. Frequency reverse
7. VOX function
8. Scan skip
9. Narrow band
10. Battery level
11. Menu number, channel number
12. Keypad lock
13. Received signal strength
14. Busy channel
15. Hi/low power selection
16. FM radio
17. The arrows show the channel/frequency in use

Note: ***Battery capacity indicator (full);*** ***No power, replace battery pack or charge it***

Basic Operations

Turn the Radio On & Off

In power-off state, please turn **POWER/VOLUME** clockwise to **turn on** the transceiver.
In power-on state, please turn **POWER/VOLUME** anticlockwise to **turn off** the transceiver.

Adjusting Volume

In power-on state, turn **POWER/VOLUME** to adjust the volume.
Clockwise-up, anticlockwise -down.
When adjusting the volume, press the key programmed as Squelch Off to monitor the current volume firstly.

NOTE: Press the side key programmed as Squelch Off Momentary to monitor the background noise. Turn POWER/VOLUME to control the volume. The desired volume can be adjusted more correctly when communicating with the other parties.

Switch between Main band and Sub band

In standby mode, press the **MAIN** key to switch the channel between the Main band and Sub band. The arrow indicates the current operational channel.

Switch between Channel mode and VFO mode

In standby mode, press the **V/M** key to set the main band as Channel mode or frequency mode(VFO).

Channel Adjusting

When the transceiver is set in Channel mode or FM radio channel mode, rotate the channel switch to select the channel. Rotate the channel switch clockwise to enter the downward channel, counterclockwise to enter the upward channel.

NOTE: In transceiver mode, the arrow indicates the main band channel. If there is a null channel between two channels, the transceiver will skip it and will enter into the next channel directly.

Frequency Adjusting

When the transceiver is set in VFO mode or FM radio frequency mode, rotate the channel switch to set the frequency. Rotate the channel switch clockwise to increase the frequency, counterclockwise to decrease the frequency. Every rotate can add or reduce one stepping value.

NOTE: Channel step:2.5K, 5K, 6.25K, 10K, 12.5K, 20K, 25K, 30K and 50KHz in total 9 for optional. FM radio step frequency is 50K.

Frequency Input by Keypad

In frequency mode or FM radio frequency mode, you can directly enter the frequency through the keypad. When your transceiver is under Channel mode, press the **V/M** key to switch into VFO.

NOTE: When the transceiver is in Channel mode, it shows the current channel number on the right of the main frequency.

Enter the desired frequency by keypad.

NOTE: The frequency input of main channel or FM radio is relevant to the stepping and transceiver frequency range. If the frequency setup is beyond the range or does not match with the step size, the input is unavailable. Under the FM radio mode, the frequency step size input by numeric keys is 100k.

Channel Input by Keypad

In channel mode or FM radio mode, you can switch to the desired channel by entering three numbers (001-199). If the entered channel is not in edited channel range, the transceiver will emit a beep to warn about the wrong input and return to the current channel. For example, entering 001 is channel 1, 030 is channel 30, 125 is channel 125.

FM Channel Searching

When the transceiver is in FM radio mode, press the **FUNC** key; the LCD displays 🖂 icon, then press **SCAN** to start the FM searching. When one station is sought, the LCD displays the current station frequency.

Squelch Off Momentary / Squelch Off

Side key **PF2** can be setup for Squelch off Momentary or Squelch off function by programming software.

1. **Squelch off**: Press **PF2;** the squelch will be enabled and the background noise can be heard. Press **PF2** again; the squelch will be mute.
2. **Squelch off Momentary**: Press and hold **PF2;** the squelch will be enabled and the background noise will be heard. Release **PF2**, the squelch will be mute.

Receiving

When your transceiver is called bythe other party, the green LED light will be on and the arrow icon will flash, you can hear the calling.

NOTE: You may not receive the calling when your transceiver is set at high squelch level. If current channel is programmed with decode signal, only the same signaling call can be heard.

Transmitting

According to **PF2** setup in programming software, hold the **PF2** key to monitor the channel to ensure it is not busy, press **PTT** and talk

NOTE: When press and hold the PTT key, transceiver is transmitting if the red LED light is on. Release PTT to receive calls.

Emergency Alarm

In standby mode, press and hold **PF1** which is programmed with ALARM function until LCD displays **"ALARM"**: the Emergency alarm function is activated. This transceiver has 4 Alarm modes available, which can be setup in programming software. Power off the transceiver to exit Alarm.

Side Key PF1 function instruction

1. **VOLT:** Battery capacity inquiry: Under standby, press **PF1**, LCD displays current battery capacity, press this key again to exit.
2. **CALL:** Transmit the prestored DTMF/5TONE Encode signal in channel.
3. **ALARM:** Long pressing **PF1**, LCD display **"ALARM"**, transceiver will enable the preset alarm function.
4. **SUBPTT:** Press **PF1**, transceiver will transmit at sub-band frequency.
5. **Transmit tone pulse frequency:** Press and hold **PTT**, then press **PF1** to transmit selected tone pulse frequency.

NOTE: The tone pulse frequency can be set to 1750Hz, 1450Hz, 1000Hz or 2100Hz in Function menu No.28 TBST.

Side key PF2 function instruction

1. **Squelch off:** Press **PF2;** the squelch circuit is enabled and the background noise will be heard. Press **PF2** again, squelch circuit will be mute.
2. **Squelch off Momentary:** Press and hold **PF2**, squelch circuit is not mute, back-ground noise can be heard. Release **PF2**, squelch circuit is mute.
3. **Transmit DTMF signaling:** Press and hold **PTT**, then press **PF2** to transmit the selected DTMF signaling.

NOTE: The optional signaling of current channel is DTMF or no optional signaling, the operation will transmit the DTMF signaling.

4. Press and hold **PF2** to turn on the transceiver, until transceiver emits **"DU"** beep, the transceiver enters into general functions setup.

Edit channel

1. In frequency mode (VFO), enter the desired frequency and settings, press **FUNC** key, the top left corner of LCD displays 🖂 icon, press **V/M** key to switch into channel mode, channel number flashes.
2. Rotate channel switch to select desired editing channel number.
3. Press **FUNC** key, the top left corner of LCD displays 🖂 icon, press and hold **V/M** key until transceiver emits **"DUDU"** beep, channel is stored successfully.

Delete channel

1. Under standby state, press **FUNC**, the top left corner of LCD displays ✉ icon, press **V/M** to switch into channel mode, channel number flashes.
2. Rotate the channel switch to select the channel number you want to delete.
3. Press **FUNC**, the top left corner of LCD displays ✉ icon, press and hold **V/M** until the transceiver emits **"DUDU"** beep and clear up frequency information of current channel, deletion is successful.

NOTE: This process can be applied for deleting FM radio channels.

Programming scan

Setup the frequency of L1 channel, U1 channel, L2 channel and U2 channel will realize VFO frequency scanning border limited. L1 & L2 are the starting frequencies, U1 & U2 are the last frequencies.
When the VFO frequency is between L1 ~ U1 or L2 ~ U2, the transceiver will scan the frequencies between L1 ~ U1 or L2 ~ U2. When the VFO frequency is lower than L1 or L2, transceiver will scan frequencies higher than L1 or L2. When VFO frequency is higher than U1 or U2, transceiver will scan frequencies higher than U1 or U2.

1. In VFO mode, enter the desired frequency and relative setup, press **FUNC**, the top left corner of LCD displays ✉ icon, then press **V/M** switch into channel mode, the channel number flashes.
2. Rotate channel switch to choose the desired channel number.
3. Press **FUNC**, the top left corner of LCD displays ✉ icon, then press **V/M** until the transceiver emits **"DUDU"** beep, channels are saved successfully.

NOTE: To make this setup, L1 and U1 must be in the same frequency band. L2 and U2 must be in the same frequency band.

Turn On/ Off FM Radio

In standby mode, press **FUNC**, the top left corner of LCD displays ✉ icon, then press **FM**: LCD displays **"FM ON"** and the current FM radio frequency. The FM radio function is activated. You can mute the radio by pressing **MAIN**, the LCD displays **"FM OFF"**.
When FM radio is on, press **FUNC**, the top left corner of LCD displays ✉ icon; press **FM** to turn off the FM radio and return to the transceiver mode. Re-start transceiver also can exit FM radio function.

NOTE: To use the FM radio function, you must set RADIO function on 30th menu, otherwise the FM radio function cannot be used normally.

CTCSS/DCS Setup

In standby mode press **FUNC**, the top left corner of LCD displays ✉ icon, press **TONE**, the LCD displays **"CT"** icon, it means a CTCSS signal can be added to the current channel. Repeat the above operation, LCD displays "**DCS**" icon, it means a DCS code can be added to the current channel. Repeat the above operation, **"DCS"** icon disappears, current channel without CTCSS/DCS signal.

CTCSS/DCS Scan

Press **FUNC**, the top left corner of the LCD displays ✉ icon, press **TONE** to enter into the CTCSS/DCS scan. Rotate the channel switch to change the scan direction. When the scan detects a CTCSS/DCS signaling, it will stay 5 seconds and then re-starts the scanning. Press any other keys except **FUNC**, **S.W, #/ENT** key to exit.

NOTE: This function cannot be done when the transceiver works in professional mode or the arrow directed channel does not indicate a CTCSS/DCS signaling. In current channel, if signaling set as CTCSS, it will scan CTCSS, if sets as DCS, will scan DCS.

Offset Frequency Direction Setup

Under standby mode, press **FUNC**, the top left corner of LCD displays ✉ icon, press ***/-** to choose the offset frequency direction. There are 3 options, Positive offset, Minus offset, shut off offset.

1. **(+) Positive offset:** Indicates that the TX frequency is higher than the RX frequency. When the reverse function is enabled, the RX frequency is higher than the TX frequency.
2. **(-) Minus offset:** Indicates that the TX frequency is lower than the RX frequency. When the reverse function is enabled, the RX frequency is lower than the TX frequency.
3. **None:** Indicates shut offset off.

In frequency mode (VFO) or channel mode, press **FUNC**, then press ***/-** to choose a positive offset direction(+), minus offset direction (-) , shut offset off one by one (Please refer to the offset frequency setup).

NOTE: This function is invalid in professional transceiver mode.

Frequency/Channel Scan

Under corresponding mode, press **FUNC**, the top left corner of the LCD displays ☑ icon, then press **SCAN** to start the frequency scan or channel scan.

1. **Frequency Scan**
   In VFO mode, the frequency scan is available. This function is used for monitoring signal of various communication frequency by transceiver 'step' setup, press numeric key or **ESC** key to exit.
2. **Channel Scan**
   Under channel mode, this function is used for monitoring signal of each channel in this mode. Press numeric key or **ESC** to exit.

NOTE:

- ***Frequency scan is of all bands scan, it scans upwards as your STEPPING setting.***
- ***In channel scan, the skipped channel is not in the line of scanning. Scan upwards as per channel no. (please refer to channel scan skip).***
- ***Frequency/channel scan can change the scan direction by rotating the channel switch, when find a matching carrier wave and signaling, the transceiver will stay 5 seconds then re-starts scanning. (Please refer to scan setup)***

Channel Scan Skip

In channel mode, press **FUNC** , the top left corner of LCD displays ☑ icon, then press **SKIP** to set the current arrow directed channel as Channel scan skip. Repeat the above operation to cancel the channel scan skip.

1. LCD displayed **"S"** means the current channel will not be scanned.
2. **"S "** icon disappeared means the current channel will be scanned.

Frequency Reverse

In standby mode, press **FUNC**, the top left corner of LCD displays ☑ icon, then press **REV** to set the arrow indicating the channel as frequency reverse, repeat above operation to turn off the frequency reverse.

1. When LCD displays **"R"** icon, it means that the arrow shows the channel of the frequency reverse function; the TX frequency and RX frequency is interchanged, as well as the CTCSS/DCS (if set).
2. When **"R"** icon disappears, it means reverse function is deactivated.

TX Power selection

In standby mode, press **FUNC**, the top left corner of LCD displays ✉ icon, then press **HI/LO** to choose High/Low power for the channel in use.

1. When LCD displays **"L"** icon, it means low power is selected.
2. When LCD displays **"H"** icon, it means high power is selected.

Stopwatch function

1. In standby mode, , press **FUNC**, the top left corner of LCD displays ✉ icon, then press **S.W** to enter into stopwatch function.
2. Press **S.W** to start timing. Press **#/ENT** to pause timing. When timing is pause, press **S.W** to continue timing.
3. Press **PF1, PF2** to exit stop watch function.

NOTE: During timing, press S.W key to stop timing and displays current data, press this key again to clear timer.

DTMF code Transmit and Enquiry

1. Press **FUNC**, the top left corner of LCD displays ✉ icon, then press **DTMF**; the LCD displays DTMF data and group number (total 16 groups) of current group.
2. Rotate the channel switch to choose the desired group and DTMF data, press **PTT** to transmit the selected DTMF signaling. If current group does not edit DTMF data, the LCD displays **"EMPTY"**.
3. When current group displays **"EMPTY"**, press **FUNC** , the top left corner of the LCD displays ✉ icon, press and hold **DTMF** until the transceiver emits **"DU"** beep, the transceiver enters into DTMF edit state, LCD displays "_____", now you can enter the desired DTMF data through the keypad.
4. When finished editing, press side key **PF2** to save DTMF signaling.

Keypad lock

In order to prevent wrong operation, the keypad can be locked. In standby mode, press **FUNC**, the top left corner of the LCD displays ✉ icon, then press and hold until the transceiver emits **"DU"** beep, the LCD displays 🔒 icon. Now the keypad is locked. Repeat the above operation to unlock the kaypad. The 🔒 icon disappears.

Single-band Switching

To avoid interference from the sub channels when the main channel is in use, the single band switching function helps to turn off the sub channel band quickly.

1. In standby mode, press **S.W**, the radio will display the upper band, the lower band will be turned off.
2. Press **S.W** again, the radio will display the lower band, the upper band will be turned off.
3. Press **S.W** again to return to dual band display.

Function Menu Setup

Menu 1-13 of this transceiver are channel operations. Channel operations temporarily change the functions of the current channel. When the unit is turned off or the channel has been changed, the relevant setup will be erased. Only in VFO mode, the channel operations will be saved until the next change. Menu 14-31 is the background operation, it is valid for all channels, the relevant setup will be saved until next change.

The operating steps are as follows:

1. Press **FUNC**, the top left corner of LCD displays ✉ icon, then press **SET** key to enter function menu.
2. Press **MAIN - V/M** to choose the desired function.

   Note:When setup CTCSS/DCS encode and decode, press FM to choose CTCSS, DCS or to disable these codes. If a DCS code has been selected, press S.W to switch positive code or reverse code.
3. Rotate the channel switch to choose the desired setting.
4. Press **ESC** or **#/ENT** to confirm and exit.

Function Menu setup

Menu	Display	Function	Options
1	T-CDC	CTCSS/DCS Encode	OFF
			62.5-254.1Hz +Self defined
			000N-777I
2	R-CDC	CTCSS/DCS Decode	OFF
			62.5-254.1Hz +Self defined
			000N-777I
3	RT-CDC	CTCSS/DCS Encode/Decode Synchronous	OFF
			62.5HZ-254.1Hz+Self defined
			000N-777I
4	TONDEC	Optional signaling setup	DTMF
5	SIGNAL	Squelch mode setup	SQ
			CTCSS/DCS
			TONE
			CT&TO
			CT/TO
6	STEP	Frequency step size setup	2.5K-50K
7	W/N	Wide / Narrow Band Selection	25K/12.5K
8	REV	Frequency Reverse	ON
			OFF

Description
No CTCSS/DCS Encode
51 groups fixed CTCSS encode+1 group self- defined encode
1024 groups DCS Encode
No CTCSS/DCS Decode
51 groups fixed CTCSS decode+1 group self- defined decode
1024 groups DCS decode
No CTCSS/DCS encode/decode
51 groups fixed CTCSS encode/decode + 1 group self-defined CTCSS encode/decode
1024 group DCS encode/decode
Current optional signal is DTMF.
When the current channel received matches RF signals, the transceiver can hear the conversation from the other party.
When the current channel received matches RF signals and CTCSS/DCS signaling, the transceiver can hear the conversation from the other party.
When the current channel received matches RF signals and optional signaling, the transceiver can hear the conversation from the other party.
When the current channel received matches RF signals + optional signaling + CTCSS/DCS signaling, the transceiver can hear the conversation from the other party.
When the current channel received matches RF signals or optional signaling or CTCSS/DCS signaling, the transceiver can hear the conversation from the other party.
9 options in total
Wide band/Narrow band
Turn on Frequency reverse function, TX and RX frequency of the current channel will be interchanged.
Close Frequency reverse function.

9	**TALKAR**	Talk Around	TX=RX
			OFF
10	**OFFSET**	Offset Frequency setup	0-70MHz
11	**NAME**	Editing Channel name	a-Z
12	**RPLOCK**	Busy Channel Lockout	BUSY
			REPEAT
			OFF
13	**TX**	TX OFF	ON
			OFF
14	**BAND**	Band Limit	ON/OFF
15	**DSPSUB**	Sub band display setup	FREQ
			VOLT
			OFF
16	**BEEP**	Keypad Voice prompt setup	ON/OFF
17	**TOT**	Time-Out-Timer	OFF
			1-27MIN
18	**VOX**	Voice Operated Transmission (VOX) Setup	OFF
			1-10
19	**VDELAY**	VOX Delay Setup	0.5S-3S
20	**APO**	Automatic Power Off Setup	OFF
			30MIN-2HOUR
21	**DTMF**	DTMF Transmitting Time	50MS-500MS
22	**SQL**	Squelch level Setup	00-09

Turn on Talk Around function, current channel will transmit at RX frequency, if CTCSS/DCS signaling is set, it will interchange decoding CTCSS/DCS as encoding.
Close Talk Around function.
Frequency range is 00-70MHz.
In channel name display mode, the edited channel name will be displayed.
Carrier wave lock, transmitting is prohibited when received matching carrier wave.
Signaling lock, transmitting is prohibited when received matching carrier but with mismatching CTCSS/DCS.
Close BCLO function.
TX function is enabled in the current channel.
TX function is disabled in the current channel.
Turn on/off band limit function.
Display sub band frequency or channel
Display current battery voltage
Sub band display is disabled
Turn on/off the keypad voice prompt function
Turn off time-out timer
Total 27minutes of TOT for optional, each interval is 1minute
Turn off the VOX function
Total 10 VOX levels as option
Total 27 levels available, each interval is 0.1S
Disable the Automatic power off function
30minutes ~ 2hours: Total 3 levels available.
Total 5 kinds of DTMF transmitting time available
10 levels of squelch available, "00" is minimum setup value (normally open)

23	**SCAN**	Scan Dwell Time Setup	5ST-15ST
			2SP
24	**FTIME**	Function Icon Stay Time	FUNCT
			1SEC-3SEC
			ALWAYS
25	**LIGHT**	LCD Backlight	ON/OFF
			AUTO
26	**COLOR**	LCD Backlight Color	BLUE/ORG/PUR
27	**ID**	Self ID inquiry	***
28	**TBST**	Tone Pulse Frequency Selection	1750Hz/2100Hz/1450Hz/ 1000Hz
29	**SAVE**	Battery Save Setup	OFF
			1:2-1:8
			AUTO
30	**RADIO**	FM radio	ON/OFF
31	**PF1**	Self define PF1 key function	VOLT
			CALL
			ALARM
			SUBPTT
			OFF

When scanning the matched signal, the transceiver will stop scanning for 5-15 seconds then resume.
When scanning the matched signal, the transceiver will stop scanning, 2seconds after signal disappeared, then resume.
When finished function setting or enter into function menu, icon disappeared.
When finished function setting or enter into function menu, icon stay 1-3seconds then disappeared.
Function icon is always display, only when pressing function key again, the icon will disappear.
Always on/off
Backlight will automatic closed after a period.
Blue/Orange/Purple
LCD displays radio self ID, DTMF ID is 3 digits.
Tone plus frequency is 1750Hz/2100HZ/1450Hz /1000Hz
Turn off battery save function.
Battery save time is 1:2-1:8
Battery save ratio is adjusting automatically.
Allow/Prohibit using FM radio.
Displays current battery capacity.
Call function.
Emergency alarm function.
Sub band PTT.
No function.

Display Mode Setup

There are three kinds of display modes for optional.

1. Press **PF2** key to turn on radio, hold **PF2** key until transceiver emits beep.
2. Press **MAIN** or **V/M** key to choose No. 01 function item, it shows **"DSP"** on LCD.
3. Rotate channel switch to choose desired setup.
   FREQ: Frequency + Channel mode, transceiver displays current channel name + frequency, press **V/M** key to switch into VFO mode.
   CH: Channel mode, 1 ~ 21 items of function menu will hide automatically, user can only operate some functions. It is unable to switch into VFO by pressing **V/M** key. This model can be used for Amateur mode.
   NAME: Channel + Name Tag mode, transceiver displays current channel number+ channel name, press **V/M** key to switch into VFO mode.
4. Press ESC key or **#/ENT** key to confirm and exit.

Resume Factory Default

You can make all the settings of transceiver return to the factory default settings when transceiver can not work normally because of wrong operation or error setup.

1. Press **PF2** key to turn on radio, hold **PF2** key until transceiver emits beep.
2. Press **MAIN** or **V/M** to choose No. 02 function item, it shows **"RESTOR"** on LCD.
3. Rotate channel switch to choose desired setup.
   OFF: No operations.
   FACT: Resume all items to factory default, including channel and background settings.
   INIT: Resume background settings to factory default, channel operations are keeping.
4. Press **ESC** key to exit current selection.
5. Press **#/ENT** key to confirm current selection.

Note: In power off state, hold ESC key to power on radio, the radio will resume to factory default.

Technical specifications

General		
Frequency Range	VHF: 144-146MHz UHF: 430-440MHz	
Channel Capacity	200 channels	
Channel Spacing	25KHz (wide band) 12.5KHz (narrow band)	
Phase-locked Step	0.1KHz	
Operation Voltage	7.4V DC ±20%	
Battery Life	More than 12 Hours(1500mAh),by 5-5-90 working cycle	
Frequency Stability	±2.5ppm	
Operation Temperature	-20°C ~ +55°C	
Size	127 x 61 x 36.5mm (with battery, antenna)	
Weight	237g (with battery, antenna)	
Receiver	**Wide band**	**Narrow band**
Sensitivity (12dB SINAD)	≤0.25μV	≤0.35μV
Adjacent Channel Selecitvity	≥65dB	≥60dB
Intermodulation	≥60dB	≥60dB
Spurious Rejection	≥70dB	≥70dB
Hum & Noise	≥45dB	≥40dB
Audio Distortion	≤5%	
Audio Power Output	1000mW/10%	
Transmitter	**Wide band**	**Narrow band**
Power Output	4W/1W (UHF)	5W/1W (VHF)
Modulation	16KΦF3E	11KΦF3E
Adjacent Channel Power	≥65dB	≥60dB
Hum & Noise	≥40dB	≥40dB
Spurious Emission	≤-36dB	≤-36dB
Audio Distortion	≤5%	

Prodotto o importato da: **MIDLAND EUROPE s.r.l.**
Via R. Sevardi 7- 42124 Reggio Emilia Italia
www.midlandreurope.com
L'uso di questo apparato può essere soggetto a restrizioni nazionali. Prima dell'uso leggere attentamente le istruzioni.

Produced or imported by: **MIDLAND EUROPE s.r.l.**
Via R. Sevardi 7 - 42124 Mancasale Reggio Emilia Italy

Imported by: **ALAN - NEVADA UK**
Unit 1 Fitzherbert Spur Farlington Portsmouth Hants. P06 1TT - United Kingdom
www.nevada.co.uk
The use of this transceiver can be subject to national restrictions. Read the instructions carefully before installation and use.

Importado por: **MIDLAND IBERIA, SA**
C/Cobalt, 48 - 08940 Cornellà de Llobregat (Barcelona - España)
www.midland.es
El uso de este equipo puede estar sujeto a la obtención de la correspondiente autorización administrativa. Lea atentamente las instrucciones antes de usar el equipo.

Vertrieb durch: **ALAN ELECTRONICS GmbH**
Daimlerstraße 1K - D-63303 Dreieich Deutschland
www.alan-electronics.de
Die Benutzung dieses Handfunkgerätes ist von den landesspezifischen Bestimmungen abhängig. Vor Benutzung Bedienungsanleitung beachten.

Importé par: **ALAN FRANCE S.A.R.L.**
10 impasse Phytagore - 13127 Vitrolles - France
www.alan-midland.fr
L'utilisation de cet appareil peut être sujet à des restrictions nationales. Avant l'utilisation, lire les instructions.

CE RoHS Compliant

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