

CT890

DUAL BAND VHF/UHF TRANSCEIVER

› INSTRUCTION GUIDE



SPECIAL FEATURES



DTMF



Repeater



2600mAh

MIDLAND®
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Index

Content of the packaging	1
Maintenance	1
Main functions	2
Main controls and parts of the radio	3
Lcd Display	3
Buttons and controls of the radio	4
Quick search	6
RPT- Single/Dual Band switch	6
A/B switch	6
'* SCAN' key	6
DTMF code	6
Reverse Frequency function	6
Low battery level	6
Working modes	6
Cloning function with the optional cable cod. R73727	7
Battery recharge	7
Functions	8
Frequency step (STEP) - MENU 1	8
Squelch level (SQL-LE) - MENU 2	8
High/low power selection (TXP) - MENU 4	9

Roger Beep at the beginning/end transmission (ROGER)	
MENU 5	9
TOT (Time Out Timer) - MENU 6	10
VOX (VOX) - MENU 7	10
Wide/narrow bandwidth (WN) - MENU 8	10
Voice function (VOICE) - MENU 9	10
TOA (Transmission Overtime Alarm) - MENU 10	11
Beep tone (BEEP) - MENU 11	11
Language of the MENU (LANGUAGE) - MENU 12	11
Busy channel lockout (BCL) - MENU 13	11
SCAN function(SC-REV) - MENU 14	12
Receiving with CTCSS tones (R-CTCSS) - MENU 15	12
Transmitting with CTCSS tones (T-CTCSS) --- MENU 16	12
Receiving with DCS codes (R-DCS) - MENU 17	13
Transmitting with DCS (T-DCS) - MENU 18	13
CALL/VFTX functions (side key PF1) - MENU 19	13
Scan / LAMP / SOS / Telealarm / Radio / Disable functions with side key 3 (PF3) - MENU 20	14
Display backlight (ABR) - MENU 22	16
Frequency offset (OFF-SET) --- MENU 23	16
Frequency shift direction (SFT-D) - MENU 24	17
Stopwatch timer (SECOND) - MENU 25	17
Channel name (CHNAME) - MENU 26	17
Storing channels (MEM-CH) --- MENU 27	18
Deleting a channel (DEL-CH) - MENU 28	18
Scan of frequencies with CTCSS/DCS (SCNCD) -MENU 29	18
Welcome message (PONMSG) - MENU 30	19
Monitor (SP-MUTE) - MENU 31	19
Sending the ID code (ANI-SW) - MENU 32	19
Setting the ID ANI code (ani-edit) - MENU 33	19
DTMF (DTMF-ST) - MENU 34	20
Keypad lock (AUTOLOCK) - MENU 35	20
Setting the priority channel (PRICH-SW) - MENU 36	20
Repeater function / Full duplex (RPT-SET) - MENU 37	21

RPT-SPK - MENU 38	21
PTT - MENU 39	21
Adding a channel to scan (SCAN ADD) - MENU 40	21
ANI code tx delay (PTT-DLY) - MENU 42	22
Transmitting the ID code (PTT-ID) - MENU 43	22
Ring time (INRG) - MENU 44	22
Group A Scan (SCG-A) - MENU 45	23
Group B Scan (SCG-B) - MENU 46	23
Repeater tone (RPT-TONE) - MENU 47	23
Scanned CTCSS/DCS tones (SC-QT) - MENU 48	23
Mute on the secondary frequency (SMUTESET) - MENU 49	24
Reset - MENU 51	24
Backlight intensity (BK-LIGHT) - MENU 52	25
Recalling and storing FM radio stations (RADIO-WR)	
MENU 53	25
Scrambler (SCRAM) - MENU 54	26
Compander (COMPANDER) - MENU55	26

Troubleshooting 27

Technical specifications

Content of the packaging

- 1 CT890 transceiver
- 1 belt clip
- 1 antenna
- 1 Li-Ion battery pack 2600mAh
- 1 desktop charger
- 1 wrist belt
- Quick guide

If any item is missing, please notify your Midland dealer.

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.

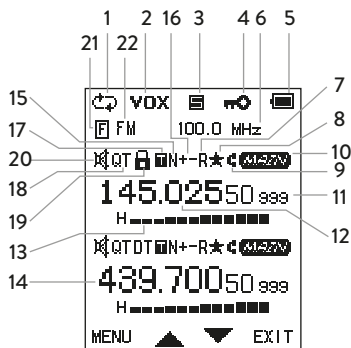
- Do not attempt to open the unit. Non-expert handling of the unit may damage it.
- Do not store the Radio under the sunshine or in hot areas.
- High temperatures can shorten the life of electronic devices, and warp or melt certain plastics.
- Do not store the radio in dusty and dirty areas.
- Keep the 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 functions

- Dual band (VHF/UHF) displayed
- Frequency band (to set according to the country/area of use): 144-146 MHz & 430-440MHz (Rx / Tx).
- Working mode: UHF-VHF, VHF-VHF o UHF-UHF
- Output power: 5W VHF /4W UHF
- Memory channels: 999
- Scrambler
- Compander
- Full Duplex
- Repeater function
- Wide colorful LCD display
- Very high efficiency Li-Ion battery pack 2600mAh
- Repeater tones
- Individual/group selective calls
- VOX function
- Chronometer
- 105 + 105 DCS codes and 50 CTCSS tones
- "VOICE" function
- SOS function
- Wide/narrow bandwidth selection 25kHz/12,5 kHz
- Channel number, Channel + Frequency or Channel name display mode available
- Reverse frequency
- Scan
- Flashlight
- FM Radio receiver
- Frequency step: 5 kHz, 6.25 kHz, 10 kHz, 12.5 kHz, 25 kHz, 50 kHz or 100kHz
- High/low power selection: high (4-5W) / low (1W)
- Frequency offset
- Repeater shift
- "Busy Channel Lock Out" function
- Tx power level indicator on the display
- Low battery vocal indicator
- Roger Beep
- TOT (time out timer) function
- Keypad lock
- Function/channel reset

Main controls and parts of the radio

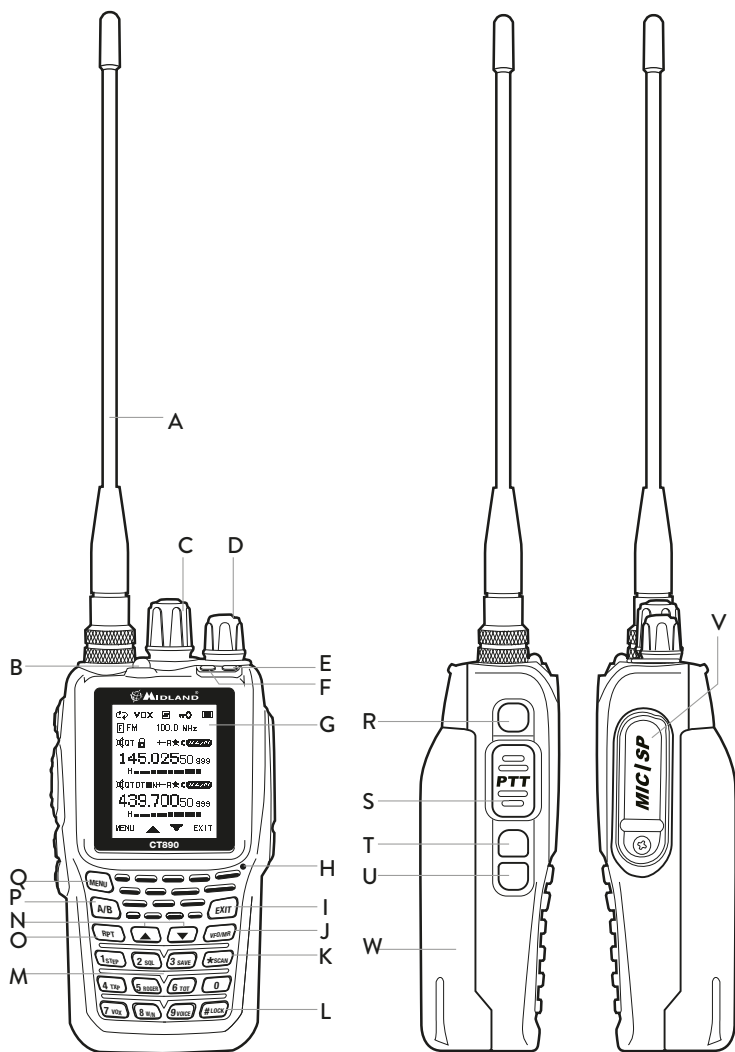
Lcd Display



- | | |
|---|--|
| 1. Cross-band repeater | 14. UHF/VHF frequency |
| 2. VOX | 15. Narrow bandwidth (N = narrow / W = wide) |
| 3. Power save mode | 16. Shift (positive / negative) |
| 4. Keypad lock | 17. Activation of QT+DTMF |
| 5. Battery indicator | 18. DCS code or CTCSS tone activated |
| 6. FM Radio frequency | 19. Scrambler function activated |
| 7. Reverse frequency | 20. Repeater function ON |
| 8. Priority channel indicator | 21. Function mode |
| 9. Indicates the latest reception | 22. FM radio band |
| 10. Band in use | |
| 11. Memory channel number | |
| 12. VHF/UHF frequency | |
| 13. Indicator of high (H)/Low (L) power transmission or reception | |

Buttons and controls of the radio

- A. **Antenna**
- B. **Flashlight**
- C. **Rotary encoder for the channel selection**
- D. **Power / Switch / Volume control:** Rotate to switch on/off the radio and adjust the volume
- E. **Transmission led (red)**
- F. **Reception led (green)**
- G. **LCD display**
- H. **Microphone**
- I. **EXIT:** to exit menu and functions
- J. **VFO/MR:** to change the frequency or the channel mode
- K. ***/SCAN:** Reverse frequency/SCAN. Press to activate the Reverse frequency; keep it pressed to activate the SCAN function.
- L. **#/LOCK:** Keypad lock/Chronometer key. Short press: this key is operative only when the chronometer is activated. Long press: keypad lock.
- M. **Alphanumeric keypad**
- N. **▲/▼ keys:** to select the functions/menu
- O. **RPT.** Short press: Single/Dual display mode. Long press: Activate or exit the repeater function.
- P. **A/B.** Switch key on master frequency: to select the desired operating frequency (VHF or UHF).
- Q. **MENU:** enters the MENU functions and confirms the selection.
- R. **Side-key PF1:** Selective call/Secondary frequency transmission key. According to the functions that you have set (menu 19 of the radio), it allows the transmission of the selective call or the repeater tone 1750Hz.
- S. **PTT**
- T. **Side-key PF2.** Long press: to activate the Monitor function. Short press: turns the flashlight on. Press it again to turn it off.
- U. **Side-key PF3:** it allows the activation of the following functions (menu 20): Scan / Display backlight off / Alarm / Emergency / FM radio.
- V. **MIC/SP:** External speaker/mike jacks.
- W. **2600mAh Li-Ion battery pack**



Quick search

Press **▼/▲** keys to set functions/parameters.

By keeping pressed these keys, a quick search of the functions will be done.

RPT- Single/Dual Band switch

To set the single/dual band switch, press **RPT**.

A/B switch

Press the **A/B** switch to select the master frequency. The master frequency is the main frequency and is shown on the display with **MAIN**.

“* SCAN” key

Press slightly the ***SCAN** key to set/disable the reverse frequency. Keep it pressed for 2 seconds to activate the Scan function.

DTMF code

Press **PTT** and push the key corresponding to the desired DTMF code.

RPT, **▲**, **▼**, **VFO/MR** correspond to A, B, C and D.

Reverse Frequency function

Using the Reverse frequency function, the transmitting and receiving frequencies can be interchanged, as well as the CTCSS and DCS codes.

In standby mode, press ***SCAN** to turn on the Reverse frequency function; press it again to turn it off.

NOTE: Ensure to set the frequency shift direction first (MENU 23 and 24).

Low battery level

When the battery pack has low power, you will hear a beep every 5 seconds and the battery icon shows the low level. If you press **PTT**, you will hear a vocal message ‘**BATTERY LOW**’.

Working modes

CT890 has 2 operating modes available: **VFO** (frequency mode) and **MR** (channel mode).

In **MR** mode, the display can show:

- Channel number
- Frequency + channel number
- Channel name

To switch from the frequency mode to channel mode can be done manually or by means of the optional programming software PRG-10.

You can also set a password for the working modes, but only by using the optional programming software:

press **MENU**; the display shows . Edit the password and press **MENU** again.

If the password is composed of a series of 0, no password must be edited to enter the working mode.

Cloning function with the optional cable cod. R73727

This function allows you to copy/transfer all data and settings from one radio to another one; the procedure is very simple and does not need a PC: just insert the two plugs of the cloning cable into the jack of the two radios.

1. Connect the optional cable R73727 to both radios.
2. Turn on the radio 'slave' (radio to program).
3. Press PF3 key on the radio master (radio to be copied) and turn it on at the same.
4. The red led on the radio master starts blinking and the display shows '**COPYING**': the cloning function is being activated. At the end, the led turns off and the display shows '**FINISHED!**'; if the red led remains steady, the cloning procedure failed.
5. On the radio slave the green led blinks while cloning and turns off when the procedure is finished.
6. Both radios will make a reset and will be ready for use.

Battery recharge

Insert the AC plug into the 240V socket. The charger's led starts blinking, indicating that it is in charging stand-by. Insert the transceiver or only the battery pack into the charger cradle. The red led turns on indicating that the battery pack is being charged. Once the led turns green, the battery pack is fully charged.

NOTE: If the battery pack is totally discharged, the red led will be blinking for 10/20 minutes, then it will be steady red. Once the led turns green, the battery is fully charged.

Functions

CT890 displays at the same time 2 frequency bands: the **master frequency** (for transmission) that is indicated on the display with 'MAIN' and the other one is the **secondary frequency** and only can be used to receive.

- To choose the desired frequency (master or secondary), press the **A/B** key.
- **Under Frequency mode:** the following 9 functions can be set on both Bands: frequency step, output power, squelch level, channel bandwidth, CTCSS, DCS, Frequency shift direction, frequency offset, and Channel displaying mode.
- **Under Channel mode:** the following 7 functions can be set on both Bands: Busy channel lockout, CTCSS, DCS, channel bandwidth, frequency step, frequency shift direction and frequency offset.

Frequency step (STEP) - MENU 1

In stand-by mode press **MENU + 1**; the display will show "STEP"

Press **MENU** to enter the function and then the **▼/▲** keys to select the desired frequency step. Push **MENU** again to confirm you selection.

To return to standby mode press **EXIT**.

CT890 has 7 frequency steps available: 5.00KHz, 6.25KHz, 10.00KHz, 12.50KHz, 25.00KHz, 50.00KHz and 100KHz.

Squelch level (SQL-LE) - MENU 2

This function turns on the Squelch when the signal is strong; the Squelch will stay off when the signal is weak. Set the same DCS codes of your group and turn on the squelch.

By setting the level too high, you may not receive the weak signals; while by setting it too low you may receive noises or undesired signals.

NOTE: This transceiver has 10 (0-9) available levels: 0 means that the Squelch is turned on. From level 1 to level 9 you will have different levels of noises reduction. The higher is the level, the louder will be the Squelch.

In standby mode, press **MENU + 2**. The screen displays "SQL".

Press **MENU** to enter to function. Press the **▲/▼** buttons or rotate the encoder knob to select the desired Squelch level, then press **MENU** to confirm. To return to the standby mode press **EXIT**.

Power save (SAVE) - MENU 3

To save battery power, this function can turn off the transceiver when no signal is received.

In standby mode, press **MENU + 3**. The screen displays “SAVE”.

Press **MENU** to enter the function. Press the ▲/▼ buttons or rotate the encoder knob to select **ON** or **OFF**, then press **MENU** to confirm.

To return to the standby mode press **EXIT**.

High/low power selection (TXP) - MENU 4

You can choose between 5W (HIGH) or 1W (LOW) output power.

In frequency mode, press **MENU + 4**. The screen will display “TXP”.

Press **MENU** to enter the function. Press the ▲/▼ keys or rotate the encoder to select **HIGH** or **LOW** power, then press **MENU** to confirm.

To return to the standby mode press **EXIT**.

Roger Beep at the beginning/end transmission (ROGER) - MENU 5

Thanks to this function you can select the Roger Beep tone with the following options:

- **OFF**: Roger Beep turned off (no tones).
- **BOT**: Roger Beep tone heard when the **PTT** button is pressed (when transmission begins)
- **EOT**: Roger Beep tone heard when the **PTT** button is released (when transmission ends)
- **BOTH**: Roger Beep tone heard when you press and release the **PTT** button

In standby mode, press **MENU + 5**. The screen will display “ROGER”.

Press **MENU** to enter the function. Press the ▲/▼ keys or rotate the encoder to select **OFF/BOT/EOT/BOTH**, then press **MENU** to confirm.

To return to the standby mode press **EXIT**.

TOT (Time Out Timer) - MENU 6

The TOT function is used to prevent a too long transmission. This function temporarily blocks transmissions if the radio has been used beyond the maximum time permitted. Once reached the preset timer, the radio will be forced in reception mode. When a transmission exceeds the pre-set time, you will hear a warning sound to remind you that the transmission time is almost finished.

The transmission time can be set in 60 levels with 15 seconds each (between 15 and 900 seconds).

In standby mode, press **MENU + 6**; the screen will display “TOT”.

Press **MENU** to enter the function. Press the **▲/▼** buttons or rotate the encoder to select the desired TOT level, then press **MENU** to confirm.

To return to the standby mode press **EXIT**.

VOX (VOX) - MENU 7

This function allows hands-free conversations: just speak in the direction of the microphone and the communication will be automatically activated.

In standby mode, press **MENU + 7**. The screen will display “VOX”.

Press **MENU** to enter the function. Press the **▲/▼** buttons or rotate the encoder to turn off the VOX function or to select the VOX level (1-10), then press **MENU** to confirm.

To return to the standby mode press **EXIT**.

NOTE: level 1 is the least sensitive while level 9 is the most sensitive. When the radio is in Scan or FM Radio mode, the VOX is not enabled.

Wide/narrow bandwidth (WN) - MENU 8

In standby mode, press **MENU + 8**. The display will show “WN”.

Press **MENU** to enter the function. Press the **▲/▼** keys or rotate the encoder to select **WIDE/NAR** (25/12,5KHz) bandwidth, then press **MENU** to confirm. To return to the standby mode press **EXIT**.

Voice function (VOICE) - MENU 9

In standby mode, press **MENU + 9**; the screen will display “VOICE”.

Press **MENU** to enter the function. Press the **▲/▼** buttons or rotate the encoder to select **OFF/ON**. Confirm your selection by pressing **MENU**.

To return to the standby mode press **EXIT**.

TOA (Transmission Overtime Alarm) - MENU 10

With the TOA function enabled, if the TOT function (Time Out Timer) has been turned on and your transmission reaches the pre-set end-transmission time, the transceiver will warn you and the TX red indicator starts blinking. You can set from 1 to 10 TOA levels. Level 1 means that the transceiver warns you 1 second before the transmission reaches the TOT; level 2 warns you 2 seconds before the TOT and so on.

In standby mode, press **MENU + 10**. The display will show “TOA”. Press **MENU** to enter the function. Press the ▲/▼ buttons or rotate the encoder to select **OFF** or 1 of the 10 levels, then press **MENU** to confirm. To return to the standby mode press **EXIT**.

Beep tone (BEEP) - MENU 11

If you enable this function, every time a button is pressed, you will hear a Beep tone.

In standby mode, press **MENU + 11**. The screen will display “BEEP”. Press **MENU** to enter the function. Press the ▲/▼ buttons or rotate the encoder to turn **ON/OFF** the beep function. Press **MENU** to confirm and **EXIT** to return to stand-by mode.

Language of the MENU (LANGUAGE) - MENU 12

This section shows the language of the **MENU** (english). In standby mode press **MENU + 12**; the display will show “LANGUAGE”.

Busy channel lockout (BCL) - MENU 13

When this function is active, if you select a busy channel and press the **PTT**, the transceiver will not transmit.

In standby mode, press **MENU + 13**. The screen will display “BCL”. Press **MENU** to enter the function. Press the ▲/▼ buttons or rotate the encoder to select **ON/OFF**, then press **MENU** to confirm. To return to the standby mode press **EXIT**. This function is not active when the Repeater function is enabled.

SCAN function(SC-REV) - MENU 14

This transceiver has 3 Scan modes:

- **TO - Time-operated Scan**
Whenever a signal is detected, the radio will suspend the scan for 5 seconds, and then will continue to scan even if the signal is still present.
- **CO: Carrier-operated Scan**
Whenever a signal is detected, the radio will stop scanning. It will resume to scan once the signal will be no more present.
- **SE: Search Scan**
The radio will stop scanning and **EXIT** the Scan mode once detected a signal.

In standby mode, press **MENU + 14**. The screen displays “**SC-REV**”.

Press **MENU** to enter the function. Press the **▲/▼** buttons or rotate the encoder to select the desired Scan mode, then press **MENU** to confirm.

To return to the standby mode press **EXIT**.

To start the scan keep pressed ***SCAN** for 2 seconds.

Receiving with CTCSS tones (R-CTCSS) - MENU 15

CTCSS tones are similar to access codes and enable the radio to communicate with the users that are tuned on the same channel and have set the same CTCSS tone.

In frequency mode, press **MENU + 15**. The screen displays “**R-CTC**”.

Press **MENU** to enter the function. Press the **▲/▼** buttons or rotate the encoder to turn **OFF** this function or to select a CTCSS tone from 67.0Hz to 254.1Hz. Press **MENU** to confirm and **EXIT** to return to the standby mode press.

NOTE: This transceiver has 50 CTCSS groups.

Transmitting with CTCSS tones (T-CTCSS) --- MENU 16

In standby mode, press **MENU + 16**. The screen displays “**T-CTC**”.

Press **MENU** to enter the function. Press the **▲/▼** keys or rotate the encoder to turn **OFF** this function or to select a CTCSS tone from 67.0Hz to 254.1Hz, then press **MENU** to confirm.

To return to the standby mode press **EXIT**.

NOTE: This transceiver has 50 CTCSS groups.

Receiving with DCS codes (R-DCS) - MENU 17

DCS codes are similar to access codes and can be added to channels, so as to create a sort of personal channel. They enable the radio to communicate with the users that are tuned on the same channel and have set the same DCS code.

In frequency mode, press **MENU + 17**. The screen displays “**R-DCS**”.

Press **MENU** to enter the function. Press the **▲/▼** buttons or rotate the encoder to turn **OFF** this function or to select a DCS code from D023N to D754I.

Press **MENU** to confirm and **EXIT** to return to the standby mode.

NOTE: You can set up to 105 DCS N and 105 DCS I codes.

Transmitting with DCS (T-DCS) - MENU 18

In standby mode, press **MENU + 18**. The screen displays “**T-DCS**”.

Press **MENU** to enter the function. Press the **▲/▼** buttons or rotate the encoder to turn **OFF** this function or to select a DCS code from D023N to D754I, then press **MENU** to confirm.

To return to the standby mode press **EXIT**.

NOTE: You can set up to 105 DCS N and 105 DCS I codes.

CALL/VFTX functions (side key PF1) - MENU 19

The side key **PF1** can be associated to one of the following functions:

CALL (selective calls) / **VFTX** (transmission on the secondary band).

NOTE: the selective call can be programmed by means of the optional programming software PRG-10.

In Standby mode press **MENU + 19**; “**PF1**” will appear on the display.

Press **MENU** to enter the function. Press the **▼/▲** keys or rotate the encoder to activate one of the 2 functions and confirm by pushing **MENU** again.

Press **EXIT** to return to the standby mode.

Scan / LAMP / SOS / Telealarm / Radio / Disable functions with side key 3 (PF3) - MENU 20

The side key PF3 can enable the following functions:

- **SCAN**: Channel Scan
- **LAMP**: display backlight off
- **SOS**: SOS function
- **TELEALARM**: tele-alarm function
- **RADIO**: FM radio
- **DISABLE**: disabling the functions

1. Channel Scan:

In standby mode, press **MENU + 20**. The screen displays “PF3”.

Press **MENU** to enter the function. Press the ▲/▼ buttons or rotate the encoder to select the desired function, then press **MENU** to confirm. To return to the standby mode press **EXIT**.

Once the function is enabled, press the Side key **PF3** to enter the Scan mode (Scan mode can be set through **MENU + 14**. To stop scanning, press any key.

2. Display backlight off:

In standby mode, press **MENU + 20**. The screen displays “PF3”.

Press **MENU** to enter the function. Press the ▲/▼ buttons or rotate the encoder to select **LAMP**, then press **MENU** to confirm.

To return to the standby mode press **EXIT**.

3. SOS:

In emergency situations, the SOS function transmits an SOS signal/emergency calls. You will hear a beep and the two leds will alternately blink.

The emergency signal will be transmitted every 5 minutes, lasting for 10 seconds each time.

To stop transmitting, press **PTT**.

If a carrier signal is detected during the transmission interval, the radio switches to reception.

In standby mode, press **MENU + 20**. The screen displays “PF3”.

Press **MENU** to enter the function. Press the ▲/▼ buttons or rotate the encoder to select **SOS**; the screen will display “SOS”.

Press **MENU** again to confirm. You will hear a tone and the leds will alternately blink. Now the SOS function is set.

Once the function has been enabled, if you press the PF3 side key, the transceiver will transmit the SOS signal.

4. TELEALARM:

The radio transmits an ID code (ANI ID) followed by 110. Then, there will be a sound and visual warning and the radio will switch to reception. This procedure is repeated more times.

In Standby mode press **MENU + 20**; the display will show “**PF3**”.

Press **MENU** to enter the function. Press **▼/▲** keys or rotate the encoder to select Telealarm and confirm by pushing **MENU**.

With the **EXIT** key you return to standby mode.

5. RADIO:

Turn on the Radio: In standby mode, press the side key **PF3** to turn on the function. The display will show the frequency in use and the FM radio frequency.

Tune the radio stations: In Radio mode, press ***SCAN**. The radio will search the stations automatically and will stop once found the station.

Manually searching an FM station: keep pressed the **RPT** key for 2 seconds, then edit the desired FM station. To **EXIT** FM Radio mode press PF3.

NOTE: When you are listening to the radio, the current frequency/channel is still in use.

To transmit, press the PTT button. Once the transmission ends, after 5 seconds, the radio will return to FM Radio mode.

Working mode (CH-MDF) - MENU 21

CT890 has four working modes available:

1. Frequency mode (FREQ)
2. Channel mode (CH)
3. Frequency + channel number (CH FREQ)
4. Channel name (NAME)

To shift from one mode to another one:

In Standby mode press **MENU + 21**; select the desired working mode with the **▼/▲** keys or with the encoder knob.

Push **MENU** again to confirm your selection.

Display backlight (ABR) - MENU 22

In standby mode, press **MENU + 22**. The screen will display “**ABR**”.

Press **MENU** to enter the function. Push the **▲/▼** buttons or rotate the encoder to enable/disable (**ON/OFF**) the backlight of the display, then press **MENU** to confirm.

To return to the standby mode press **EXIT**.

Frequency offset (OFF-SET) --- MENU 23

The offset is the frequency difference between transmission and reception. The frequency offset of this radio is between 0 and 599.995 MHz.

In standby mode, press **MENU + 23**. The screen will display “**OFFSET**”.

Press **MENU** to enter the function. Press the **▲/▼** buttons or rotate the encoder to select the frequency offset or you can manually digit the offset with the keypad. Press **MENU** to confirm.

To return to the standby mode press **EXIT**.

With the frequency offset, it is possible to transmit and receive in two different frequencies.

You have to:

1. Set the working mode

2. Set the frequency shift direction and then the frequency offset

E.g.: if you want to receive on 430.025MHz frequency and transmit on 435.026MHz frequency: in Frequency mode, digit 4 3 0 0 2 5 then press **MENU + 24 + MENU** to enter and set the frequency shift direction.

Select +(positive direction) and press **MENU** to confirm. Press **EXIT** to **EXIT** the function.

Press **MENU + 23 + MENU** to enter the offset frequency function and then digit the frequency deviation (5000).

Press **MENU** and then **EXIT** to exit the function.

Now the frequency shift direction and frequency offset have been set.

Frequency shift direction (SFT-D) - MENU 24

In standby mode, press **MENU + 24**. The screen will display “SFT-D”.

Press **MENU** to enter the function. Press the ▲/▼ buttons or rotate the encoder to select **+/-/OFF**, then press **MENU** to confirm.

To return to the standby mode press **EXIT**.

+ (positive offset): If the transmitting frequency is higher than the rx frequency.

- (negative offset): If the transmitting frequency is lower than the rx frequency.

OFF: frequency shift turned off.

NOTE: if the frequency offset is out of the allowed frequency band, the radio cannot transmit. So please make sure that the frequency offset and the rx frequency are within the allowed frequency range.

Stopwatch timer (SECOND) - MENU 25

In standby mode, press **MENU + 25**. The screen displays “SECOND”.

Press **MENU** to enter the function. Press the ▲/▼ buttons or rotate the encoder to enable/disable (**ON/OFF**) the function, then press **MENU** for confirmation. To return to the standby mode press **EXIT**.

Using the stopwatch timer:

When this function is **ON**, press ‘**#LOCK**’ to start counting; to stop counting you can press any key.

Press ‘**#LOCK**’ again to re-start counting.

To **EXIT** the function, stop the counting first, and then press the **EXIT** button.

Channel name (CHNAME) - MENU 26

To set the channel name you have at your disposal 26 letters (A-Z) and 10 numbers (0-9). You can use up to 8 characters for the channel name.

Procedure:

1. To display the name of the channels, press **MENU + 21**.
2. Select the desired channel, then press **MENU+ 26 + MENU**. The screen displays eight ‘_’ symbols.
3. Edit the desired channel name with the keypad and then confirm by pushing **MENU**. To exit the function press **EXIT**. The screen displays the channel name and also the channel number on the right corner of the display.

Storing channels (MEM-CH) --- MENU 27

In Frequency and in Standby mode, you can store frequencies and parameters. Press **MENU + 27**; the screen will display “MEM-CH”.

Press **MENU** to enter the function. Press the ▲/▼ buttons to select the channel, then press **MENU** to store it. A sound tone will confirm that the storing succeeded. Press **EXIT** to exit to return to standby mode.

NOTES

If you want to set CTCSS tones, DCS codes or the frequency offset, you have to do it before storing the channel.

The channels already stored are displayed in black, while the others are blue.

Deleting a channel (DEL-CH) - MENU 28

In standby mode, press **MENU + 28**; the screen will display “DEL-CH”.

Press **MENU** to enter the function. Press the ▲/▼ buttons or rotate the encoder to select the channel you want to delete, then press **MENU** to confirm. To return to the standby mode press **EXIT**.

NOTE: Channel 1 cannot be deleted.

Scan of frequencies with CTCSS/DCS (SCNCD) -MENU 29

This function enables the scan of frequencies with CTCSS or DCS codes.

When the transceiver is in receiving mode, press **MENU + 29**, the screen displays “SCNCD”.

Press **MENU** to enter the function. Press the ▲/▼ buttons or rotate the encoder to select Scan CTCSS or Scan DCS, then press **MENU** to confirm. The transceiver starts scanning frequencies with CTCSS/DCS.

NOTES:

This function cannot work under channel mode.

The Scan will start only when the rx band detects signals.

Once the CTCSS and DCS frequencies are picked up, they will appear on the display.

Welcome message (PONMSG) - MENU 30

In this section you can set a message that is displayed when you turn on the radio.

You can choose between these two options:

- **BITMAP** (default message. The Midland brands appears)
- **BATT-V** (the display will show the battery level).

In Standby mode press **MENU + 30**; the display will show “**PONMSG**”.

Press **MENU** to enter the function. Push the **▼/▲** keys or rotate the encoder to select the desired option and confirm with **MENU**.

To return to the standby mode, press **EXIT**.

Monitor (SP-MUTE) - MENU 31

With this function, the monitor opens if one of these options is detected:

QT: when CT890 is set in this mode, the monitor feature is activated only when the radio receives the correct CTCSS tones.

- **QT + DTMF**: with this option, the monitor is activated when the radio receives the correct CTCSS tone and the correct DTMF code.
- **QT*DTMF**: the monitor is activated when the radio receives the correct CTCSS tone or the correct DTMF code.

In Standby mode press **MENU + 31**; the display will show “**SP-MUTE**”.

Press **MENU** to enter the function. Push the **▼/▲** keys or rotate the encoder to select the desired option and confirm with **MENU**. To return to the standby mode, press **EXIT**.

Sending the ID code (ANI-SW) - MENU 32

With this function, you can send the identifier code of your radio.

In Standby mode press **MENU + 32**; the display will show “**ANI-SW**”.

Press **MENU** to enter the function. Push the **▼/▲** keys or rotate the encoder to select **ON/OFF** and confirm with **MENU**. To return to the standby mode, press **EXIT**.

Setting the ID ANI code (ani-edit) - MENU 33

The identifier code is composed of 10 digits (0-9); the first one cannot be 0.

The ANI code must be composed of 3 digits to 6 max.

In Standby mode press **MENU + 33**; the display will show “**ANI-EDIT**”.

Press **MENU** to enter the function. Edit the ANI code with the keypad and confirm with **MENU**. To return to the standby mode, press **EXIT**.

DTMF (DTMF-ST) - MENU 34

With this **MENU** you can select the following options:

- **DT-ST**: if you press any key on the keypad during transmission, the speaker will send out the corresponding DTMF tone.
- **ANI-ST**: when you press **PTT**, the speaker will send out the corresponding ANI code.
- **DT+ANI**: when transmitting, the ANI code and the DTMF tones will be activated by the speaker of the radio.
- **OFF**: DTMF disabled.

In Standby mode press **MENU + 34**; the display will show “**DTMF-ST**”.

Press **MENU** to enter the function. Push the **▼/▲** keys or rotate the encoder to select **ON/OFF** and confirm with **MENU**.

To return to the standby mode, press **EXIT**.

Keypad lock (AUTOLOCK) - MENU 35

This transceiver has 2 types of Keypad lock available: Auto-lock and Manual-lock.

In standby mode, press **MENU + 35**. The screen will display “**AUTOLOCK**”.

Press **MENU** to enter the function. Press the **▲/▼** buttons or rotate the encoder to select **ON/OFF**, then press **MENU** to confirm and **EXIT** to return to the standby mode.

If you select:

- **ON**: the keypad lock function will be activated. With this function enabled, the keypad will be locked automatically if there is no operation within 15 seconds. Keep pressed ‘**#LOCK**’ for 2 seconds to unlock the keypad.
- **OFF**: the keypad lock function is not enabled.

Setting the priority channel (PRICH-SW) - MENU 36

The priority channel can be set by means of the optional programming software. The PRICH-SW function is associated to the scan feature; the options available are two: **OFF/ON**.

In Standby mode press **MENU + 36**; the display will show “**PRICH-SW**”.

Press **MENU** to enter the function. Push the **▼/▲** keys or rotate the encoder to select the desired option (**ON/OFF**) and confirm with **MENU**.


To return to the standby mode, press **EXIT**.

- **OFF**: function deactivated
- **ON**: the radio will alternately scan the channels and the priority channel.

Repeater function / Full duplex (RPT-SET) - MENU 37

CT890 can operate in two different modes:

- **X-DIRPT:** Cross band repeater (VHF / UHF or UHF / VHF)
- **X-TWRPT:** Full Duplex TX/RX (default setting)

X-DIRPT: in this mode, the signal received in VHF or UHF band will be automatically transmitted on the other band (VHF→UHF / UHF→VHF). The display will show the  icon to indicate that the radio is working in this mode.

X-TWRPT: the radio transmits and receives at the same time, exactly as in a phone conversation; keep pressed the **RPT** key and the full duplex mode is active.

With the programming software you can set the tx delay when you release the **PTT**.

RPT-SPK - MENU 38

This function deactivates the speaker when the repeater function is enabled.

In Standby mode press **MENU + 38**; the display will show “**RPT-SPK**”.

Press **MENU** to enter the function. Push the **▼/▲** keys or rotate the encoder to select **ON/OFF** and confirm with **MENU**.

To return to the standby mode, press **EXIT**.

PTT - MENU 39

In this **MENU** you can disable the **PTT** when the repeater function is active.

In Standby mode press **MENU + 39**; the display will show “**RPT-PTT**”.

Press **MENU** to enter the function. Push the **▼/▲** keys or rotate the encoder to select **ON/OFF** and confirm with **MENU**. To return to the standby mode, press **EXIT**.

Adding a channel to scan (SCAN ADD) - MENU 40

With this function you add a channel to the scan channel list.

To enable it, you must first set the radio to CH mode.

In Standby mode press **MENU + 40**; the display will show “**SCAN-ADD**”.

Press **MENU** to enter the function. Push the **▼/▲** keys or rotate the encoder to select **ON/OFF** and confirm with **MENU**. To return to the standby mode, press **EXIT**.

Alert tone (ALERT) - MENU 41

In this section you set the alert tone; you can choose amongst the following alert tones: 1750Hz, 2100Hz, 1000Hz and 1450Hz.

In Standby mode press **MENU + 41**; the display will show “**ALERT**”.

Press **MENU** to enter the function. Push the **▼/▲** keys or rotate the encoder to select one of above mentioned frequencies and confirm with **MENU**. To return to the standby mode, press **EXIT**.

To send out the alert tone, press **PTT** and then keep pressed the side key PF2.

ANI code tx delay (PTT-DLY) - MENU 42

This function allows you to set the delay in sending the ANI code once the **PTT** is pressed (ANI delay).

You can set it between 100 and 3000ms (30 levels of 100ms each).

To set the delay press **MENU + 42**; “**PTT-DLY**” will appear on the display.

Press **MENU** to enter the function. Select the desired level with the **▼/▲** keys or by rotating the encoder.

Press **MENU** again for confirmation and **EXIT** to return to standby mode.

Transmitting the ID code (PTT-ID) - MENU 43

With this function you can decide when sending the ANI code in tx mode.

The possibilities are 3:

- **BOT**: the code is sent when you press the **PTT**
- **EOT**: the code is sent when the **PTT** is released
- **BOTH**: the code is sent when you press and release the **PTT**

In Standby mode press **MENU + 43**; the display will show “**PTT-ID**”.

Press **MENU** to enter the function. Push the **▼/▲** keys or rotate the encoder to select the desired option and confirm with **MENU**.

To return to the standby mode, press **EXIT**.

Ring time (INRG) - MENU 44

With this **MENU** you can select the ring time that you hear when the radio receives its ANI code.

To set the ring time **MENU + 44**; the display will show “**RING**”.

Press **MENU** to enter the function. With the **▼/▲** keys or with the encoder selection the desired option:

- **from 1 to 10 seconds**
- **OFF**

Press **MENU** again for confirmation and **EXIT** to return to standby mode.

Group A Scan (SCG-A) - MENU 45

Scan can also be done on programmed channel groups; this section describes the scan of channels belonging to Group A.

You can set 10 groups of 100 channels each.

Press **MENU + 45**; “**SCG-A**” will appear on the display.

Press **MENU** to enter the function. With the **▼/▲** keys or with the encoder select the desired option (ALL = all channels / G-10: group of channels). Press **MENU** again for confirmation and **EXIT** to return to standby mode.

Channels must be added to the channel list with the procedure described in **MENU 40** or through the optional programming software.

Group B Scan (SCG-B) - MENU 46

With this **MENU** you make a scan of channels belonging to Group B.

You can set 10 groups of 100 channels each.

Press **MENU + 46**; the display will show “**SCG-B**”.

Press **MENU** to enter the function. Select the desired option with the **▼/▲** keys or with the encoder (ALL = all channels / G-10: group of channels). Press **MENU** again for confirmation and **EXIT** to return to standby mode.

Channels must be added to the channel list with the procedure described in **MENU 40** or through the optional programming software.

Repeater tone (RPT-TONE) - MENU 47

With this function you enable the repeater tone at the end of transmission; it is very useful for some repeaters.

In Standby mode press **MENU + 47**; the display will show “**RPT-TONE**”.

Press **MENU** to enter the function. Press the **▼/▲** keys or rotate the encoder to select **ON/OFF**. Confirm with **MENU** and return to standby mode with the **EXIT** key.

Scanned CTCSS/DCS tones (SC-QT) - MENU 48

This function is helpful to decode a CTCSS/DCS tone if you don't know the exact code:

- **ALL (ENCODER + DECODER)**
- **ENCODER**
- **DECODER**

Press **MENU + 48**; the display will show “**SC-QT**”.

Press **MENU** to enter the function. Select one of the 3 options with the **▼/▲**

keys or with the encoder. Press **MENU** again for confirmation and **EXIT** to return to standby mode.

To make a scan of these tones, see par. **MENU 29**.

Mute on the secondary frequency (SMUTESET) - MENU 49

The Mute function deactivates the volume on the secondary frequency. It is very useful, especially when you operate in dual band VHF/VHF; UHF/VHF; UHF/UHF.

In Standby mode press **MENU + 49**; the display will show “**SMUTESET**”.

Press **MENU** to enter the function. With the **▼/▲** keys or with the encoder select one of the following options:

- **OFF**: function deactivated
- **TX**: when the main frequency is transmitting, the reception volume of the secondary frequency is disabled
- **RX**: when the main frequency is receiving, the reception volume of the secondary frequency is disabled
- **TX/RX**: when the main frequency is transmitting and receiving, the reception volume of the secondary frequency is disabled

Confirm with **MENU** and press **EXIT** to return to the standby mode.

Setting of group selective call code (CALL CODE) - MENU 50

The selective calls can be programmed with the optional programming software PRG-10.

With this **MENU** you can select the call groups previously set with PRG-10.

In Standby mode press **MENU + 50**; the display will show “**CALL CODE**”.

Press **MENU** to enter the function. Press the **▼/▲** keys or rotate the encoder to select the desired code. Confirm with **MENU** and return to standby mode with the **EXIT** key.

Reset - MENU 51

This transceiver has two Reset modes available: **VFO** and **ALL**.

- **RESET VFO**: all the settings except channels will return to the default settings.
- **RESET ALL**: all settings will return to the default settings.

1. Reset (VFO)

In standby mode, press **MENU + 51**; the screen will display “**RESET**”.

Press **MENU** to enter the function. Press the **▲/▼** buttons or rotate the

encoder to select **VFO**, then press **MENU** to confirm.

The display will show “**RESET SURE?**”. Press **MENU** again to confirm and the screen will display “**PLEASE WAIT**”. Then, the transceiver will turn off and reboot again.

2. **Reset (ALL)**

In standby mode, press **MENU + 51**. The screen displays “**RESET**”.

Press **MENU** to enter the function. Press the **▲/▼** buttons or rotate the encoder to select **ALL**, then press **MENU** to confirm.

The display will show “**RESET SURE?**”. Press **MENU** again to confirm; the screen will display “**PLEASE WAIT**”. Then, the transceiver will turn off and reboot again.

Backlight intensity (BK-LIGHT) - MENU 52

This function allows to set the backlight intensity level.

There are 9 levels available; level 1 corresponds to the lowest level.

Procedure:

4. In standby mode press **MENU + 52**; the display will show “**BK-LIGHT**”.
5. Press **MENU** to enter the function.
6. Press the **▼/▲** controls or rotate the encoder to select the desired backlight level.
7. Confirm your setting by pushing the **MENU** button.

Recalling and storing FM radio stations (RADIO-WR) - MENU 53

To enable these functions, **CT890** must be in **FM Radio mode**.

Once set this mode, press **MENU+53**: the display will show “**RADIO-WR**”.

Press the **MENU** button again and select the desired option; the two options available are: **RECALL** or **MEMORY**.


RECALL to recall the radio stations set by the programming software. You can store up to 20 frequencies.

MEMORY the radio station you are listening to can be stored as one of the 20 available. Once you set the desired position, confirm your selection by pressing the **MENU** button.

Scrambler (SCRAM) - MENU 54

The scrambler is designed to protect communications. This feature prevents parties of other networks from hearing and understanding your voice communications.

Procedure:

1. press **MENU+54**: “**SCRAM**” will appear on the display.
2. Press again the **MENU** button, select the desired scrambler code (between 1 and 8) by pushing the ▼/▲ buttons or by rotating the Encoder.
3.  will appear on the display.

Compander (COMPANDER) - MENU55

This function allows to reduce the noise in rx and so as enhance the performance of your radio.

To activate it:

1. press **MENU+55**, the display will show “**compander**”.
2. Press **MENU** to enter this function.

Press the ▼/▲ controls or rotate the encoder: select **ON** and confirm by pushing **MENU**.

Troubleshooting

PROBLEM	SOLUTION
The radio doesn't switch on	The battery may be exhausted. Re-charge it.
	Uncorrected installation. Re-install it.
Battery recharge doesn't last long	The battery pack is over. Change it with a new one. Battery pack is not completely charged.
Reception led turns on but no sound heard	Make sure the volume is not too low. Make sure to have the same CTCSS and DCS codes of your group
The keypad doesn't work	Keypad lock function hasn't been enabled
Reception of other group signal while transmitting	Change another CTCSS/DCS for your group

Technical specifications

Frequency band	144-146MHz & 430-440MHz (Rx / Tx)
Memory channels	999
Power supply	Li-Ion battery pack 7.4V/2600 mAh
Operating temperature	-25°C to + 55°C
Working mode	monoband/dualband
Output power	VHF: 5W / UHF:4W
Modulation	F3E(FM)
Max. frequency deviation	$\leq \pm 5\text{KHz}$
Spurious radiation	$< -60\text{dB}$
Frequency stability	$\pm 2.5\text{ ppm}$
Rx sensitivity	$< 0.2\mu\text{V}$
Audio output power	$\geq 500\text{mW}$
Dimensions	62x125x40mm (LxAxP)
Weight	278g

Specifications are subject to change without notice.

WARNING. Direct plug-in ac/dc power supply must be used for disconnecting the transceiver from the mains; the desktop charger must be positioned close to the unit and easily accessible.



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Prodotto o importato da:

CTE INTERNATIONAL s.r.l.

Via. R.Sevardi 7 - 42124 Reggio Emilia Italia

www.cte.it - www.midlandeurope.com

L'uso di questo apparato può essere soggetto a restrizioni nazionali. Prima dell'uso leggere attentamente le istruzioni.

Produced or imported by:

CTE INTERNATIONAL s.r.l.

Via. R.Sevardi 7 42124 Mancasale Reggio Emilia Italy

Imported by:

ALAN - NEVADA UK

Unit 1 Fitzherbert Spur Farlington Portsmouth Hants.

PO6 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:

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