TECSUN

TECSUN

PL-210

PLL FM-Stereo/MW/SW/LW Dual Conversion Radio

OPERATION MANUAL

www.tecsunradio.com

hch@cantonmade.com
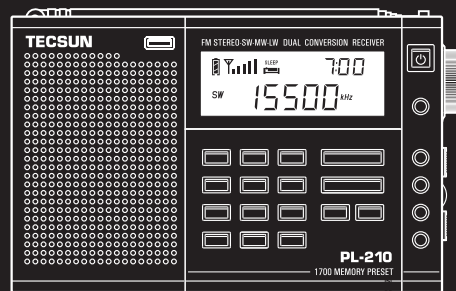
TECSUN ELECTRONIC IND. LTD.

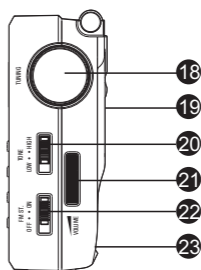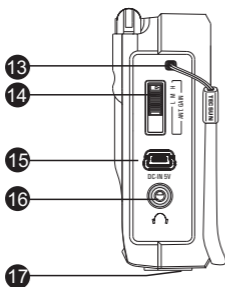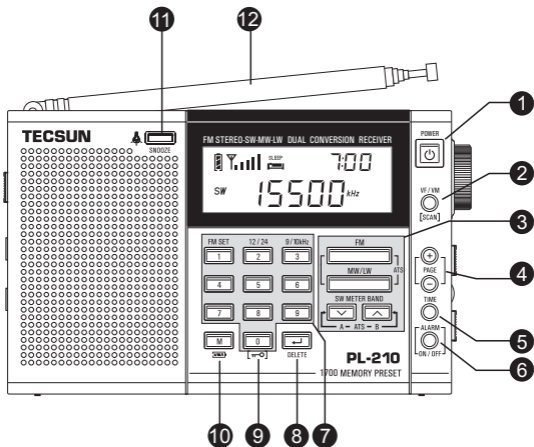## TABLE OF CONTENTS

SPECIFICATIONS

1. Frequency rang:
   FM: 76~108 / 87~108 MHz
   MW: 522~1620 / 520~1710 kHz
   LW: 150~519 kHz
   SW: 1711~29999 kHz

   AM Tuning Step: 9k for North America or other countries/
   10k for South America

2. Sensitivity
   FM (S/N=30dB)   Less than 3μV
   MW (S/N=26dB)   Less than 1mV/m
   LW (S/N=26dB)   Less than 5mV/m
   SW (S/N=26dB)   Less than 20μV

3. Selectivity
   FM >25 dB
   MW >40 dB
   LW >40 dB
   MW >25 dB

4. FM Stereo crosstalk   Less than 24 dB

5. Speaker output: 250 mW
   Earphone output: 10 mW

6. Power: UM3 or AA X 3 or USB 5V DC

7. Speaker: φ50mm, 500mW/12 Ohm

8. Earphone Jack: φ3.5mm, 32 Ohm, Stereo type

9. Quiescent current
   FM < 27mA
   MW/LW < 45mA
   SW < 53mA
   OFF/ Standby state   < 40 uA

10. Unit Dimensions: approx. 125(W) X 75(H) X 26(D) mm

11. Weight: 200g (Batteries not included)

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CONTROL LOCATIONS

1. Power
2. VF/VM & Scan
3. Band Selector & Auto Tuning Storage
4. PAGE + / -
5. Time Set
6. Alarm Set
7. 0~9 Numeric Keypad
8. Delete
9. Lock
10. Memory / Battery
11. Light / Snooze
12. FM & SW Telescopic Antenna
13. Hand Carry Belt
14. ANT. Gain (H / M / L)
15. DC-IN Jack (USB 5V)
16. Earphone Jack
17. Reset
18. Multifunctional Tuning Knob
19. Back Stand
20. Low / High Tone
21. Volume Knob
22. FM ST. On/Off
23. Battery Compartment

LCD DISPLAY
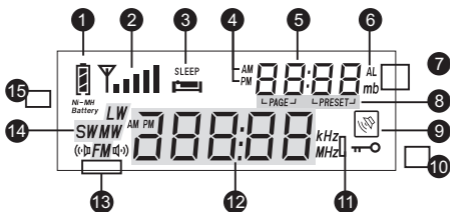
1 Battery consumption indicator
   " 🔋 " Full
   " 🔲 " Empty
2 Signal strength indicator
3 Sleep timer
4 Clock format (12 / 24) --- Default setting: 24 hr
5 Small digits
   With radio off: preset alarm time
   With radio on: time, page & memory address,
                  SW meter band displays.
6 Alarm time
7 SW meter band unit
8 Preset memory address
9 Alarm On/Off symbol
10 Key lock symbol
11 kHz:MW & SW frequency unit
   MHz: FM frequency unit
12 Large digits
   With radio off:Time & System message
   With radio on: Frequency or Error display
13 FM Stereo symbol
14 LW, SW, MW, FM Band indicator
15 Ni-MH rechargeable battery indicator

HOW TO TURN ON/OFF THE RADIO

1. Open the battery compartment located on the back of the unit; install 2 x UM3 AA alkaline batteries observing the battery polarity diagram on the back of the radio. Close the battery door.
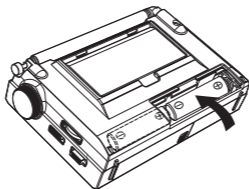
Installing batteries

2. Press the [POWER] button to turn on/off the radio.
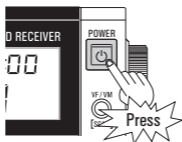
Note:
If you are unable to turn on the radio, please check whether the batteries were installed correctly; battery capacity is sufficient or the lock function had been applied with " 🔒 " displays on screen (press & hold the [🔒] button to unlock.)

TUNE IN STATIONS

Press the [POWER] button to turn on your radio, adjust the volume level by rotating the [VOLUME] knob, then select your desired band by pressing the [FM], [MW/LW], SW [∧] or [∨] button. In case of receiving FM/ SW broadcasting, fully extend the telescopic antenna for a better reception. When receiving MW and LW broadcasting, rotate the radio or change it's location to achieve optimum reception.

Press the [VF/VM] button repeatedly to select the "VF/Frequency" mode with clock displaying in the upper right corner, then you can turn into your favorite stations with any of the below tuning methods:

Method 1: MANUAL STATION TUNING
Rotate the [TUNING] knob to select your desired station.

FAST/SLOW tuning is shown in the chart below for each band.

STEP BAND	Slow tuning mode turning step	Fast tuning mode turning step
FM	0.01 MHz	0.1 MHz
MW	1 kHz	9 / 10 kHz
LW	1 kHz	9 kHz
SW	1 kHz	5 kHz

Method 2: AUTO BROWSE STATION
Press & hold the [VF/VM] button to scan from one station to another, staying on each station for about 5 seconds. You can press the [VF/VM] anytime to stop the Auto Browse function.

Auto browse station
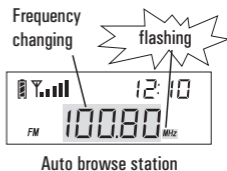
Note: While operating the "Auto Browse Station" function, you can press the [M] button anytime to store the station into memory, and the radio will keep on auto browsing the next available station.

Method 3: DIRECT KEYPAD ENTRY
Press the numeric keys [0] - [9] to enter the station frequency directly.

Notes:
1. Ignore the decimal point for FM band when inputting the frequency numbers. For example, FM 89.3 MHZ, just enter 8 9 3.
2. If the entered frequency rate is not within the covering area, the display would display "Err" (error) symbol.

WORKING WITH STATION MEMORIES

There are two separate sets of 1700 memories, allowing for great flexibility of memory storage. Please note the chart below:
Memory PAGE 0, noted as [P0], consists of 500 memories, 100 assigned for FM/MW/LW and 200 for SW.
Memory PAGE 1~12, noted as P1, P2, etc., each page consists of 100 memories, in total 1200 memories.

MEMORY BAND	Each Band Memories		Mixed Band Memories (1200 M)
	P0 Page	ATS	01 ~ 12 Page
FM	100M	√	
MW	100M	√	Each page can store 100 Memories.
LW	100M	√	
SW	200M	√	

HOW TO STORE STATION INTO MEMORIES
Turn on the radio and follow below tuning methods to store stations into memory:

Method 1: ATS (Auto Tuning Storage)
FM ATS:
1. Fully extend the telescopic antenna and press the [FM] button to select FM band.
2. Press & hold the [FM] button with "*PRESET*" flashing and the frequency start running, then you can scan and store your desired stations within the present band. When the frequency stop running, it means the ATS operation has been completed; then rotate the [TUNING] knob for those scanned and stored stations.
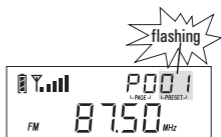
Auto Tuning storage (ATS) status

MW/LW ATS:
Press the [MW/LW] button to select MW/LW band, then follow step 2 of FM ATS.

SW ATS:
Fully extend the telescopic antenna and press the SW[$\vee$] or [$\wedge$] button to select SW band. There are two modes for SW ATS tuning:

Mode A: Press & hold the [$\vee$] button to ATS the stations within all meter bands
Mode B: Press & hold the [$\wedge$] button to ATS the stations within present meter band only.

Method 2: MANUAL STORING STATON
1. Press the [FM], [MW/LW] or [SW] button for band selection, then tune into your desired station.
2. Press the [M] button with the next available "Memory Address" flashing, and then press again to store station into memory. You can also wait for 3 seconds to auto store the station into memory.

Method 3: SEMI-AUTO STORING STATION
While operating the "Auto Browse Station" function, you can simply press the [M] button to store the station into memory to avoid unwanted stations and interfering signals being stored.

Method 4: DIRECT KEYPAD ENTRY
Press the numeric keys [0] - [9] to select your desired frequency, press the [M] button with the next available "Memory Address" flashing, then press again to store the station into memory. You can also wait for 3 seconds to auto store the station into memory.

HOW TO SELECT DIFFERENT MEMORY PAGE

Press the [⊕] or [⊖] button to select your desired memory PAGE, then rotate the [TUNING] knob to select PRESET address.

LISTENING TO STORED STATIONS

Press the [VF/VM] button repeatedly with "Memory address" shows on upper right corner of the display to enter the [Memory] mode, then use below three tuning methods to tune around those stored stations:

Method 1: MANUAL MEMORY TUNING
Rotate the [TUNING] knob to tune around the stored station.

Method 2: AUTO BROWSE MEMORY
Press & hold the [VF/VM] button until "PRESET" flashing to auto scan from one memory to another, staying on each station for about 5 seconds.
To stop auto search memory, simply rotate the [TUNING] knob.

Method 3: DIRECT KEY IN MEMORY ADDRESS
Press the numeric keys [0] - [9] to enter the memory address directly, and then press again the [↵] button to confirm.

Note: If the display shows "- - - -" symbol after entering the number, it means the entered memory address does not exist.

DELETE MEMORY

Press the [VF/VM] button repeatedly to select the "VM/Memory" mode with memory address displaying in the upper right corner, then follow below methods to delete those unwanted stations:

Method 1: MANUAL DELETE SINGLE MEMORY

Rotate the [TUNING] knob to select the memory that you want to delete, press & hold the [DELETE] button with "DEL" flashing; then press the [DELETE] button to remove the unwanted memory address.
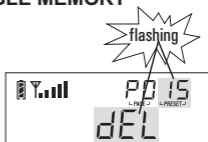
Note: If " DEL" is flashing more than 3 seconds without confirmation, it will exit the delete function automatically.

Method 2: SEMI-AUTO DELETE MEMORY

While operating the "**Auto Browse Station**" function, you can press the [DELETE] button anytime to direct delete the station and the radio will keep on auto browsing the next available station until you press any other button to stop this function.

### Method 3: DELETE ALL MEMORY WITHIN THE PAGE

Press & hold the [DELETE] button for 3 seconds and notice "Page (P0~12)" flashing in the upper right corner of display. Press the [DELETE] button again to delete all memory within the selected page.
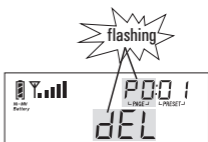
Note: If the [DELETE] button has not been pressed within 3 seconds to confirm, it will exit the delete function automatically.

SLEEP FUNCTION

1. Press & hold the [POWER] button with " SLEEP " flashing on the display to enter sleep timer mode.
2. Rotate the [TUNING] knob immediately to select sleep timer from 1 ~ 120 minutes or select permanently "On", then wait till the radio auto turn on to confirm the setting.

Sleep time range
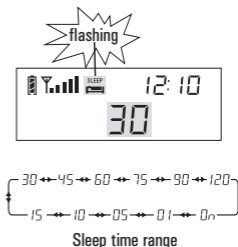
Note:
The default setting of the auto-turn off time is 30 minutes.

CLOCK SETTING

1. Press & hold the [TIME SET] button with hour flashing, then rotate the [TUNING] knob to adjust the hour.
2. Then press the [TIME SET] button with minutes flashing, and then rotate the [TUNING] knob to adjust the minute.
3. Press again the [TIME SET] button to confirm the setting.

※ If the [TIME SET] button has not been pressed again within 3 seconds, the unit will automatically confirm the setting.

WORKING WITH ALARM

IIt is recommended to set the alarm by buzzer if you are not familiar with the local radio frequency and air time.

SETTING THE ALARM TIME

1. Press & hold the [ALARM] button with hour flashing in the upper right corner, then rotate the [TUNING] knob to adjust the hour.
2. Press the [ALARM] button with minutes flashing, then rotate the [TUNING] knob to adjust the minute.
3. Press the [ALARM] button again, then rotate the [TUNING] knob to select from 1 ~ 90 minutes to set the Auto Alarm Off Timer.
4. Press the [ALARM] button to confirm the setting.

flashing

07:00 AL

12:00

7:30 AL

30

Auto sleep timer

5. To turn off the alarm, press the [ALARM] button repeatedly with " ⊠ " disappears.

※ If the [ALARM] button has not been pressed again within 3 seconds, the unit will automatically confirm the alarm setting.

※Direct Keypad entry
Note: You can also direct key-in the number to set the clock after entering the adjustment mode. For example: to set the clock to 6:35, press the numeric key to enter 0 6 3 5.

HOW TO SET ALARM BY RADIO

You can preset the alarm station following below steps:

1. Turn on the radio, then tune into your favorite station for alarm by radio and adjust your desired alarm volume level.
2. Press the [M] button with " PRESET " flashing, then immediately press the [ALARM] button and notice " 🖾 " shows on the display to confirm the preset alarm station.

HOW TO TURN OFF WHEN ALARMING

Buzzer alarm: Press the [POWER] button once to turn off the alarm.

Radio alarm: Press the [POWER] button once to continuously listen to the radio; press it twice to turn it off.

Note: If the preset alarm is activated when you are listening to the radio, it will auto switch to the preset alarm station. The unit will auto turn off after alarming.

SNOOZE FUNCTION

When the preset alarm is activated, you can press the [SNOOZE] button to temporarily turn off the alarm, the unit will start alarming again 5 minutes later.

INTELLIGENT LIGHT FUNCTION

Press the [🔦] button to illuminate the LCD for 3 seconds; press & hold the [🔦] button for permanently illumination. Press it again to turn off the backlight.
Notes:
1. When the unit is powered by the battery, please try to avoid setting the backlight to permanent illumination so as to reduce power consumption.
2. When the unit is turned off, the permanent illumination function will be turned off automatically as well.

KEY-LOCK FUNCTION

To activate the key lock function, press & hold the [🔒] button with " 🔒 " appears on display. Press & hold it again with " 🔒 " disappears to deactivate the key lock function.

TONE CONTROL

When listen to the radio, you can push the [TONE] switch for "High" or "Low" tone selection.

FM ST. (FM STEREO)

While listening to FM stereo stations, push the [FM ST.] switch to the position of "ON" with " (◁ ▷) " appears in the display to activate the" STEREO " listening. If the received FM broadcast signal is too weak, it is recommendable to turn off the stereo function by pushing the [FM ST.] switch to the position of "OFF" with " (◁ ▷) " disappears.

Note: The stereo function will not be activated and " (◁ ▷) " will not appear if the FM station is not stereo broadcasting.

HOW TO IMPROVE RECEPTION

ANT. GAIN
Push the [ANT. GAIN] button to "H" position for
normal listening. But when listening to the
station with strong signal or strong electrical
interference, push the [ANT.GAIN] button to
either "M" or "L" position to reduce background
noise or interference.
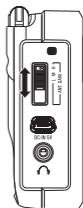
HOW TO IMPROVE FM / SW RECEPTION
Push the [ANT. GAIN] button to "H" position for listening
and clip on the external wire antenna to the telescopic
antenna, and then hang its end outside the window for
better reception of FM and SW.

Wire antenna

Window
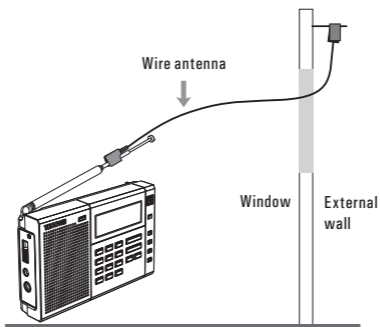
External
wall

Caution: Do not install any external antenna at the area
with thunder & lighting!

INTELLIGENT CHARGING FUNCTION

With radio off, install 2 x UM3 (AA) rechargeable batteries (excluded) & then press & hold the [▣] key with "$CHR\ On$" and "$^{Ni-MH}_{Battery}$" display to activate the built-in charging function. Use 5V external adaptor with USB plug to connect with the radio. The symbol " " will advance from the bottom to top during power charging. It stops when batteries are fully charged.

Connect 5V external adaptor with USB plug ⟨
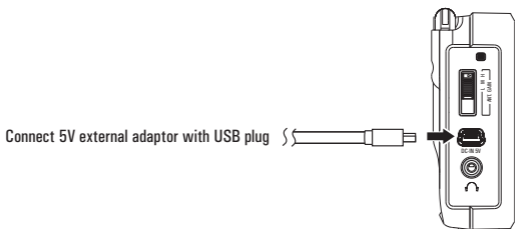
Notes:
1. Insist to use up all power of rechargeable batteries before charging again. This could extend the life time of battery and keep them in good conditions.
2. 2 pcs of batteries to be used as a group and don't separate them for other usage and mix to use batteries with different power capacity.
3. Don't charge on any non-rechargeable batteries in the radio, this will cause a hazard or damage to your radio.

SYSTEM SETTING

SETTING FM FREQUENCY RANGE
In radio off mode, press & hold the [FM SET] button until
87.5-108MHz, 64-108MHz, 76-108MHz, or 87-108MHz
appears in the display. Quickly keep pressing the [FM SET]
button to select suitable frequency range for your local FM.

SETTING 12/24 CLOCK FORMAT
In radio off mode, press & hold [12/24] button with
"12H/24H " shows on display to select your desired clock
format.

SETTING MW(AM) TUNING STEP
With radio off, press & hold [9/10kHz] button until "9kHz" or
"10kHz" appear in the display to select your desired AM
tuning step

TURN ON/OFF THE LW: With radio off, press & hold the
[MW/LW] button until "LW ON" or "LW OFF" appears in the
display to turn ON or OFF the LW respectively.

TURN ON/OFF THE CHARGING FUNCTION
With radio off, press & hold the [▭] key with " $CHR\ On$ "
& " $^{Ni-MH}_{Battery}$ " show up to activate the consumption display of
rechargeable batteries and the built-in charging system.
Press & hold the [▭] key with " $CHR\ OFF$ " shows up and
" $^{Ni-MH}_{Battery}$ " disappears to activate the consumption display of
regular batteries and turn off the built-in charging function.

Note: This radio is default to use regular batteries for
power supply. In case of using rechargeable batteries, you
should switch the radio system to rechargeable batteries
mode in order to show the correct power capacity.

TURN ON/OFF THE INTELLIGENT LIGHTING
This radio is default to turn on the intelligent lighting
function, with which the backlight would be on for 3
seconds when operating any keys or knobs.
Press & hold the 5 key with the "OFF" shows in the
display to deactivate the lighting function; press & hold the
5 key again with "ON" shows up to activate it.

Note: After shutting off the intelligent lighting function, the
[🔦] key is workable for turning on or off.

RESET BUTTON

The [RESET] button is located in
the bottom of the unit. Push it
according to the arrow direction
when the radio seems to stop
functioning properly.
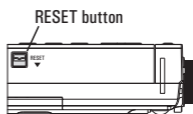
RESET button

Note: Station memory will not be removed after you push
the reset button.

IMPORTANT MATTERS FOR USING BATTERIES

1. If no battery has been installed inside for long time, clock of radio would stop to work. However, pre-stored frequencies are still kept. Clock would work again after new batteries being re-installed inside.
2. When the battery power is low, the " ▯ " symbol in the display will flash to alert you for changing new batteries. Besides it will turns off automatically when the power is gone.
3. Mix using the used & new batteries would cause damage of radio and also display the capacity of power incorrectly.
4. In case of radio not to be used for a long period, draw out the batteries for preventing liquid leakage and damaging the parts of radio.

RADIO MAINTENANCE

1. Protect the radio from heavy impact and water.
2. Do not let the radio expose to sunlight, close to heat sources and humid environment. Do not use or keep this unit under -5°C or up +50°C to avoid LCD damage.
3. Do not use any abrasive powder to clean the cabinet.
4. Do not disassemble the radio and adjust the parameters of the internal components.

TROUBLE SHOOTING

QUESTIONS	ANSWERS	SOLUTIONS
Can not turn on the radio.	-No power with the batteries. -Didn't install the batteries properly. -Power button is locked.	-Replace the new batteries. -According to "+" or "-" sign to install the batteries again. -Press the [⏻] button to unlocked.
Radio goes off when you are listening.	-No power with the batteries. -Sleep timer is activated.	-Replace the batteries. -Turn on the radio again.
Can not store some stations using ATS Some station store with noise using ATS.	-Frequency of stations are too weak. -There are interference near by your area.	-Search the station manually. - Low down the antenna or move to other location and try again.
Only limited FM stations can be received in Japan.	-FM frequency is 76~90MHz for Japan.	-Turn the radio off and press & hold the [FM SET] button, press [FM SET] button again to select 76~108MHz.
AM Reception is very poor in USA.	-USA is using 10kHz step for AM.	-Turn off the radio press the [9/10kHz] button to select 10kHz.

QUESTIONS	ANSWERS	SOLUTIONS
When the alarm activated (alarm by radio), there is only noise with the broadcast.	-Did not set the proper radio station for the alarm. -Or there are no broadcasting at that radio station; Or you are in another city where does not have a radio station for your preset frequency.	-Preset your alarm station properly (see the above setting). -Make sure it has radio broadcast in your location.
radio malfunction.	This may caused by interference, and the computer microchip not function properly.	Remove the battery, then you can reload. If it is still not able to work, please contact your nearest dealer for customer service.