

TECSUN

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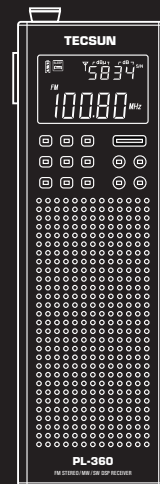
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TECSUN

PL-360

FM stereo / MW / SW DSP RECEIVER

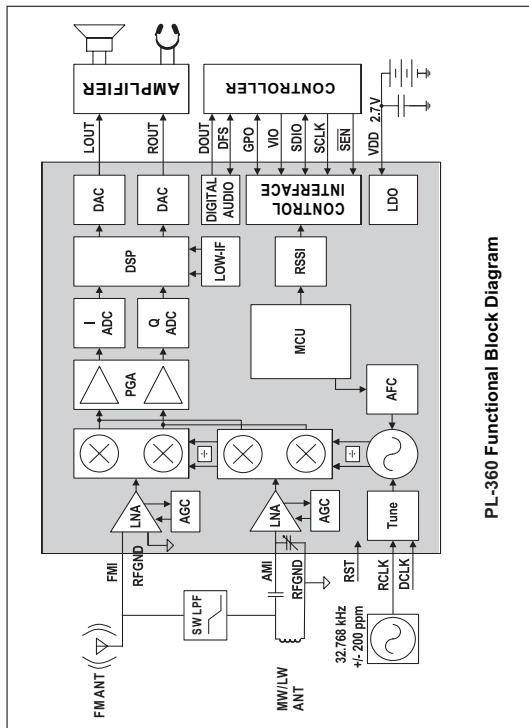
OPERATION MANUAL



TECSUN RADIO CO., LTD.

PL-360 Functional Block Diagram

PL-360 is using DSP si4734 Microchips (from Silicon Labs in USA) to digitalize the analog AM/FM broadcasting signal base on the modern software technology and radio principles. It can highly improve on radio's sensitivity, selectivity, S/N ratio and anti-interference.



PL-360 Functional Block Diagram

SPECIFICATIONS

- Frequency range
 - FM 87~108 MHz
Japan 76~108 MHz
Eu, USA 87.5~108 MHz
 - MW 522~1620 (150~1620) kHz
USA 520~1710 kHz
 - SW 2300~21950 kHz
- Sensitivity
 - FM (S/N=30dB) Less than 3 μ V
 - MW (S/N=26dB) Less than 1mV/m
 - LW (S/N=26dB) Less than 10mV/m
 - SW (S/N=26dB) Less than 30 μ V
- Selectivity
 - FM > 60 dB
 - MW > 60 dB
 - LW > 60 dB
 - MW > 60 dB
- FM Stereo crosstalk Less than 25 dB
- Memory 450
- Output 350 mW
- Power UM3 or AA X 3
USB 5V DC
- Speaker $\text{\O}40\text{mm}$, 500mW/16 Ohm
- Earphone Jack $\text{\O}3.5\text{mm}$, 8~32 Ohm, Stereo type
- Dimensions Approx. 53(W) X 159(H) X 26(D) mm
- Weight 128g (Batteries not included)

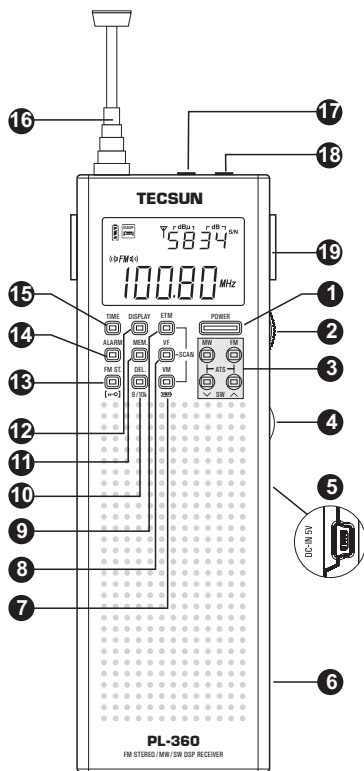
PL-360

QUESTIONS	ANSWERS	SOLUTIONS
When the alarm activated (alarm by radio), there is only noise with the broadcast.	<p>-Did not set the proper radio station for the alarm.</p> <p>-Or there are no broadcasting at that radio station.</p> <p>-Or you are in another city where does not have a radio station for your preset frequency.</p>	<p>-Preset your alarm station properly (see the above setting).</p> <p>-Make sure it has radio broadcast in your location.</p> <p>-Or set the alarm by buzzer.</p>
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.

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CONTROL LOCATIONS



TROUBLE SHOOTING

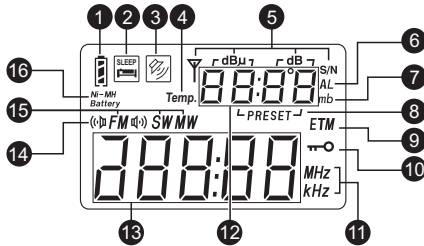
QUESTIONS	ANSWERS	SOLUTIONS
Can not turn on the radio.	-No power with the batteries. -Didn't install the batteries properly. -Power button is locked.	-Replace the new batteries. -According to "+" or "-" sign to install the batteries again. -Press [] button to unlocked.
Radio goes off when you are listening.	-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 long press on the [FM SET] button, short press [FM SET] button again to select 76~108MHz.
Received very poor AM in USA.	-USA is using 10kHz step for AM.	-Turn off the radio press the [9/10kHz] button to select 10kHz.

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.

- ① Power on/off
- ② Multifunctional tuning knob
- ③ Band selector and Auto Tuning Storage
- ④ Volume knob
- ⑤ USB 5V DC-IN jack
- ⑥ Battery compartment
- ⑦ VM (View Memory) & Scan button (Memory)
- ⑧ VF (View Frequency) & SCAN button (Frequency)
- ⑨ ETM (Easy Tuning Mode) button
- ⑩ DEL ETE & 9/10kHz MW step set button
- ⑪ Memory button (Storing radio stations) / Batteries type selector
- ⑫ Display button
- ⑬ FM ST. / Lock button
- ⑭ ALARM On/Off & Setting
- ⑮ TIME Setting
- ⑯ FM & SW telescopic antenna
- ⑰ MW Antenna Jac
- ⑱ Earphone jack
- ⑲ Removable Belt Clip

LCD DISPLAY



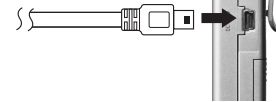
- | | |
|---|--|
| <p>① Battery consumption indicator / Charging indicator</p> <p>② Sleep timer indicator</p> <p>③ Alarm on/off indicator</p> <p>④ Temperature (Temp.)</p> <p>⑤ Signal indicators
dBu: signal strength unit
dB : Signal to Noise Ratio (S/N) unit</p> <p>⑥ Alarm time indicator</p> <p>⑦ SW meter band indicator</p> <p>⑧ Preset memory address</p> <p>⑨ ETM indicator</p> <p>⑩ Key-lock indicator</p> <p>⑪ kHz: frequency unit for MW & SW
MHz: frequency unit for FM</p> | <p>⑫ Digital number display (4 Digits)
With radio off: world time, alarm time, temperature
With radio on: word time, signal strength / SNR, alarm time, temperature, local time, memory address, meter band.</p> <p>⑬ Digital number display
With radio off: local time
With radio on: frequency display, band display</p> <p>⑭ FM stereo status indicator</p> <p>⑮ Band indicator</p> <p>⑯ Rechargeable batteries indicator</p> |
|---|--|

USING THE INTELLIGENT CHARGING FUNCTION

With radio off, install 3 x UM3 (AA) rechargeable batteries and then press & hold the [] key with " *CHR ON* " & " *N-MH Battery* " displays to activate the built in charging function.

1. Use any 5V external adaptor with USB plug to connect this radio, the symbol " " will advance from the bottom to top during power charging. It stops when batteries are fully charged.
2. You can also use any USB cable to connect the radio with your PC for charging.

Connect USB 5V to external power sources



PL-360

Notes for charging power:

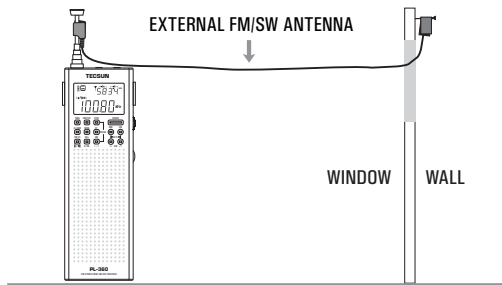
1. Insisting to use up all power of rechargeable batteries before charging again, this could extend the life time of battery and keeping them in good conditions.
2. 3 pcs of batteries to be used as a group and don't separate them to other usage. Also don't mix to use batteries with different power capacity.

Caution: Don't charge on any non-rechargeable batteries in the radio, this will cause a hazard or damage to your radio.

USING THE EXTERNAL ANTENNA

Enhancing FM/SW reception

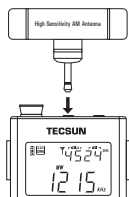
Attach the clip on type “external FM/SW antenna” to the Telescopic antenna of PL360, then extend the wire and hang on another end to the window or wall to enhance the FM/SW reception.



Caution: Don't install external FM/SW antenna in the frequent thunder area.

Enhancing AM/LW reception

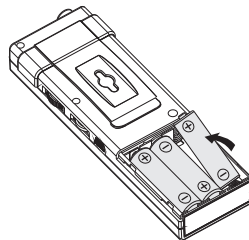
Plug in the AM/LW external antenna into the AM Antenna jack, then rotate the antenna for better AM/LW reception.



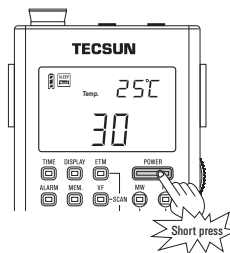
TURN ON / OFF THE RADIO

1. Installing batteries

The battery compartment is located on the back of the PL-360. To remove the battery compartment cover, apply thumb pressure and slide it towards the bottom of the radio. Install 3 AA alkaline batteries into the battery compartment, observing the battery polarity diagram on the back of the radio. Display screen would show battery capacity, time, etc.



2. Short press on [POWER] button to turn the radio on or off.



Note:

If the radio is not able to be turned on. Please check if the batteries were installed correctly, battery capacity is sufficient or the lock function had been applied with symbol "⏻" displayed on screen.

TUNE INTO STATIONS

Short press [POWER] button to turn on your radio, then select your desired band by short pressing the [FM], [MW], SW [∨] or [∧] button. In case of receiving FM/SW broadcasting, fully extend the telescopic antenna for a better reception.

Now, you can turn into your favorite station with any of the below tuning methods:

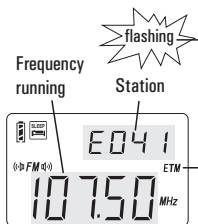
Method 1: ETM (Easy Tuning Mode)

The ETM function allows you to tune into stations easily and temporarily store them into the ETM storage; 100 stations for FM/MW & 250 stations for SW.

Note: Scanned stations will not be stored in the regular 450 memories, but will remain in the ETM temporary storage until next ETM scanning within each band.

HOW TO USE ETM

1. Turn on the radio and select your desired band by pressing either the FM, MW or SW [∨] or [∧] button.
2. Short press the [ETM] button with [ETM] shows on the display to enter Easy Tuning Mode.
3. Long press the [ETM] button until the frequency running to auto scan the stations within present band.
4. When the frequency stop running, turn around the [TUNING] knob for those scanned stations.
5. Short press either the [VF] & [VM] button with frequency flashing and the disappearance of ETM on the display to exist ETM mode.



Notes:

FM station: When you are in a different city or country, you should perform the ETM function again, because this will not delete any of the stations already within the memory.

Turn ON/OFF charging function & exchange battery consumption display

Press & hold the [ON/OFF] key with " CHRG ON " & " ^{Re-MH} Battery " shows up to activate the consumption display of rechargeable batteries and the built-in charging system. Press & hold the [ON/OFF] key with " CHRG OFF " shows up & " ^{Re-MH} Battery " disappear to activate the consumption display of alkaline batteries and turn off the built-in charging function.

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

SYSTEM SETTING

Frequency range setting for FM

Turn off the radio, long press [FM] button, until 87.5-108MHz, 76-108MHz, or 87-108MHz appears in the display. Quickly keep pressing on the [FM] button to select suitable frequency range for your local FM.

MW(AM) step setting

Turn off the radio, long press [9/10kHz] button until "9kHz" or "10kHz" appears in the display. By long pressing again, the alternative band step would be shown. The temperature is also shown on screen at the same time.

In general practice, the frequency step of 10kHz is to be used for broadcasting MW(AM) as well as the temperature in the degree of Fahrenheit (°F) to be used in the North America.

In order to provide convenience to the end users, the "10kHz" of frequency step is default to be displayed with temperature in the degree of Fahrenheit (°F) together as well as "9kHz" to be displayed with temperature in the degree of Centigrade (°C) together.

If the display shows "10kHz" with degree of Fahrenheit (°F), which means this radio is set to 10 kHz step for MW(AM) with temperature in Fahrenheit (°F) which is for the North America region.

Turn On/Off LW

In radio off mode, long press the [9/10kHz] button to set the AM tuning step to 9K, then long press the [MW] button and notice "MW 150 ~ 1620" shows to activate the LW.

MW station: It is recommendable to perform the ETM function during day time as well as night time, because there usually are more stations that start broadcasting at night

SW station: It is recommendable to perform the ETM function in the morning, afternoon as well as night time, because the transmitting signal of SW is very unstable and there usually are more stations that start broadcasting in the late afternoon.

Method 2: MANUAL TUNING

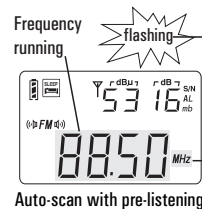
Turn on the radio, short press the [VF] button to switch into frequency mode. Rotate the [TUNING] knob to select your station.

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

band \ step	Slow tuning mode	Fast tuning mode
	turning step	turning step
FM	0.01 MHz	0.1 MHz
MW	1kHz	9 / 10kHz
SW	1 kHz	5 kHz

Method 3: AUTO BROWSE STATION

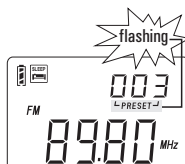
1. Turn on the radio and short press the [VF] button with the frequency flashing.
2. Long press the [VF] button to scan from one station to another, staying on each stations for about 5 seconds.
3. To stop auto browse function, simply press the [VF] button.



Note: When the radio search & stop to a station, just press [MEM.] button once to store it.

Method 4: AUTO BROWSE MEMORY

1. Turn on the radio, short press the [VM] button with memory page shows in the upper right corner and disappears in 5 seconds.
2. Long press [VM] button with "PRESET" flashing to scan from one memory to another, staying on each station memory for about 5 seconds.
3. To stop auto search memory, simply press the [VM] button.



Auto-scan memory with pre-listening

Note: Please first read [Working with Memory] in next page before using this function.

TURN OFF THE ALARM

When the radio is turned on by the alarm function with radio, you can short press [POWER] button to continue listening radio afterwards.

Short press [POWER] again to turn off the radio.

DISPLAY MODE

With radio OFF: Short press the [DISPLAY] button to view on Temperature, Alarm time.

With radio ON: Short press the [DISPLAY] button to view on Alarm time, Temperature, Local time, signal strength/ SNR.

KEY LOCK FUNCTION

Long press the [] button with " " symbol appears in the display to lock up all keys / buttons. Long press it again with the symbol disappears to unlock the keys/buttons.

FM ST. (FM STEREO) BUTTON




While listening to FM station via stereo earphones, short press the [FM.ST] button with " " appears over the left side of the frequency in the display to activate the STEREO mode once it receives the FM stereo station.

SETTING THE CLOCK


1. Long press the [TIME] button until you see the hour flashing. Rotate the [TUNING] knob to set the correct hour, then short press the [TIME] button and notice the minutes are flashing.
2. While it's flashing turn the [TUNING] knob to set the correct minutes, then press [TIME].

Note: You can also directly key-in the numeric key instead of rotating the [TUNING] knob to set the correct clock.

SETTING THE ALARM TIME

1. Long press the [ALARM] button until both the HOUR & AL flashing, rotate the [TUNING] knob to adjust the hour, then short press [ALARM] with the minutes flashing.
2. Rotate the [TUNING] knob to adjust the minutes and short press the [ALARM] button with the "  " symbol flashing.
3. Rotate the [TUNING] knob to select 1 ~ 90 minutes to set the Auto Alarm Off Timer.
4. Short press the [ALARM] button to confirm and notice "  " shows on display to activate the alarm by radio.
5. To turn off the alarm function, repeat short pressing the [ALARM] button and notice "  " disappear.

Setting the alarm by radio

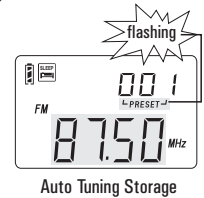
1. Turn on the radio, tune into your favorite alarm radio station. Please set the volume at the noticeable level.
2. Short press [MEM.] button and notice the PRESET number flashing in the upper right corner of the display.
2. While it flashing, press the [ALARM] button and notice "  " symbol is flashing for couple seconds. Now this alarm radio station is set.

WORKING WITH MEMORIES

There are total 450 preset memories within PL-360. For FM and LW, each band has 100 preset memories; and 250 preset memories for SW.

Method 1: ATS - Auto Tuning Storage

Turn on the radio and select the band that you want to ATS to take place in, either FM or MW. Long press the [FM] or [MW] button and notice that the "PRESET " number (001) appears in the display's upper right corner with the presets to the right increasing as the band is scanned and frequencies are stored into memory.



There are two modes for SW ATS function:

Mode A: In SW band, long press the [A / ∨] button to ATS the stations within all meter bands.

Mode B: In SW band, long press the [B / ∧] button to ATS the stations within present meter band only.

Note:

During ATS process in FM, MW or SW (mode A), pre-stored radio stations will be replaced automatically by the new searched stations.

With ATS in SW (mode B), those existing memories will not be replaced; all the newly found radio stations would be stored in the blank memories addresses.

Method 2: MANUALLY STORING STATION

1. Tune to your desired station, press the [MEM.] button once and notice the PRESET number flashing in the upper right corner of the display.
2. While it flashing, press the [MEM.] button to store it into the memory or wait for 3 seconds to store it automatically. If you want to store it into another PRESET memory, just rotate the tuning knob of your choice, and press the [M] button to confirm.

Method 3: SEMI-AUTO STORING STATION

1. Short press the [VF] button to enter frequency status.
2. Long press [VF] button to activate the Auto-browse function.
3. While tuning to your favor station, you can direct store it into the next available memory by pressing on the [MEM.] button with PRESET flashing. The Auto frequency browsing keeps on going unless you short press the [VF] button again.

DELETE MEMORY

Method 1: MANUAL DELETE MEMORY

1. Turn on the radio and press the [VM] button causing PRESET stations appears in the display's upper right corner.
2. Rotate the [TUNING] knob to select the memory that you want to delete.
3. Long press [DEL.] button with "dEL" flashing in the display, press the [DEL.] button again to confirm.

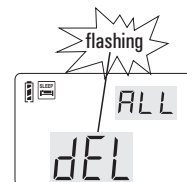
Note: If "dEL" is flashing more than 3 seconds without confirmation, it will exit the delete function automatically.

Method 2: SEMI-AUTO-DELETE MEMORY

In VM mode, long press the [VM] button to activate the Auto-Browse function of memory. Once previewing your unwanted station, simply press the [DEL.] button with "dEL" shows for 2 seconds and then keep on browsing other stations. To stop the browsing function, short press the [VM] button to exist.

Method 3: DELETE ALL MEMORY

Short press the [VM] button to enter VM / Memory mode, long press the [DEL.] button for 3 seconds with "ALL" shows on the upper right corner of the display, press again the [DEL.] button to remove all memory.



Delete all memories

Note: If "dEL" is flashing more than 3 seconds without confirmation, it will exit the delete function automatically.

SLEEP FUNCTION

With sleep function, you can adjust the length of time for the radio to turn off automatically.

The default setting for the auto-turn off time is 30 minutes if the radio being turned on by short pressing the [POWER] button.

To change the sleep timer, long press the [POWER] button with [ON / 01~120] & [SLEEP] appear on the display, rotate the [TUNING] knob to select sleep timer from 1 ~ 120 minutes or permanently "☐☐". Wait for 3 seconds until "☐☐" symbol stops flashing to confirm.

Note: Short press the [POWER] button to directly turn on the radio with previous preset sleep timer; long press it to change the timer.