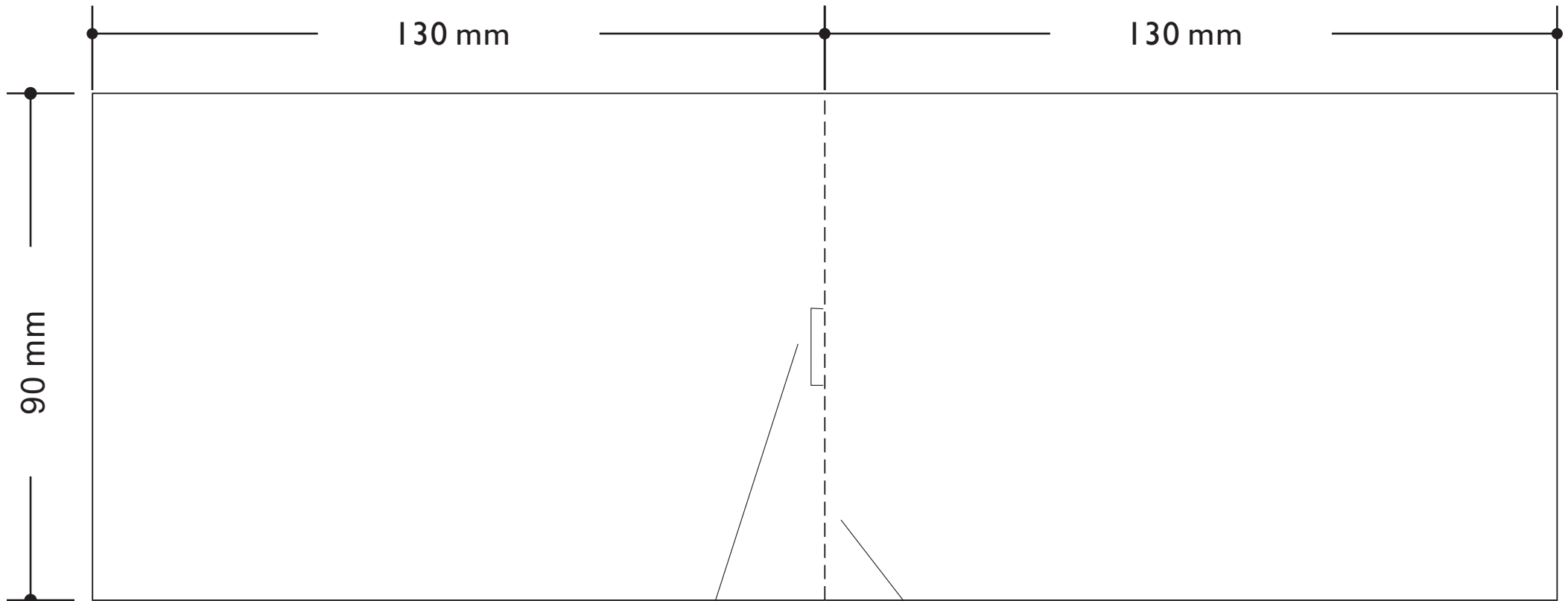


Full Dot Altimeter with Heart Rate Monitor and Pedometer : Instruction Manual

Project no: Art08-0362 ver: 003 File name: Art08-0362 Manual-r0.CDR Prepared by: C.K Lau Copyright: Latitude Limited Date: 11 Jun 2008



Size : 130 X 90mm

Type: book type

Cover: 4 pages

Color: 1C+0 (Black)

Paper: 100gms white wood free paper

Body Copy: 40 pages

Color: 1C+1C (Black)

Paper: 100 gms white wood free paper

Blinding: Saddle wire

Paper: Wood free paper

Paper weight: 100 gms

Language: English

saddle wire

folding line

Project:	
Release for:	
Prepared by:	Date:
Checked by:	Date:
Approved by:	Date:

Advanced Altimeter
with Heart Rate Monitor and Pedometer

Instruction Manual

Back Cover

Front Cover

1.0 Introduction



Thank you for purchasing of this Watch. Your Watch features electronic sensors which measures and shows the outdoor conditions: weather forecast, temperature, pressure, altitude and compass directions.

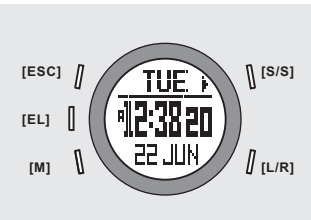
Your Watch also provides the essential information about your body or exercise during your exercise, like heart rate, walking steps, traveling speed, distance, etc.

These data can be further logged into a logbook for later review. Your Watch also includes current time, daily alarm, chronograph, timer and dual time function.

To get the most of your purchase, it is advisable to use this stopwatch in conformity with the below notes:

- Be sure to carefully read this manual and keep it on hand for later reference when necessary.
- Avoid exposing your Watch to extreme conditions for an unreasonable time.
- Avoid rough usages or severe impacts to your Watch.
- Do not open the Watch's case unless a certified service agency because your Watch contains precise electronic sensors and components.
- Clean your Watch with a soft cloth occasionally that working for a longer use life of your watch.
- Keep your Watch away from magnets or the appliances which contains magnetic objects such as mobile phones, speakers and motors.
- Store your Watch in a dry place when it is not in use.

2.0 Button Layout



Mode Button [M]

- To select among Current Time, Daily Alarm, Chronograph, Timer and Dual Time Mode.
- To select among Distance, Heart Rate, User, Altimeter, Barometer, Compass and Logbook Mode.

Escape button [ESC]

- To select between timekeeping and sensor menu.
- To exit from setting mode.
- To go back to the previous screen or function level.

Start/Stop Button [S/S]

- To scroll the menu upward.
- To activate the 'start' or 'stop' function under Chronograph and Timer Mode.
- To increase the setting value under setting display.

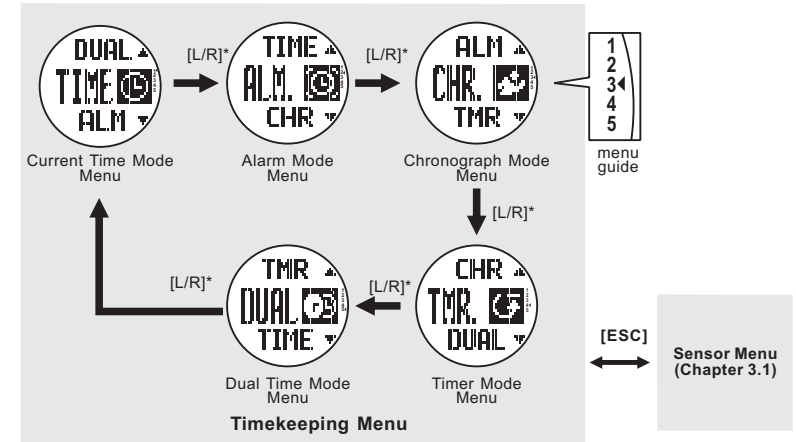
Lap/Reset Button [L/R]

- To scroll the menu downward.
- To activate the 'Lap/ Reset' function under Chronograph Mode. To activate the 'Reload' function under Timer Mode (stop counting).
- To decrease the setting value under setting display.

Back light Button [EL]

- To turn on the EL back light for about 3 seconds. **Note:** When 'Night' back light function is ON, pressing any key will turn ON the back light too.

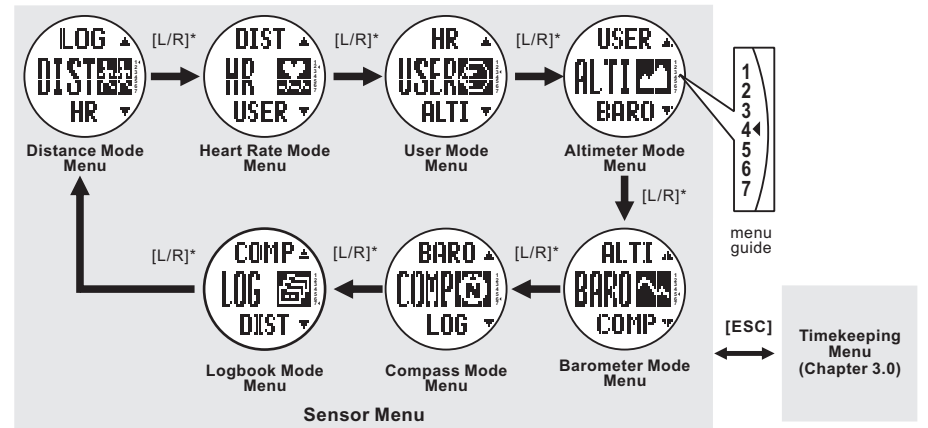
3.0 Major Function Mode - Timekeeping Menu



NOTE:

- When one of the menus is selected, the corresponding function mode will appear after a few seconds or press [M] to show the function mode instantly.
- The menu guide indicates the current menu no. (e.g 3) with the total no. of menus (e.g 5).
- *Press [S/S] to move the selection in the reverse direction.

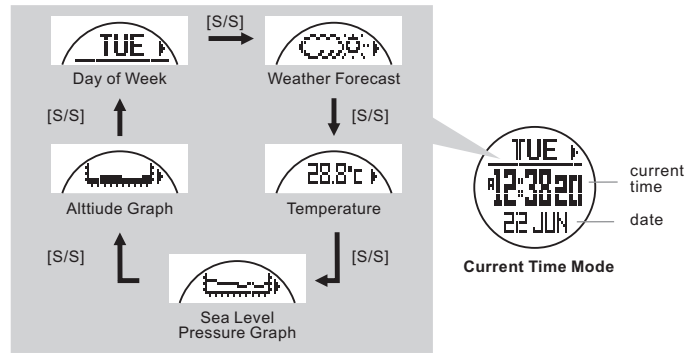
3.1 Major Function Mode - Sensor Menu



NOTE:

- When one of the menus is selected, the corresponding function mode will appear after a few seconds or press [M] to show the function mode instantly.
- The menu guide indicates the current menu no. (e.g 4) with the total no. of menus (e.g 7).
- *Press [S/S] to move the selection in the reverse direction.

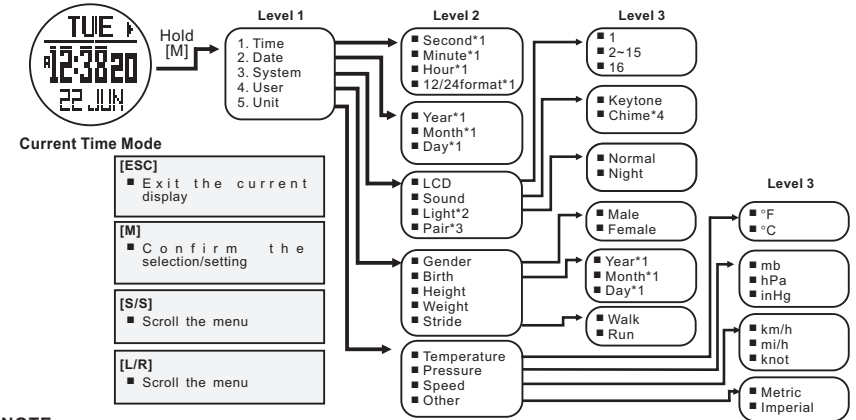
4.0 Current Time Mode - Function Display



NOTE:

- If the Watch is NOT going to use for a long time, storing the watch in Power Saving Mode (LCD is OFF, but the timekeeping function is still working) can save battery.
- To activate Power Saving Mode by pressing [L/R] for 5 seconds under Current Time Mode. Press any button under Power Saving Mode will resume normal operation.

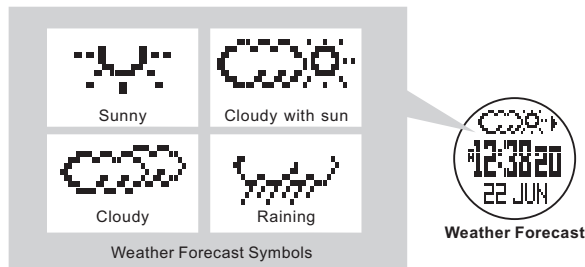
4.2 Current Time Mode - Setting the Watch



NOTE:

- *1. Press [M] to select among the settings.
- *2. Press [EL] will turn ON the backlight if 'Normal' is selected. Press any button will turn ON the backlight if 'Night' is selected.
- *3. The Heart Rate Chest Strap MUST be worn on the chest (i.e heart rate signal is sampling)
- *4. If 'Chime' is ON (the '▶' is appeared), the Watch will beep once at the hour i.e 1:00, 2:00, 3:00, etc.

4.1 Current Time Mode - Weather Forecast



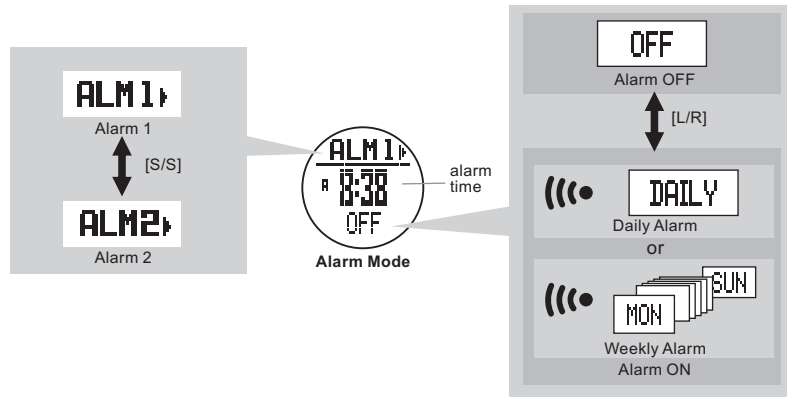
IMPORTANT:

The Watch predicts the coming weather by using the readings of the changes of air pressure, in order to avoid the changes of pressure is caused by the change of altitude, it is highly recommended to staying at the same altitude for at least 24 hours for a higher accurate predication.

WARNING:

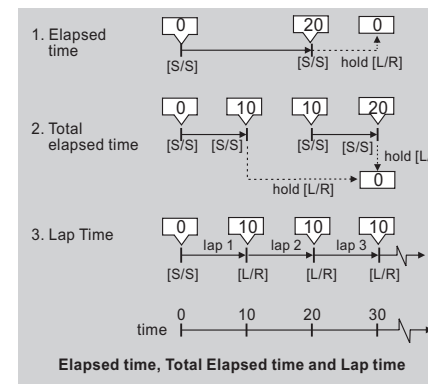
The Watch predicts the weather by adopting general weather prediction principles, it is NOT capable to reflect the extreme changing of weather within a very short period of time. Always double check the predicted weather from this Watch with other credible sources for critical events.

5.0 Alarm Mode - Setting the Alarm ON and OFF

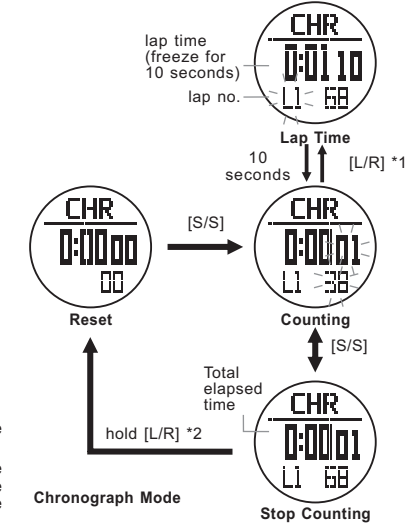


- NOTE:**
- If Daily or Weekly Alarm is ON (the '(((' is appeared), the Watch will beep at the predefined alarm time daily or weekly.
 - The Watch will sound for 30 seconds at the alarm time. While alarm sounds, press any key to stop the sound instantly.
 - Alarm 1 and Alarm 2 can be set to alarm Daily or Weekly, see 5.1 for the details of the setting.

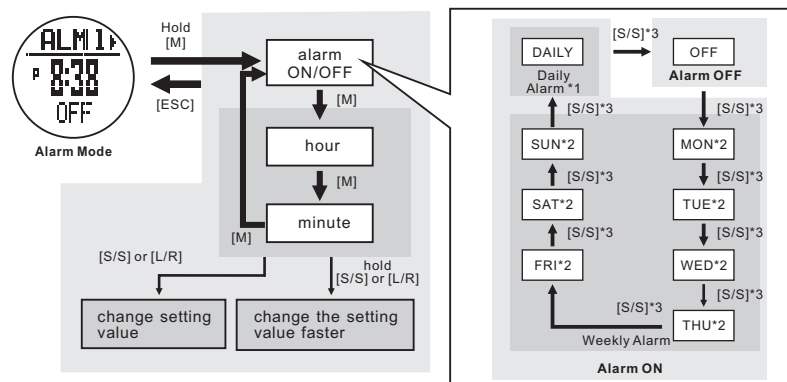
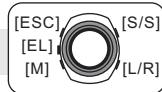
6.0 Chronograph Mode - Using the Chronograph



- NOTE:**
- *1. The Watch can record up to 50 lap times i.e L1 to L50.
 - *2. Hold down [L/R] for 2 seconds (when the chronograph is stopped) to reset the chronograph. If the Chronograph is reset, the recorded Lap Time(s) will be erased too.

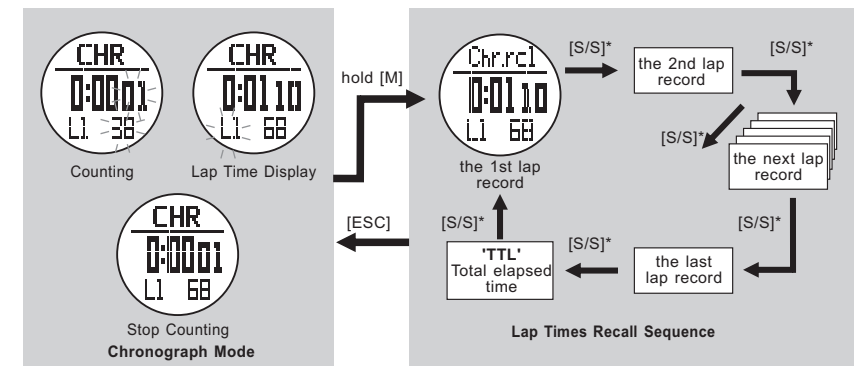
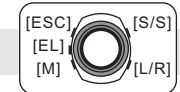


5.1 Alarm Mode - Setting the Alarm



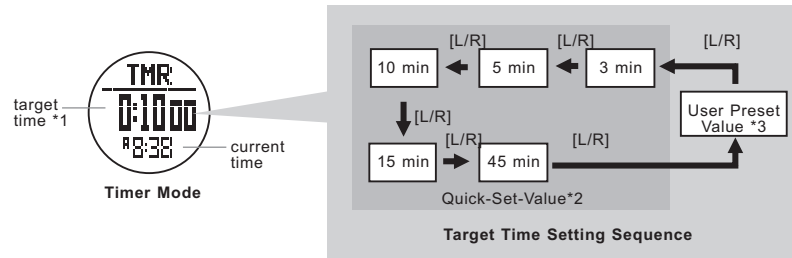
- NOTE:**
- *1. If the 'DAILY' is selected, the alarm is turned ON and the Watch will alarm at the predefined time everyday.
 - *2. If a Weekday (i.e 'MON', 'TUE' and etc) is selected, the alarm is turned ON and the Watch will alarm at the predefined time that weekday every week.
 - *3. Press [L/R] to move the selection in the reverse order.

6.1 Chronograph Mode - Recalling Lap Time



- NOTE:**
- Press [L/R] to move the selection in the reverse order.
 - See 6.0 to erase the recorded Lap Time(s) (reset the chronograph).

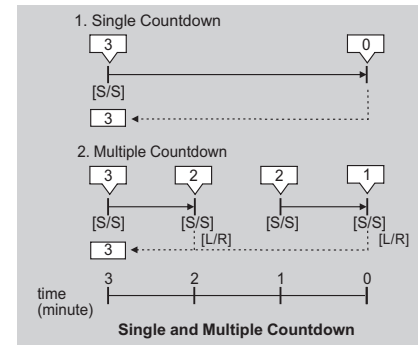
7.0 Timer Mode - Setting the Target Time



NOTE:

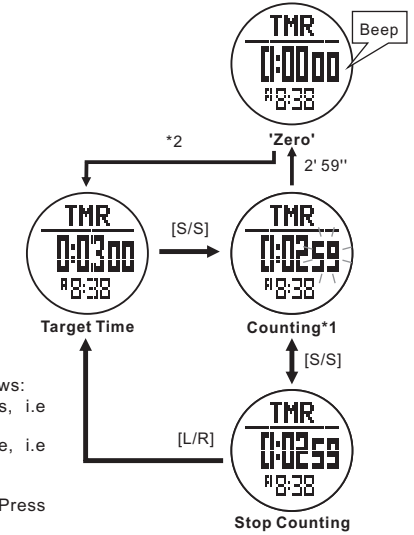
- (*1) The Timer starts counting from the Target Time to zero.
- (*2) The Watch includes 5 Quick-Set-Values : 3, 5, 10, 15 and 45 minutes for setting the Target Time faster, and these values CANNOT be set by user.
- (*3) The User Preset Value (for setting the Target Time) CAN be set by user, see 7.1 for the details of the setting.

7.2 Timer Mode - Using the Countdown Timer

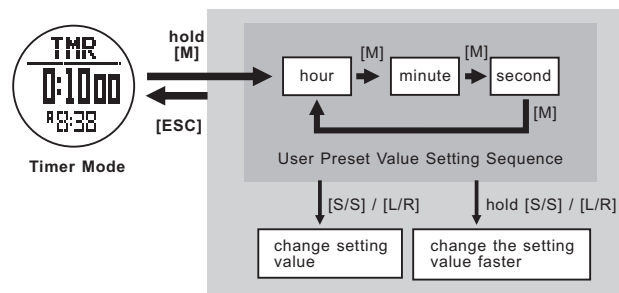


NOTE:

- (*1) The Watch will prompt (during the counting) as follows:
 - a) Beep once every minute for the last 10 minutes, i.e 10'00", 9'00" and etc.
 - b) Beep once every 10 seconds for the last minute, i.e 0'50", 0'40" and etc.
 - c) Beep once every seconds for the last 5 seconds.
 - d) Beep for 30 seconds when timer reaches zero (Press any button CAN stop the beep instantly).
- (*2) The Target Time will be reloaded automatically.



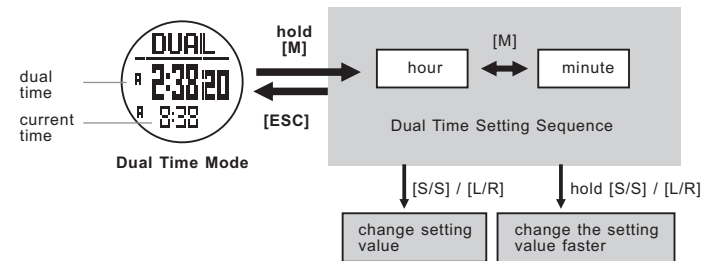
7.1 Timer Mode - Setting the User Preset Value



NOTE:

- The setting range is up to 99 hours 59 minutes 99 seconds.

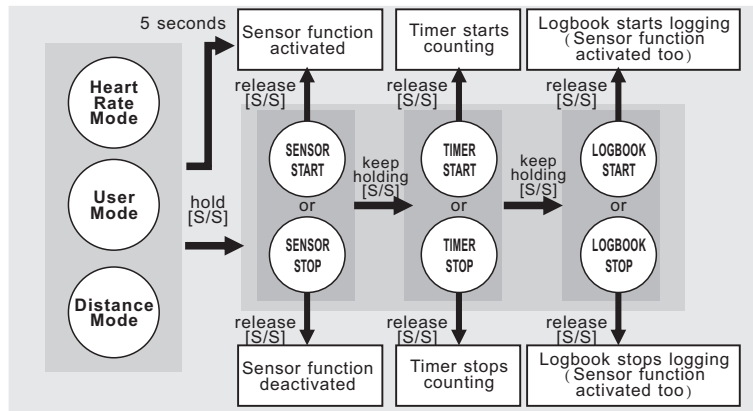
8.0 Dual Time Mode - Setting Dual Time



NOTE:

- The 'second' digits of Dual Time and the 'second' digits of Current Time are the same .

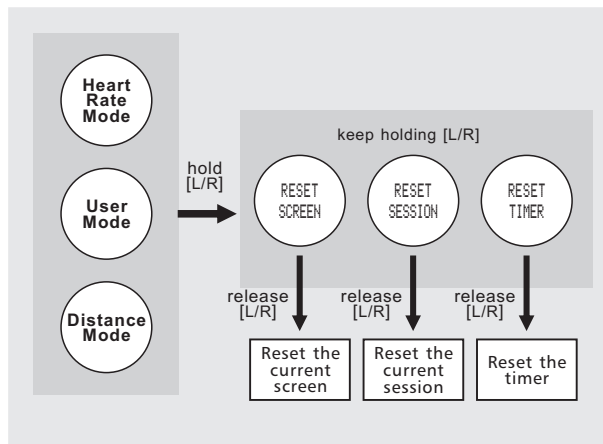
9.0 Sensor Mode: To Start/Stop the Sensor, Timer and Logbook



Note:

- (1) When enter the Heart Rate, User or Distance Mode, the sensor function will be activated automatically after 5 seconds.
- (2) When the sensor function is activated, the Logbook will start automatically too if 'AUTO' start feature is selected. See 16.0.5 for the details of the setting.
- (3) While the Log function is started, a 'LOG' indicator starts flashing on the screen.
- (4) The Watch includes a stand-alone count-up timer for timing the accumulative exercise time under Heart Rate, User and Distance Mode.

9.1 Sensor Mode: To Reset Screen, Session and Timer



NOTE:

- (1) Follow the above diagram to reset the current screen and/or session if the user intend to neglect the last exercise.
- (2) Follow the above diagram to reset the exercise timer.

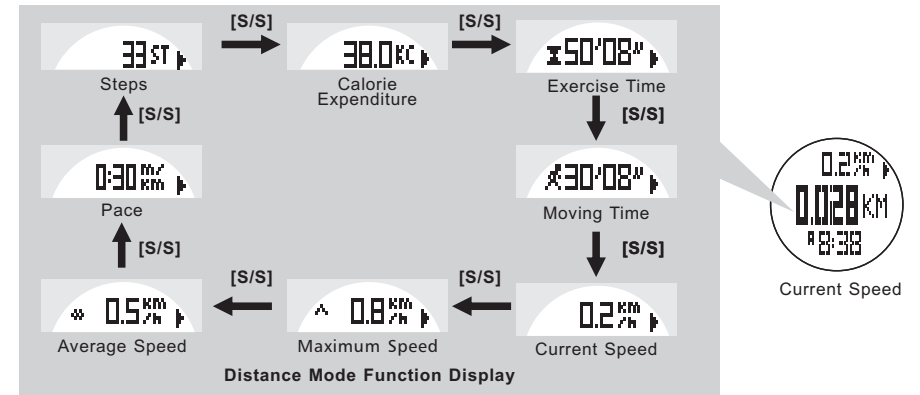
10.0 Distance Mode - Distance Mode Function



Current Speed	<ul style="list-style-type: none"> The measurement of the walking/running speed.
Average Speed	<ul style="list-style-type: none"> The measurement of the average walking/running speed.
Distance	<ul style="list-style-type: none"> The calculation of total walking/running distance.
Calorie Expenditure	<ul style="list-style-type: none"> The calculation of calorie expenditure.
Current Pace	<ul style="list-style-type: none"> The measurement of time which needs to accomplish one kilometer/mile by the current speed.
Maximum Speed	<ul style="list-style-type: none"> The measurement of the maximum walking/running speed.
Moving Time	<ul style="list-style-type: none"> The measurement of time that the user is in motion.
Step	<ul style="list-style-type: none"> The calculation of total walking/running steps.

Function Overview

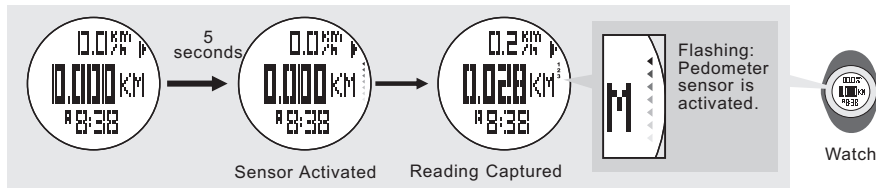
10.2 Distance Mode - Distance Function Display



NOTE:

- The Exercise Timer is counting independently, switched off the sensor or changed the screen to other mode will NOT affect the counting. i.e The same set of exercise time can be checked from either Heart Rate Mode, Distance Mode or User Mode.
- The Calorie Expenditure is calculated by Heart Rate and Pedometer, changed the screen to other mode will NOT affect the calculation unless the sensor is switched OFF. i.e The same set of Calorie Expenditure can be checked from either Heart Rate Mode, Distance Mode or User Mode.

10.1 Distance Mode - To Get the Measurement



NOTE:

- When enter Distance Mode, the function (sensor) will be activated automatically after 5 seconds. Which can be activated manually too, see 9.0 for the detailed operations.
- When the function (sensor) is activated, the Watch will aggregate the readings of the exercise into the current 'session'.
- The data of the current session can be saved into the 'Daily Record' (10.3.1) or reviewed (10.3.2) by the Function Menu.
- The 'Daily Record' can be reviewed by the Function Menu too (10.3.3). The Watch can store upto 10 daily records.
- See 9.1 to reset the current session.

10.3 Distance Mode - Distance Mode Function Menu



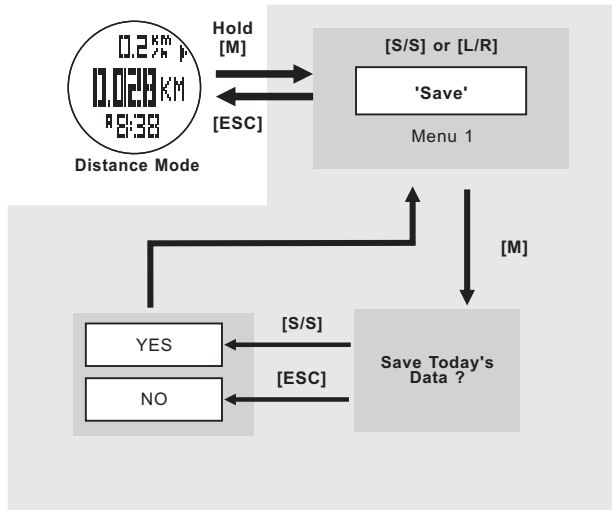
<p>Menu 1 - Save</p> <ul style="list-style-type: none"> To save the current session into today's record. 	<p>Menu 4 - Sleep</p> <ul style="list-style-type: none"> To set the auto-sleep time for today's Pedometer.
<p>Menu 2 - Session</p> <ul style="list-style-type: none"> To review the statistical data of the current session. 	<p>Menu 5 - Sense</p> <ul style="list-style-type: none"> To set sensitivity of the Pedometer.
<p>Menu 3 - Daily Record</p> <ul style="list-style-type: none"> To Review the Daily Record for 10 days. 	

Distance Mode Function Menu

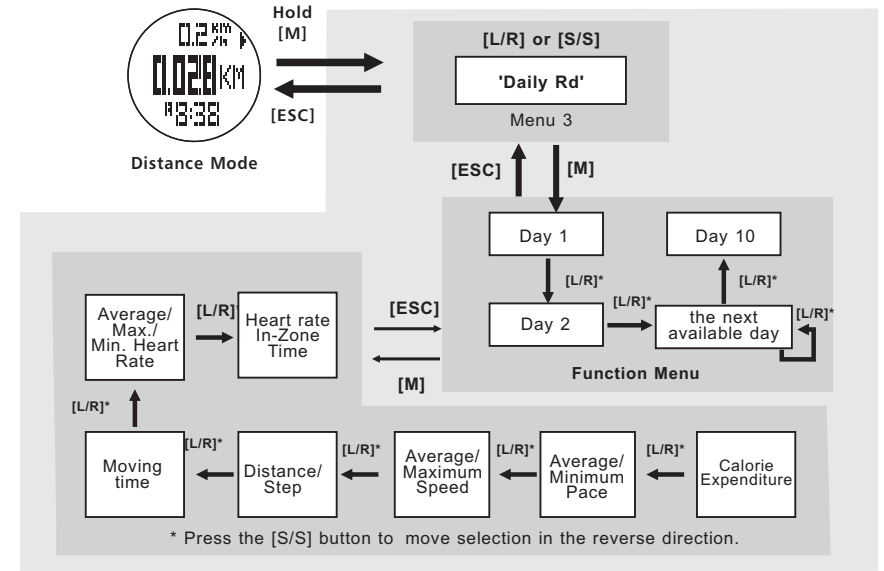
NOTE:

- Hold down [M] in Distance Mode to pop up the function menu. This Menu provides the supplementary functions for the Distance Mode.
- If the last session has NOT been saved, the Watch will auto save that session into today's record at midnight.

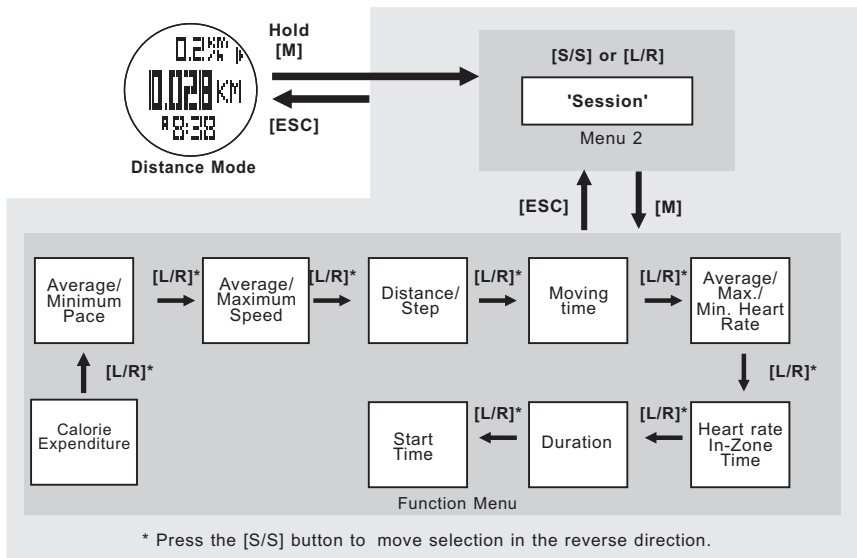
10.3.1 Distance Mode - Menu 1, Save (a Session)



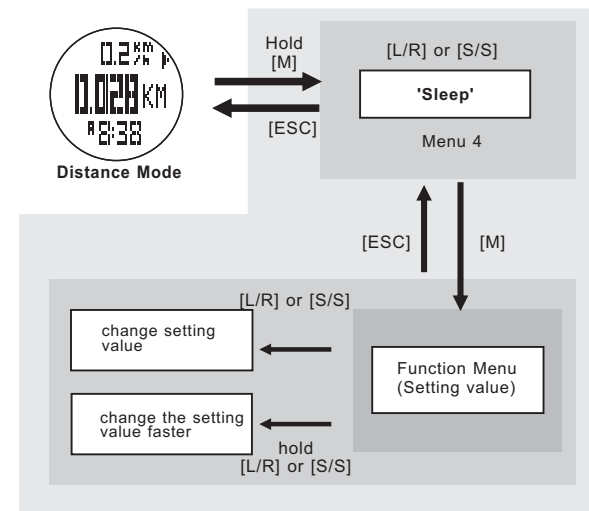
10.3.3 Distance Mode - Function Menu 3, Daily Record (Review)



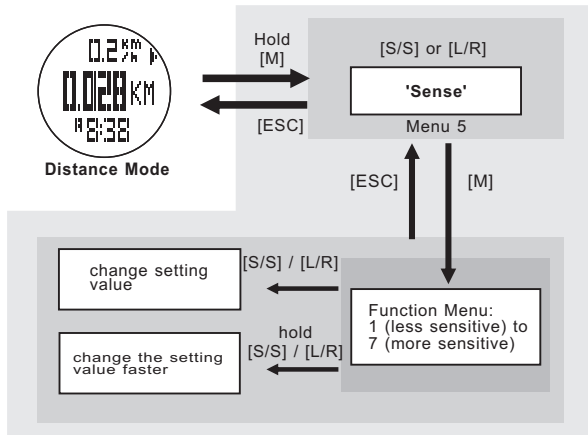
10.3.2 Distance Mode - Menu 2, Session (Review)



10.3.4 Distance Mode - Menu 4, Sleep (Time Setting)

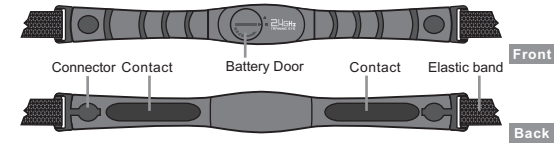


10.3.5 Distance Mode - Menu 5, Sense (Sensitivity Setting)

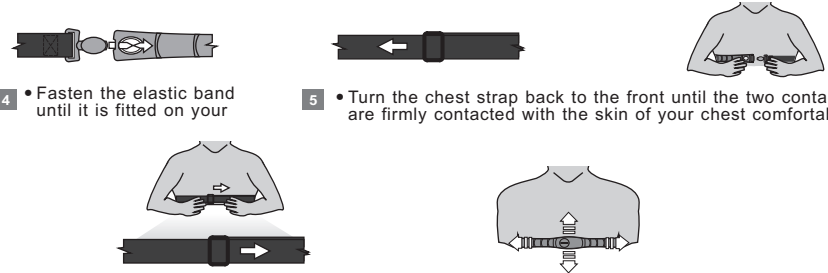


NOTE: This setting adjusts the sensitivity of the Watch to well suit user's walking or running pattern, i.e. Select a higher sensitivity value, the Watch will be more sensitive to detect a motion.

11.1 Heart Rate Mode: Wear Heart Rate Chest Strap on the Chest



- 1 • Connect one connector with the chest strap. Ensure the connector is completely lodged into
- 2 • Extend the elastic band for allowing a loose fitting the chest strap on the chest.
- 3 • Connect the remain connector with the chest strap.
- 4 • Fasten the elastic band until it is fitted on your
- 5 • Turn the chest strap back to the front until the two contacts are firmly contacted with the skin of your chest comfortably.



IMPORTANT: DO NOT wearing the chest strap on your cloth, otherwise the chest strap CANNOT get the heart rate signal.

NOTE: In dry seasons, wet the contacts with water to make the signal transmission normal.

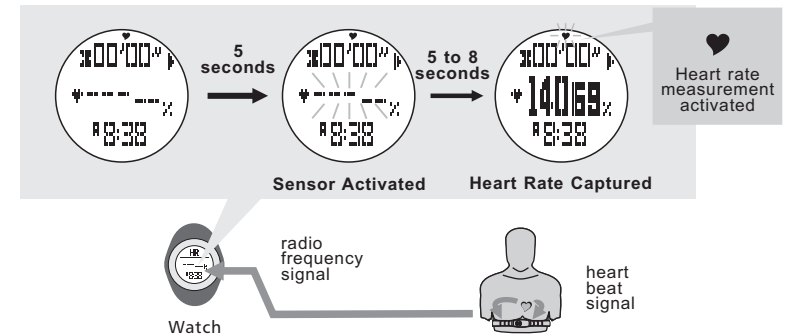
11.0 Heart Rate Mode: Heart Rate Functions



Current Heart Rate	Show current heart rate in beats per minute and percentage of estimated maximum heart rate.
Heart Rate Zone Alert	Alerts the user if the current heart rate falls above or below the defined zone.
Calorie Expenditure Calculation	Show the Calorie Expenditure which deduces from heart rate and other sensors.
Heart Rate Statistics	Show the average, minimum and maximum heart rate.
In Zone Timer	Show the elapsed time for which the heart rate falls within the defined Zone.
Save/view Session and Daily record	Logs the heart rate and other readings into a session, and save them into a daily record. View the current session or daily record.

Heart Rate Mode Function

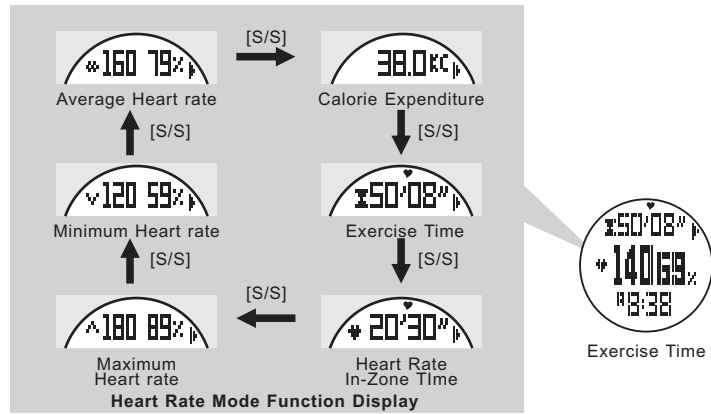
11.2 Heart Rate Mode: To get the Measurement



NOTE:

- (1) When enter Heart Rate Mode, the function (sensor) will be activated automatically after 5 seconds. Which can be activated manually too, see 9.0 for the detailed operations.
- (2) When the function (sensor) is activated, the Watch will aggregate the readings of the exercise into the current 'session'.
- (3) The data of the current session can be saved into the 'Daily Record' (11.8.1) or reviewed (11.8.2) by the Function Menu.
- (4) The 'Daily Record' can be reviewed by the Function Menu too (11.8.3). The Watch can store up to 10 daily records.
- (5) See 9.1 to reset the current session. See 11.7 for the resolution if NO heart rate or long response time.

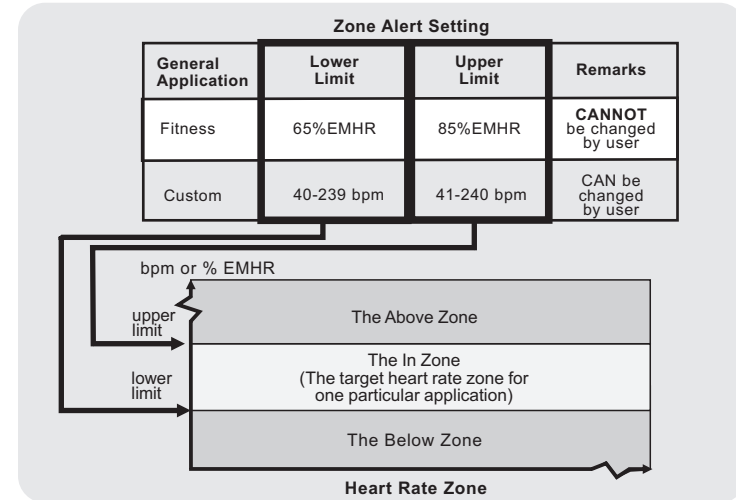
11.3 Heart Rate Mode: Heart Rate Function Displays



Note:

- (1) The Exercise Timer is counting independently, switched off the sensor or changed the screen to other mode will NOT affect the counting. i.e The same set of exercise time can be checked from either Heart Rate Mode, Distance Mode or User Mode.
- (2) The Calorie Expenditure is calculated by Heart Rate and Pedometer, changed the screen to other mode will NOT affect the calculation unless the sensor is switched OFF. i.e The same set of Calorie Expenditure can be checked from either Heart Rate Mode, Distance Mode or User Mode.

11.5 Heart Rate Mode: Lower/Upper Limits of Zone Alert



NOTE:

- (1) The lower and upper limit of the Zone Alert can be set at 11.8.4.

11.4 Heart Rate Mode: EMHR and %EMHR



Beats per minute (bpm) — Percentage of Estimated Maximum Heart Rate (%EMHR)

Estimated Maximum Heart Rate (EMHR)

- EMHR = 220 - age of the user

Percentage of Estimated Maximum Heart Rate (%EMHR)

- %EMHR = Acquired heart rate / EMHR X100%

An Example about EMHR and %EMHR for a user aged 18

- EMHR = 220 - 18 (user's age) = 202
- Acquired heart rate = 140 (by measurement).
- %EMHR = 140/ 202 X100% = 69%

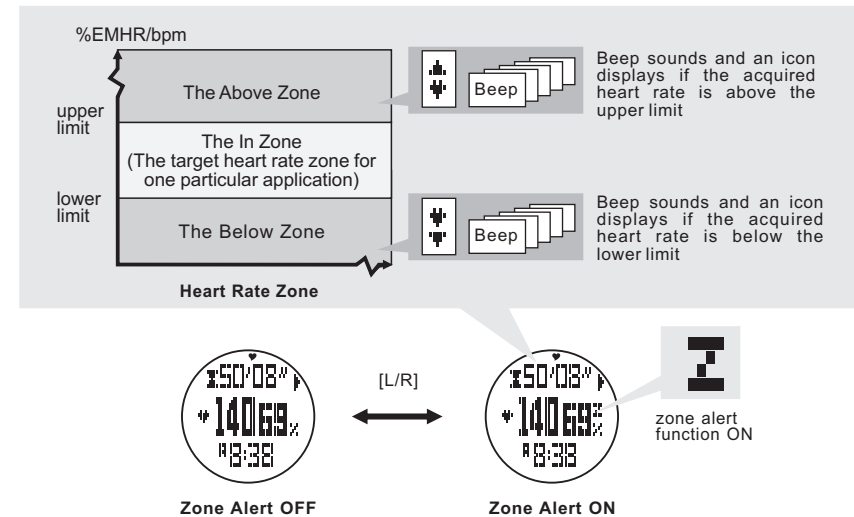
NOTE:

- (1) For general purpose, percentage of Estimated Maximum Heart Rate (%EMHR) can be used for Setting Zone Alert. For example, the lower or upper limit of the target Zone can be set as 50% or 85% EMHR respectively.

WARNING!

Zone Alert must be set according to application and one's own health conditions. Check your doctor or trainer before using this Zone Alert function.

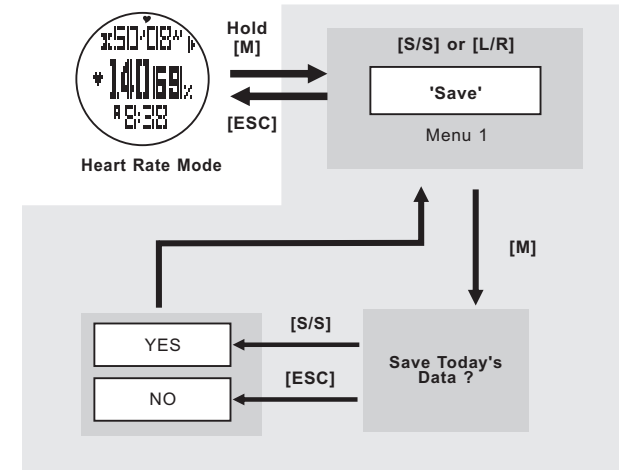
11.6 Heart Rate Mode: To Turn ON/OFF the Zone Alert



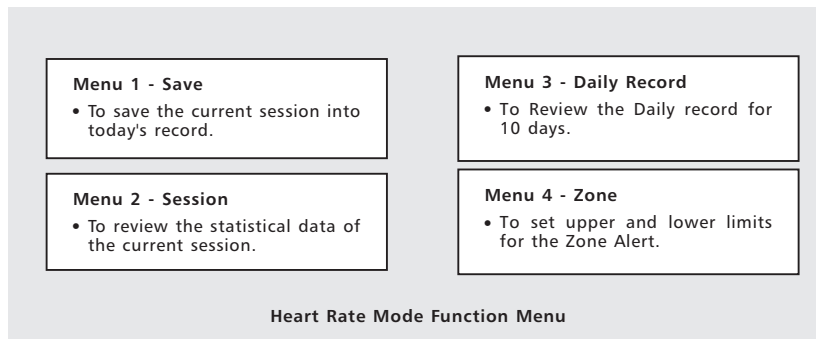
11.7 Heart Rate Mode: Causes for NO Heart Rate Reading or Long Response Time

- 1) **Cause: Dry Skin.**
Solution: Apply conductive gel or saliva thoroughly to chest area. (Even water will help if conductive gel is not available).
- 2) **Cause: Chest Strap are not placed firmly over the chest.**
Solution: Make sure the Chest Strap is firmly over the chest and the Watch is placed securely on wrist.
- 3) **Cause: Muscle tremors caused by holding the Chest Strap too hard on your chest.**
Solution: The contacts must make firm contact with the user's skin during measurement. This will ensure good and consistent readings even while walking or jogging with arms swung naturally.
- 4) **Cause: Dead skin on wrist.**
Solution: Usually rubbing your skin with a towel will help.
- 5) **Cause: A thin layer of body grease can insulate the ECG signal which prevents the contacts on the back of the Chest Strap from picking up one's ECG.**
Solution: Wipe chest and the back of Chest Strap with a tissue or soft towel.
- 6) **Cause: Hairy chest.**
Solution: Apply conductive gel to chest area.
- 7) **Cause: Irregular heartbeats.**
Solution: N/A It is difficult to consistently pick up a reading for those with irregular heart beats. Inconsistent response times are expected for those with arrhythmia.
- 8) **Cause: Battery Low.**
Solution: It might be due to the battery level of the Chest Strap is low. Replace the battery of the Chest Strap.

11.8.1 Heart Rate Mode: Menu 1, Save (a Session)

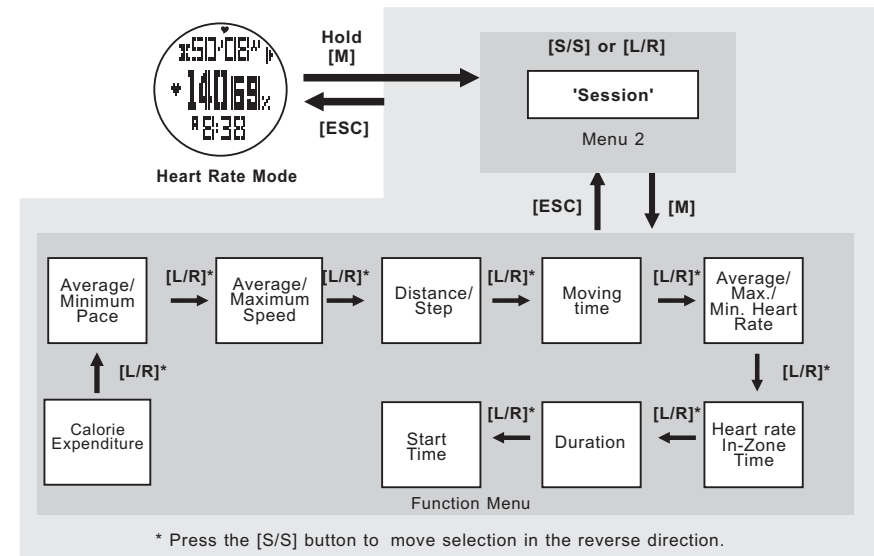


11.8 Heart Rate Mode: Heart Rate Mode Function

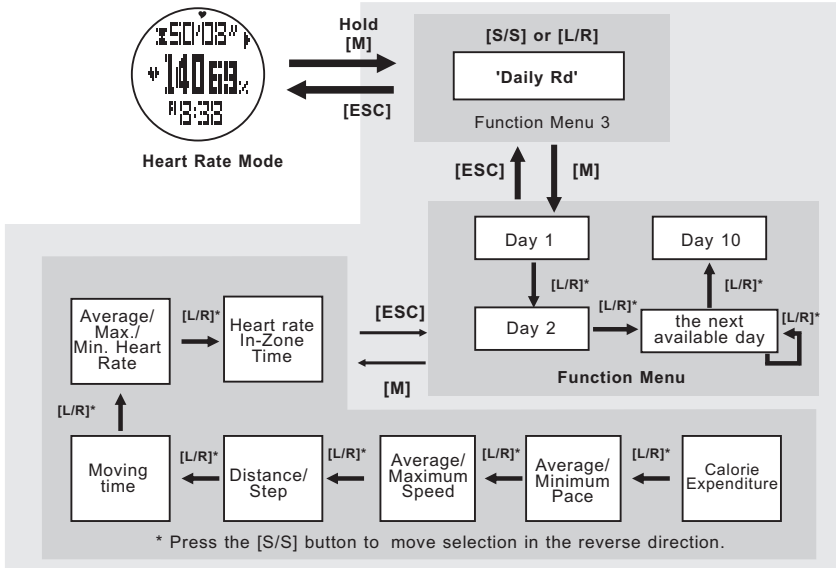


- Note:**
- (1) Hold down [M] in Heart Rate Mode to pop up the Function menu. This Menu provides the supplementary functions for the Heart Rate Mode.
 - (2) If the last session has NOT been saved, the Watch will auto save that session into today's record at midnight.

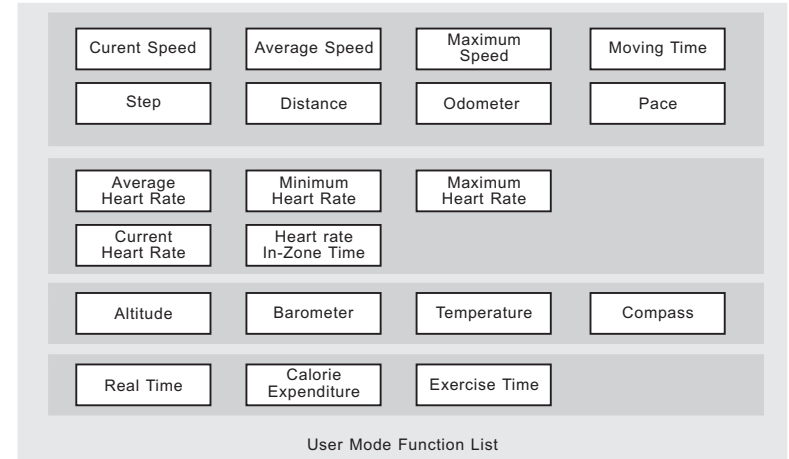
11.8.2 Heart Rate Mode: Menu 2, Session (Review)



11.8.3 Heart Rate Mode: Menu 3, Daily Record (Review)



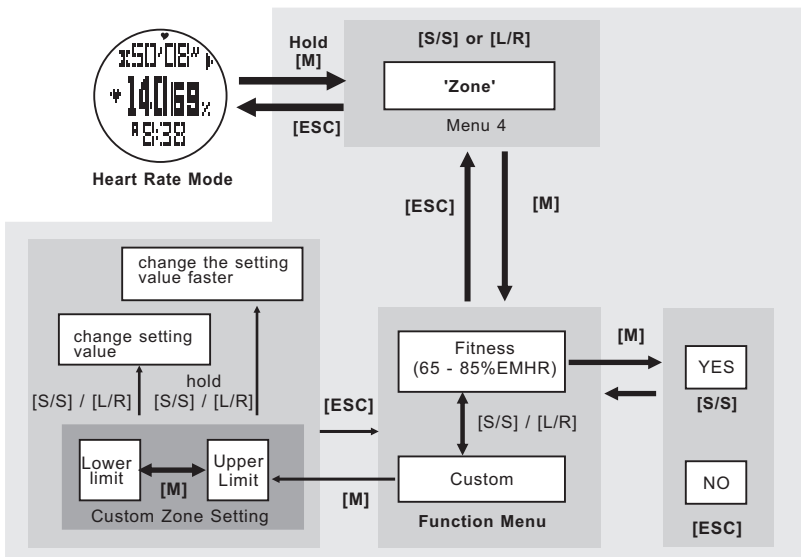
12.0 User Mode: User Mode Function



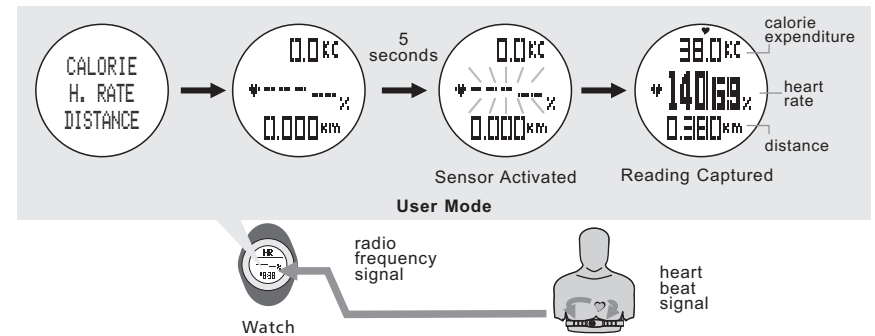
User can select one of the above 20 functions to display on the top, middle or bottom row of the display under User Mode.

IMPORTANT: This mode functions with the Chest Strap, see chapter 11 before the measurement.

10.8.4 Heart Rate Mode: Menu 4, Zone (Setting)



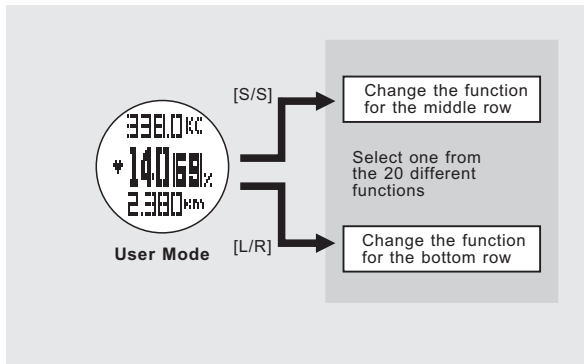
12.1 User Mode: To get the Measurement



NOTE:

- (1) When enter User Mode, the function (sensor) will be activated automatically after 5 seconds. Which can be activated manually too, see 9.0 for the detailed operations.
- (2) When the function (sensor) is activated, the Watch will aggregate the readings of the exercise into the current 'session'.
- (3) The data of the current session can be saved into the 'Daily Record' (12.3.1) or reviewed (12.3.2) by the Function Menu.
- (4) The 'Daily Record' can be reviewed by the Function Menu too (12.3.3). The Watch can store up to 10 daily records.
- (5) See 9.1 to reset the current session. See 11.7 for the resolution if NO heart rate or long response time.

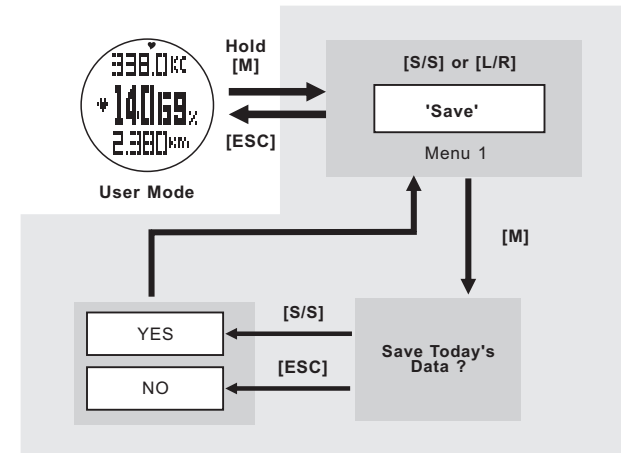
12.2 User Mode: To Change the Function Display



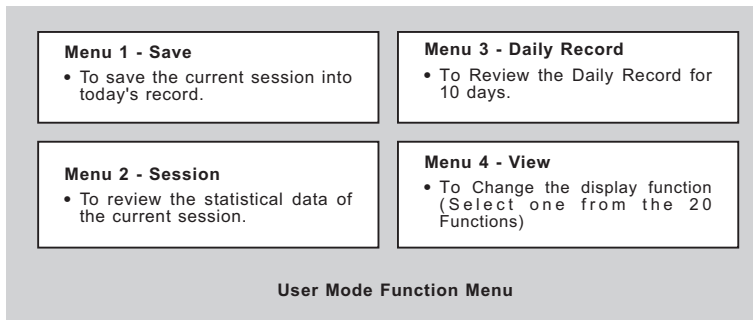
Note:

(1) See 12.3.4 for more detail about changing the display function for the top row.

12.3.1 User Mode: Menu 1, Save (a Session)



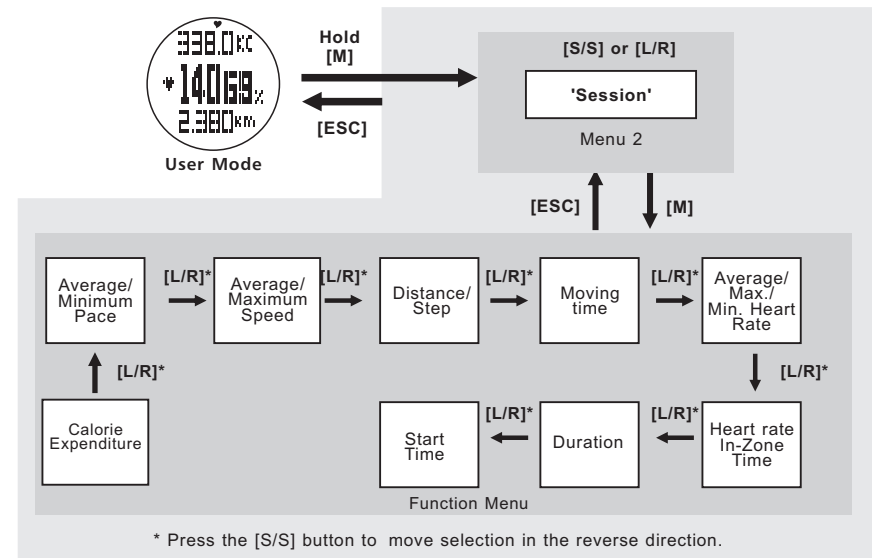
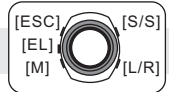
12.3 User Mode: Function Menu



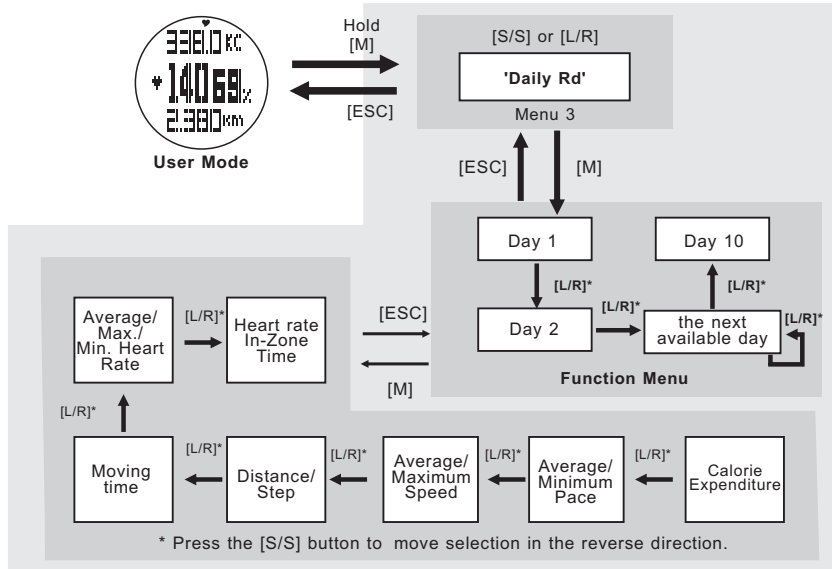
Note:

(1) Hold down [M] in User Mode to pop up the function menu. This Menu provides the supplementary functions for the User Mode.

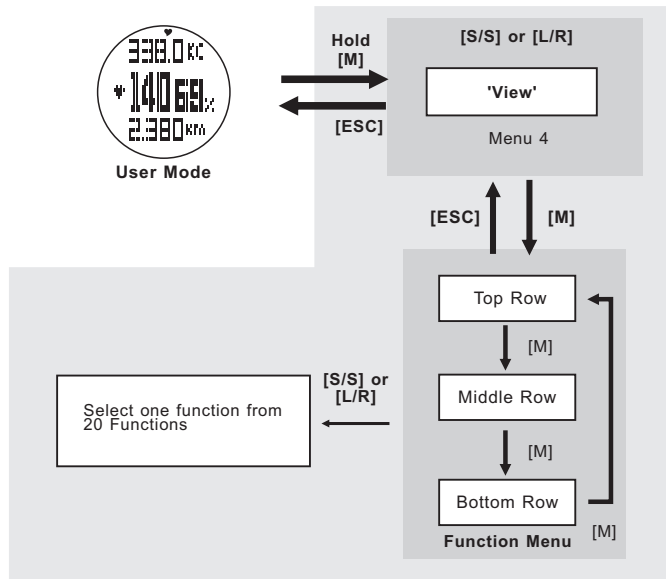
12.3.2 User Mode: Menu 2, Session (Review)



12.3.3 User Mode: Menu 3, Daily Record (Review)



12.3.4 User Mode: Menu 4, View (Display Setting)



13.0 Altimeter Mode - Function Overview

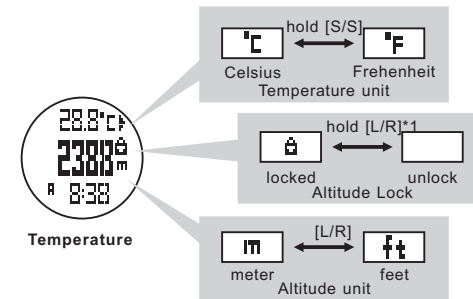


- Absolute Altitude
- Altitude Difference
- Altitude Graph
- Altitude Alarm
- Ascending/Descending Altitude
- 48 hour Altitude Log / Recall
- Altitude Lock
- Altitude Adjustment

Function Overview

- **Absolute Altitude:** The altitude difference between the current altitude and Sea Level (0 m).
- **Altitude Difference:** The altitude difference between the current altitude and the altitude where the altitude difference is set to zero.
- **Altitude Graph:** This altitude graph is plotted from the 48 Hour Altitude Log, the x-axis is the time variable (1 hour) while the y-axis is altitude variable.
- **Altitude Alarm:** An alert will prompt when the user passes through the defined altitude (from below or above the altitude). There are two altitude alarms - Altitude Alarm 1 and 2.
- **Ascending/Descending Altitude:** The Watch will count the ascending or descending altitude automatically when this function is activated.
- **48 Hour Altitude Log and readings Recall:** The Watch logs the altitude every hour at the hour automatically (i.e 1:00, 2:00, etc.) for 48 hours, and these logged altitude readings can be recalled by user.
- **Altitude Lock:** A function to lock the altitude. The altitude will not be changed when Altitude Lock is activated
- **Altitude Adjustment:** A function to calibrate the Watch to achieve a more accurate altitude reading.

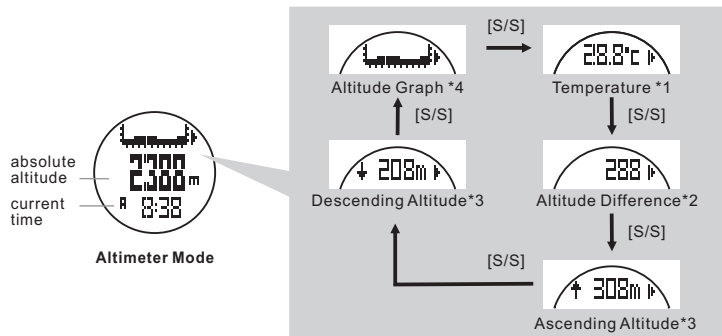
13.2 Altimeter Mode - Setting the Units and Altitude Lock



NOTE:

*1 The altitude will NOT be changed when Altitude Lock is activated. For example, activate Altitude Lock when staying in a campsite, it keeps the Watch's altitude unchange even a changing of weather overnight.

13.1 Altimeter Mode - Function Display



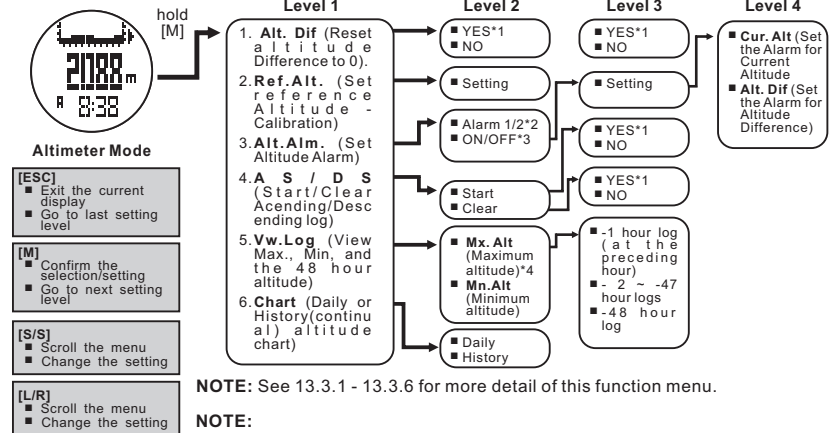
IMPORTANT:

*1. In order to get an accurate air temperature, remove the Watch from the wrist for a while (to eliminate body heat effect) before the measurement.

NOTE:

- *2. To get the Altitude Difference of two points, reset the Altitude Difference (Default:100 m) to 0 at the 1st. point.
- *3. To get Ascending and Descending altitude, start the AS/DS counter prior to the ascent or descent.
- *4. To read the Altitude Graph on a daily or continual basis, choose 'Daily' or 'History' Chart option at 14.3.6.

13.3 Altimeter Mode: Altimeter Function Menu

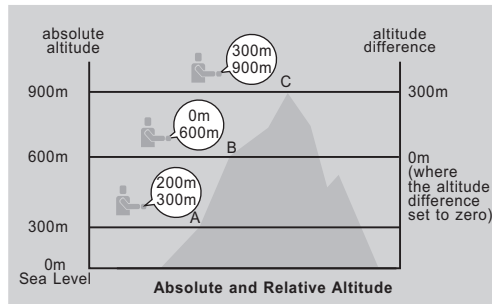


NOTE: See 13.3.1 - 13.3.6 for more detail of this function menu.

NOTE:

- *1. Press [S/S] to process the selection (Yes) or press [ESC] to escape out of the selection (NO).
- *2. Press [S/S] to select between Alarm 1 and Alarm 2.
- *3. Press [L/R] to select between 'ON' and 'OFF' the alarm. Hold down [M] to select setting display.
- *4. Press [M] to review the logged altitude.

13.3.1 Altimeter Mode: Menu 1, Resetting Altitude Difference



300m
900m

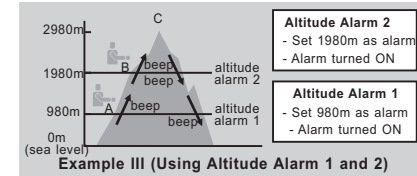
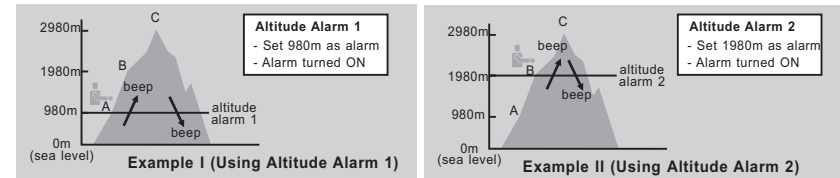
upper row:
altitude
difference

lower row:
absolute
altitude

NOTE:

- To get the Altitude Difference of two points (e.g point B and C), reset the Altitude Difference to 0 at the starting point (e.g point B). The watch will show the altitude difference of point B and C at point C (300m).
- See 13.3\Alt.Dif.\ to reset the Altitude Difference.

13.3.3 Altimeter Mode: Menu 3, Setting Altitude Alarm



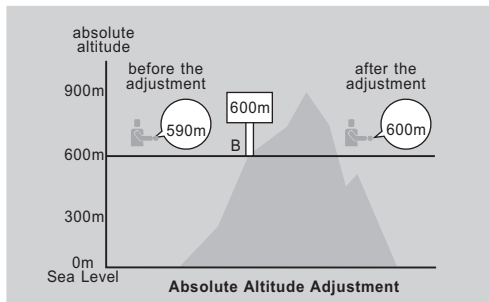
IMPORTANT:

- The altitude alarm will be sounded in Altimeter Mode only.

NOTE:

- Altitude Alarm 1 and 2 are independent alarm. These alarms CAN be set for absolute altitude or altitude difference.
- The alarm will sound if passing (either from below or from above) the predefined altitude.
- See 13.3\Alt. Alm\ to set the alarm.

13.3.2 Altimeter Mode: Menu 2, Calibrating Reference Altitude



Why the Altitude Need to be Adjusted

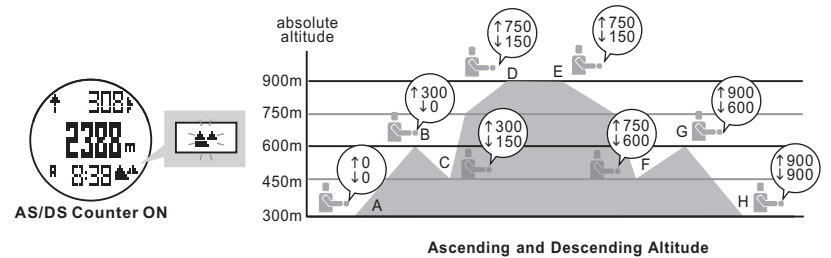
- This Watch calculates absolute altitude from air pressure, like most altimeters the change of air pressure would affect the altitude reading. As air pressure may change gradually even within hours, achieve a more accurate reading, the Watch need to be adjusted from time to time

Adjusting the Altitude

- Adjusting the altimeter at a place where the altitude is well-defined, like the place with an altitude sign pole (e.g marked 600 m).
- See 13.3\Ref.Alt.\ to input the reference altitude into the Watch.

IMPORTANT: Input an incorrect altitude, it results a mistaken altitude in future.

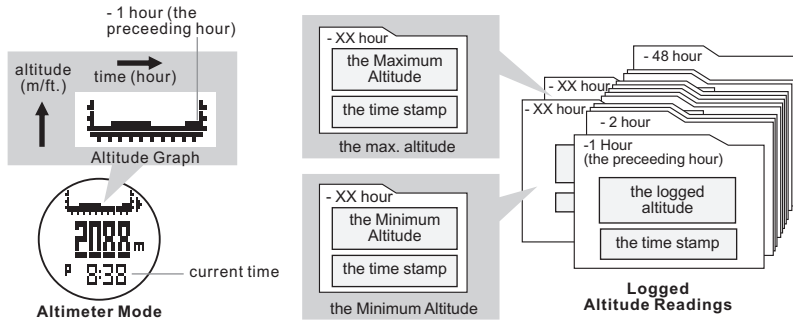
13.3.4 Altimeter Mode: Menu 4, Using AS/DS Counter



NOTE:

- To get Ascending/Descending Altitude, start the AS/DS function first.
- When the AS/DS Counter is ON, the 'AS/DS' indicator will be flashing on the display.
- When this function has been activated for over 24 hours in any function Mode (except Altimeter Mode), the AS/DS counting will be turned OFF automatically.
- Refer to 13.3\AS/DS\ to start/stop or clear the AS/DS counter.

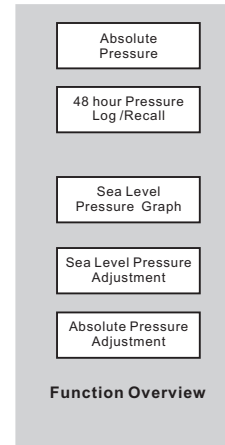
13.3.5 Altimeter Mode - Menu 5, Reviewing Altitude Log



48 Hour Altitude Log

- The Watch logs the altitude every hour at the hour for the last 48 hours automatically. For example, the current time is PM 8:38, the altitude readings were logged at PM 8:00 (-1 hour), PM 7:00 (-2 hour), PM 6:00 (-3 hour) and etc.
- These readings are further plotted into an altitude-time graph i.e. the Altitude Graph.
- The maximum and the minimum altitude with the respective time stamp will be sorted out from the log. These readings and other logged altitude readings of the last 48 hours can be reviewed by this menu.
- See 13.3\W. Log) to review the logged altitude readings.

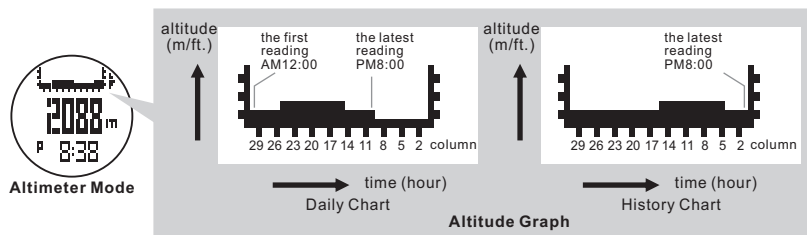
14.0 Barometer Mode - Function Overview



- **Absolute Pressure:** The pressure readings which detects currently on the current altitude.
- **48 Hour Sea Level Pressure Log and readings Recall:** The Watch logs the pressure readings automatically every hour at the hour, (i.e 1:00, 2:00, etc.) for 48 hours, and these logged pressure readings can be recalled by the user.
- **Sea Level Pressure Graph:** This pressure graph is plotted from the pressure readings which logged by the 48 Hour Sea Level Pressure Log.
- **Sea Level Pressure Adjustment:** A function to adjust the Watch to achieve a more accurate sea level pressure reading.
- **Absolute Pressure Adjustment:** A function to adjust the Watch to achieve a more accurate ambient pressure reading.

Function Overview

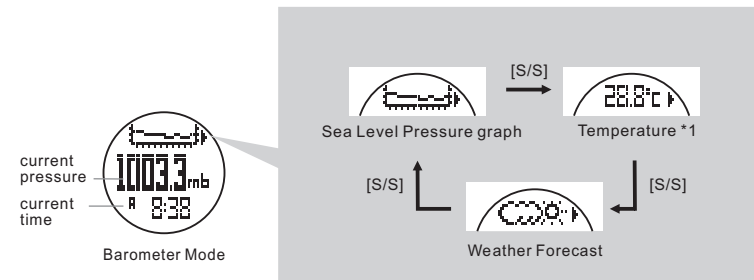
13.3.6 Altimeter Mode - Menu 6, Setting Chart for Altitude Graph



Altitude Graph

- The Graph shows the logged altitude readings (13.5) by the following two ways:
 - **Daily Chart** - Shows the logged altitude readings for the current day only. The 1st. log of the day (AM12:00) will be shown on the 30th column, the 2nd. log (AM1:00) will be shown on the 29th column, and the other readings are shown similarly, or
 - **History (Continual) Chart** - Shows the logged altitude readings continuously by First-In-First-Out data structure. The latest log will be shown on the 1st. column, the second latest log will be shown on the 2nd. column, and the other readings are shown similarly.
- See 13.3\Chart) to choose Daily or History Chart.

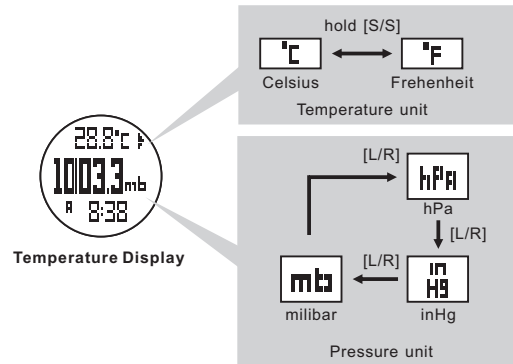
14.1 Barometer Mode - Function Display



IMPORTANT:

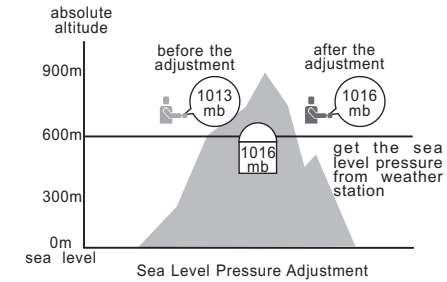
*1. In order to get an accurate air temperature, remove the Watch from the wrist for a while (to eliminate body heat effect) before the measurement.

14.2 Barometer Mode - Setting the Units



- The pressure and temperature display unit can be changed in Barometer Mode or in Current Time Mode. See 4.2\unit\ for the details of the setting.

14.3.1 Barometer Mode - Menu 1, Adjusting Sea Level Pressure

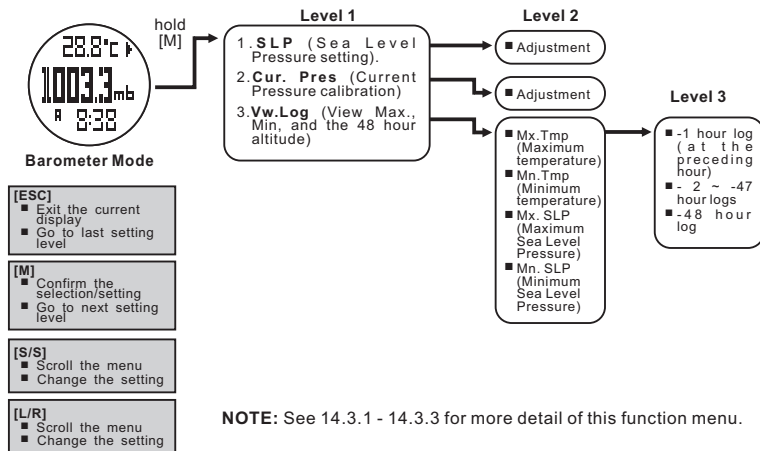


Why Sea Level Pressure need to be Adjusted

- This Watch includes a Sea Level Pressure adjustment feature, which CAN:
 - To achieve a more accurate Sea Level Pressure,
 - To achieve a more accurate Altitude (In case the exact altitude is NOT available for caibrating the reference altitude).
- Before calibrate the sea level pressure, consult the nearest observatory to get the sea level pressure of your current position.
- During the adjustment, input that Sea Level Pressure into the Watch.
- See 14.3\SLP\ to adjust the Sea Level Pressure.

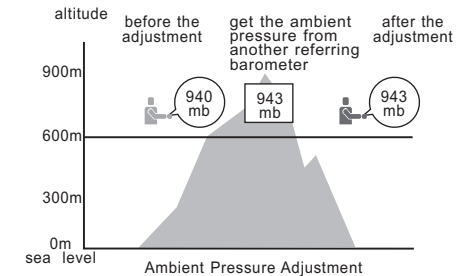
IMPORTANT: Input an incorrect pressure during the adjustment procedure, it results a mistaken pressure reading in future.

14.3 Barometer Mode: Barometer Function Menu



NOTE: See 14.3.1 - 14.3.3 for more detail of this function menu.

14.3.2 Barometer Mode - Menu 2, Adjusting Ambient Pressure

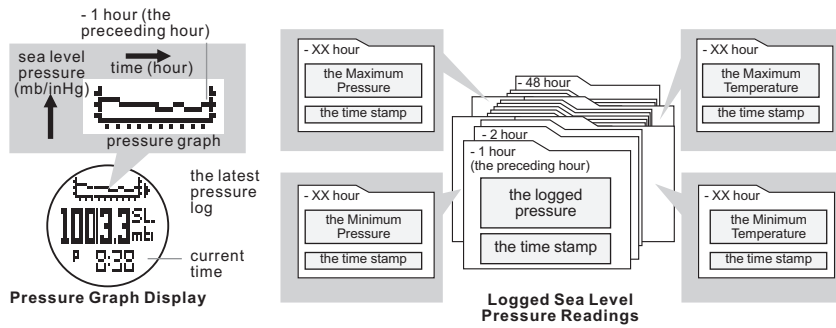


Why Ambient Pressure need to be Adjusted

- For achieve higher accuracy, this Watch includes an adjustment feature which allow user to adjust the ambient pressure.
- Before adjusting the ambient pressure, obtain another referring barometer to get the ambient pressure of your current position.
- During the adjustment, input that ambient pressure into the Watch.
- See 14.3\Cur. Pres\ to adjust the Ambient Pressure.

IMPORTANT: Input a incorrect pressure during the adjustment procedure, it results a mistaken pressure reading in future.

14.3.3 Barometer Mode- Menu 3, Reviewing Pressure Logs



48 Hour Sea Level Pressure Log

- The Watch logs the Sea Level Pressure every hour at the hour for the last 48 hours automatically. For example, the current time is PM 8:38, then the Sea Level Pressure readings were logged at PM 8:00 (-1 hour), PM 7:00 (-2 hour), PM 6:00 (-3 hour) and etc.
- These readings are further plotted into a pressure-time graph i.e the Sea Level Pressure Graph.
- The Maximum/Minimum Sea Level Pressure readings and the Maximum/Minimum Temperature readings with the respective time stamp will be sorted out from the log. These readings and other logged Sea Level Pressure readings of the last 48 hours can be reviewed by this menu.
- See 14.3.Vw. Log) to review the logged Sea Level Pressure readings.



15.0 Compass Mode - Function Overview



Compass Bearings

Compass Directions

North Pole Pointer

Backward Bearing

Compass Lock

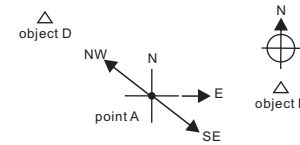
Compass Calibration

Magnetic Declination Compensation

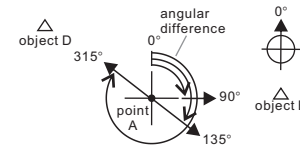
Function Overview

- A way to indicate the direction of an object by using the angular difference between North (0°) and the object (0° to 359°).
- A way to indicate the direction of an object by divided direction into 4, 8 or 16 directions (N,E,S,W, NE, SE, SW, NW and etc.)
- A pointer which always indicate the direction of magnetic north.
- The backward bearing indicates the opposite direction from normal bearing.
- A function to lock the compass bearing, compass direction and the magnetic north pole pointer.
- A process to allow the watch to self regulate the compass to achieve a more accurate compass reading.
- A setting to compensate the local magnetic declination to achieve a more accurate compass reading.

14.2 Compass Mode - Compass Directions and Bearings



Compass Directions



Compass Bearings

Marks	Compass Directions	Compass Bearing
N	North	349° - 11°
NNE	North Northeast	12° - 33°
NE	Northeast	34° - 56°
ENE	East Northeast	57° - 78°
E	East	79° - 101°
ESE	East Southeast	102° - 123°
SE	Southeast	124° - 146°
SSE	South Southeast	147° - 168°
S	South	169° - 191°
SSW	South Southwest	192° - 213°
SW	Southwest	214° - 236°
WSW	West Southwest	237° - 258°
W	West	259° - 281°
WNW	West Northwest	282° - 303°
NW	Northwest	304° - 326°
NNW	North Northwest	327° - 348°

NOTE:

- This Watch includes both compass directions and compass bearings.

15.1 Compass Mode - Precautions



Keep the Watch away from Magnetic sources, like:

- Speakers,
- Motors,
- Mobile phones and etc.

Avoid measuring direction when:

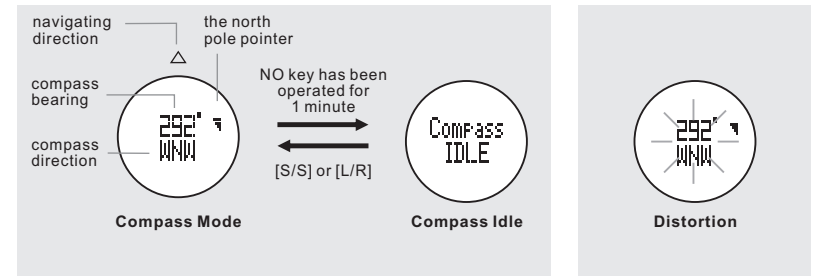
- Close to a magnetic object
- Close to metallic object
- Close to an electrical appliance
- Inside a moving object.

Perform compass calibration or magnetic declination compensation process when:

- The Watch is using for the first time,
- The battery has been replaced,
- The bearing direction digits are flashing, and the compass bearing and compass direction are flashing
- The compass use in a location that is apart from the place in which the compass had been calibrated,
- The user intends to regulate the precision of the digital compass.

Tips and Precautions

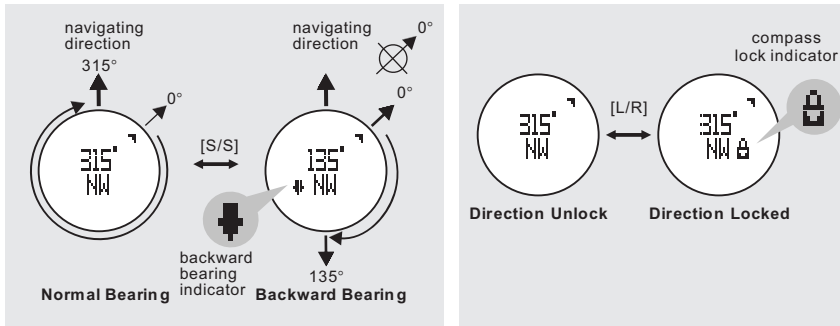
15.3 Compass Mode - Compass Display



NOTE:

- If NO key has been operated for about 1 minute, the Watch will go to IDLE Mode automatically. Press [S/S] or [L/R] to resume the compass to normal operation.
- If distortion is detected, the compass bearing and compass direction are flashing. See 15.6(Calibrate) to restore the compass to normal operation when distortion occur.

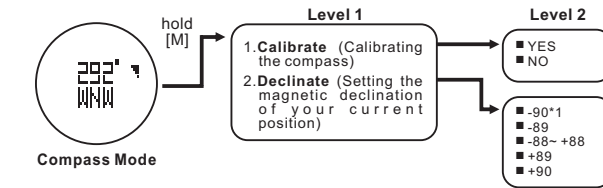
15.4 Compass Mode - Backward Bearing and Compass Lock



NOTE:

- When the 'Backward Bearing indicator' is appeared, the Watch is showing the backward bearing direction of the navigating direction.
- When the 'Lock' indicator is appeared, the compass direction, bearing direction and the magnetic north pole pointer are locked.
- The Compass Lock will be released automatically when the Watch enter IDLE Mode.

15.6 Compass Mode - Compass Function Menu



[ESC]

- Exit the current display
- Go to last setting level

[M]

- Confirm the selection/setting
- Go to next setting level

[S/S]

- Scroll the menu
- Change the setting

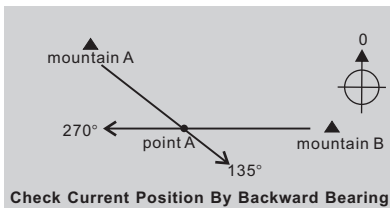
[L/R]

- Scroll the menu
- Change the setting

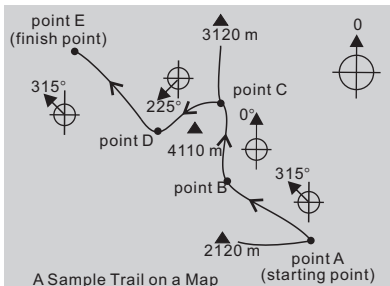
NOTE: See 15.6.1 - 15.6.2.2 for more detail of this function menu.

*1. See 15.6.2.2 to select the magnetic declination value of the city which is close to your current position.

15.5 Compass Mode - Applications of the Compass



Check Current Position By Backward Bearing



A Sample Trail on a Map

How to Check your Position by Backward Bearing

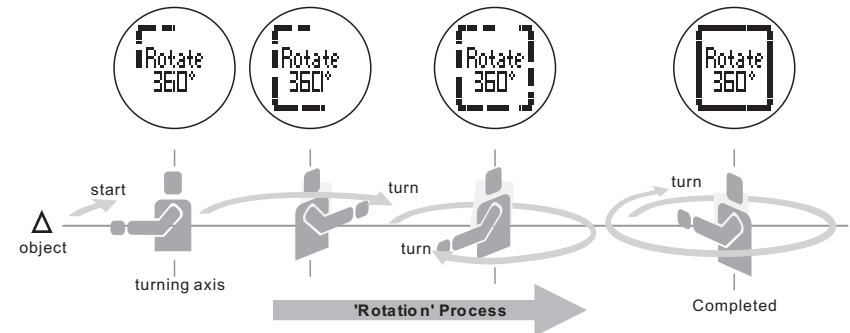
- Spot two distant identifiable landmarks such as mountain, light-house or fort from your current position, like the mountain A and B.
- Check out the backward bearing directions of mountain A and B from your current position, i.e 135° from mountain A and 270° from mountain B.
- Use a ruler to draw the line 135° on the map which starting from the mountain A. Draw the lines 270° on the map which starting from the mountain B.
- Your current position on the map will be the interchapter point (point A) of the lines 135° and 270°

How to Check the Trek Course Correct

- Mark the points (identifiable landmarks) where the trail turns its direction or the trail branches its way, such as the point A, B, C, D and E on the adjacent diagram.
- Find out the bearing directions of point B from point A (315°), point C from point B (0°), point D from point C (225°), and then point E from point D (315°).
- During the trekking, make sure that the heading direction is 315° from point A to point B. Performing the similar checking for other sections of the trail.

IMPORTANT: If you are in doubt of the directions and positions of the trail, consult the park administration office before starting the trekking.

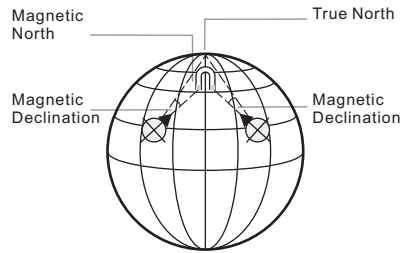
15.6.1 Compass Mode - Menu 1, Calibrating the Compass



NOTE:

- During the 'rotation' process, ensure the following practices are carrying out:
 - Turning steadily - Keep the time for the 'rotation' for about 20 to 30 seconds,
 - IMPORTANT:** Keep the Watch parallel to the horizon
 - Perform the 'rotation' process in a open space.
- Locate an object in front of you, then steadily turn your body clockwise along the vertical axis of your body.
- The Watch is calibrated if a square appear on the display.
- When the calibration is completed, press [ESC] to exit the calibration.
- See 15.6/calibrate for starting the calibration.

15.6.2 Compass Mode - Menu 2, Setting Magnetic Declination



What is Magnetic Declination

- The Magnetic North Pole which is slightly different from the True North Pole. This Watch, like most magnetic compass, points to the Magnetic North Pole, while everything measure from a map is related to the True North Pole.
- The angular difference between Magnetic North Pole and True North Pole is called magnetic declination. Its amount (degrees and minutes) and direction (easterly and westerly) depend on where you are in the world.
- For serious compass user or whom intends to perform accurate navigation, this Watch must be adjusted for magnetic declination.

Magnetic Declination Information

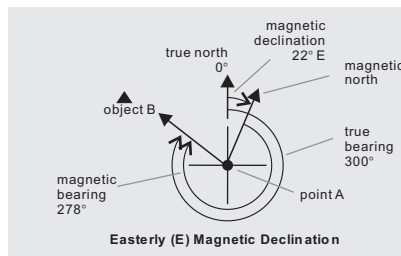
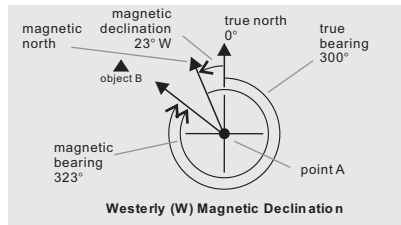
- Most topographic maps include a small arrow which shown magnetic north pole and or the magnetic declination information.
- This manual includes the magnetic declination for some major cities. See the coming chapter 'Magnetic Declination at Major Cities' for more detail.
- For the cities are not included in the list, please refer to the online magnetic declination calculator at:
 - http://geomag.nrcan.gc.ca/apps/mdcal_e.php
 - <http://www.ngdc.noaa.gov/seg/geomag/jsp/Declination.jsp>

15.6.2.2 Compass Mode - Menu 2, Setting Magnetic Declination



No.	Country/Place	Major City	Declination	No.	Country/Place	Major City	Declination
1	Afghanistan	Kabul	+2E	33	Netherlands	Amsterdam	-1W
2	Australia	Canberra	+12E	34	New Zealand	Wellington	-22E
3	Austria	Vienna	+2E	35	Norway	Oslo	0
4	Bahrain	Manama	+2E	36	Pakistan	Islamabad	+2E
5	Bangladesh	Dhaka	0	37	Philippines	Manila	-1W
6	Belgium	Brussels	-1W	38	Portugal	Lisbon	-5W
7	Brazil	Brasilia	-19W	39	Russia	Moscow	+9E
8	Canada	Ottawa	-14W	40	Singapore	Singapore	0
9	Chile	Santiago	+5E	41	South Africa	Cape Town	-23W
10	China	Beijing	-6W	42	Spain	Madrid	-3W
11	China	Hong Kong	-2W	43	Sweden	Stockholm	+3E
12	Costa Rica	San Jose	0	44	Switzerland	Bern	0
13	Cuba	Havana	-3W	45	Taiwan	Tai-pei	-3W
14	Czech Republic	Prague	+2E	46	Thailand	Bangkok	0
15	Denmark	Copenhagen	+1E	47	UAE	Abu Dhabi	+1E
16	Egypt	Cairo	+3E	48	United Kingdom	London	-3W
17	Finland	Helsinki	+6E	49	United States	Washington, DC	-10W
18	France	Paris	-1W	50		Juneau	+25E
19	Germany	Berlin	+1E	51		Phoenix	+12E
20	Greece	Athens	+3E	52		Little Rock	+2E
21	Hungary	Budapest	+4E	53		Sacramento	+16E
22	India	New Delhi	+1E	54		Denver	+10E
23	Indonesia	Jakarta	+1E	55		Atlanta	-4W
24	Israel	Jerusalem	+3E	56		Honolulu	+10E
25	Italy	Rome	+1E	57		Boston	-16W
26	Japan	Tokyo	-7W	58		Saint Paul	+2E
27	Jordan	Amman	+3E	59		Jackson	+1E
28	Kenya	Nairobi	+1E	60		Santa Fe	+10E
29	Korea	Seoul	-7W	61		Oklahoma City	+6E
30	Malaysia	Kuala Lumpur	+1E	62		Salem	+18E
31	Mexico	Mexico City	+6E	63		Harrisburg	-11W
32	Nepal	Kathmandu	0	64		Salt Lake City	+14E

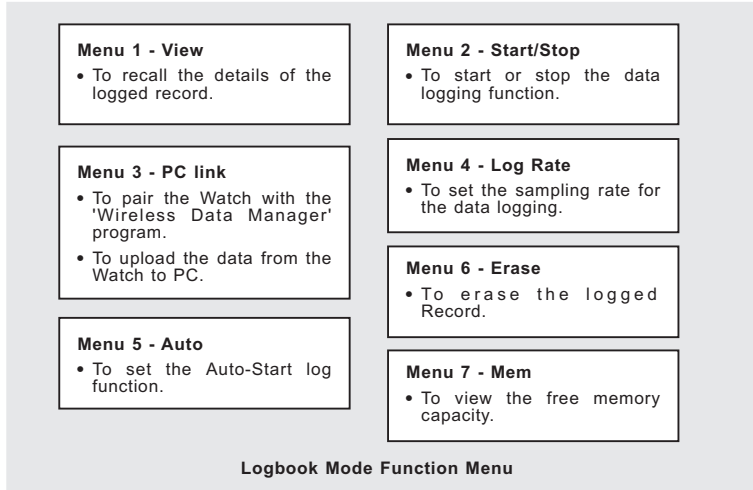
15.6.2.1 Compass Mode - Menu 2, Setting Magnetic Declination



Magnetic Declination Compensation Examples

- To get an object's true bearing (TB) by subtract westerly (W) magnetic declination or add easterly (E) magnetic declination with the magnetic bearing (MB).
- Example 1: 23° Westerly magnetic declination and the compass needle points 323°.
 - $TB = MB - W$. While $MB = 323^\circ$; $W = 23^\circ$
 - $TB = 323^\circ - 23^\circ$
 - $TB = 300^\circ$
 - The true bearing will be 300°.
- Example 2: 22° Easterly magnetic declination and the compass needle points 278°.
 - $TB = MB + E$. While $MB = 278^\circ$; $E = 22^\circ$
 - $TB = 278^\circ + 22^\circ$
 - $TB = 300^\circ$
 - The true bearing will be 300°.
- The Watch can compensate the compass bearing at a place where the magnetic declination is either Westerly declination or Easterly declination.

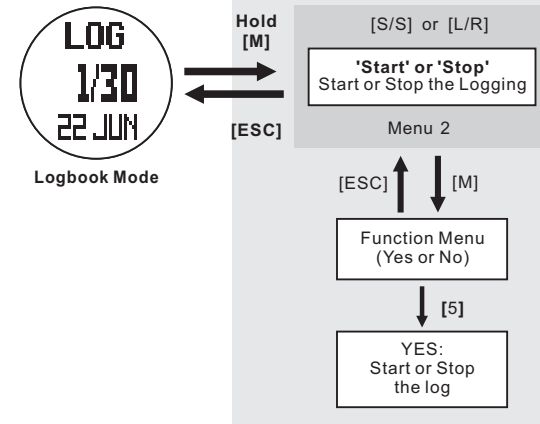
16.0 Logbook Mode - Logbook Function Menu



Note:

- (1) Hold down [M] in Logbook Mode to pop up the function menu. This Menu provides the supplementary functions for the Logbook Mode.

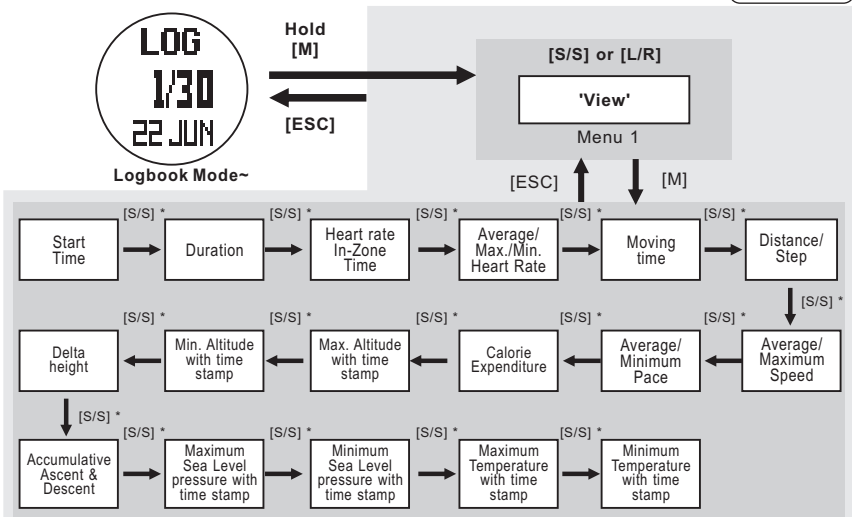
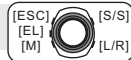
16.0.2 Logbook Mode - Function Menu 2, Start/Stop the Logbook



Note:

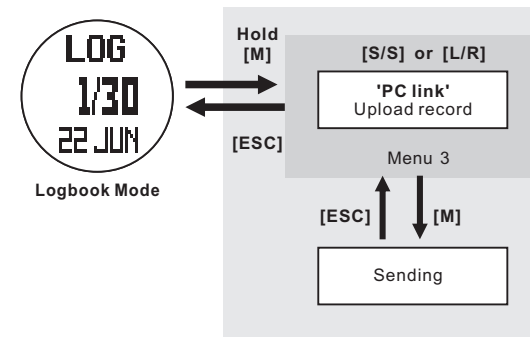
- (1) While the Log function is started, a 'LOG' indicators start flashing on the screen, the Watch will create a new log session and log the readings into a 'record' at the pre-defined log rate.
- (2) This Log function can be started or stopped at Heart Rate, Distance and User Mode by holding down [S/S], see 9.0 for the detailed operations.

16.0.1 Logbook Mode - Function Menu 1 - View



~Press [S/S] or [L/R] button to select a target session (e.g 1/30, 2/30... 30/30) for review.
 * Press [L/R] button to move selection in the reverse direction.
IMPORTANT: If a log is started, the session cannot be viewed.

16.0.3 Logbook Mode - Menu 3, PC Link

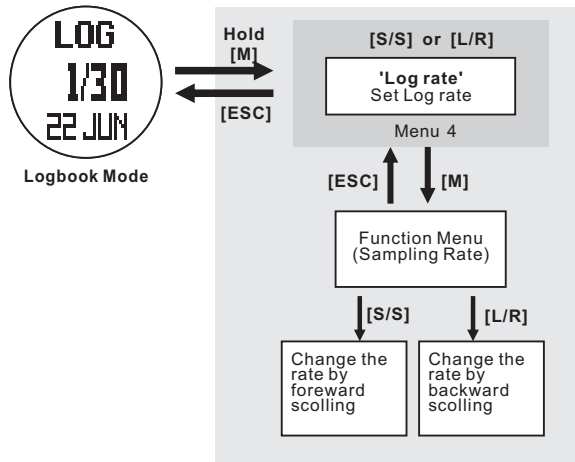


IMPORTANT: This mode is functioned with the PC Pod, read the corresponding chapter before the upload.

Note:

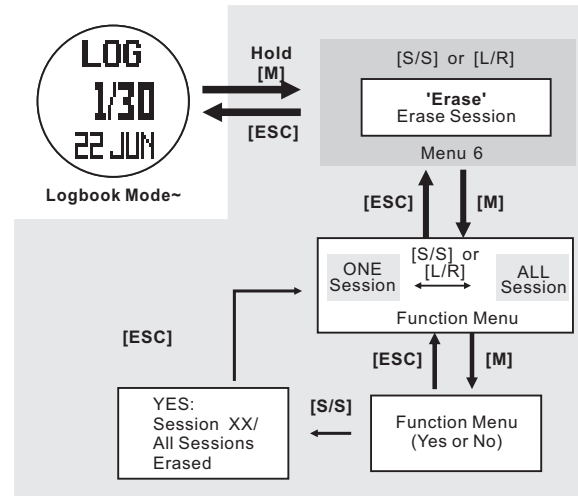
- (1) Install the connection software 'Data Manager' into the target PC, and execute that software.
- (2) Connect the PC Pod to the USB port of that PC.
- (3) Start the upload from the Watch.

16.0.4 Logbook Mode - Menu 4, Log Rate (Setting)



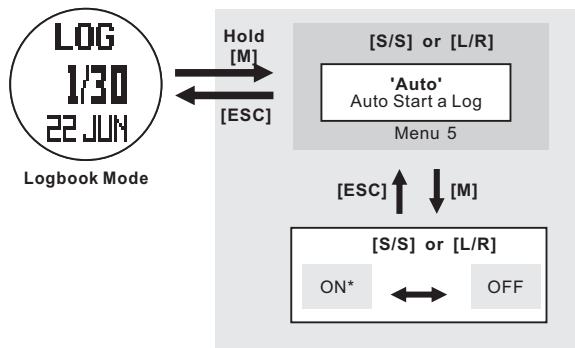
IMPORTANT: If a log is started, the log rate cannot be changed.

16.0.6 Logbook Mode - Menu 6, Erase (Session for Logbook)



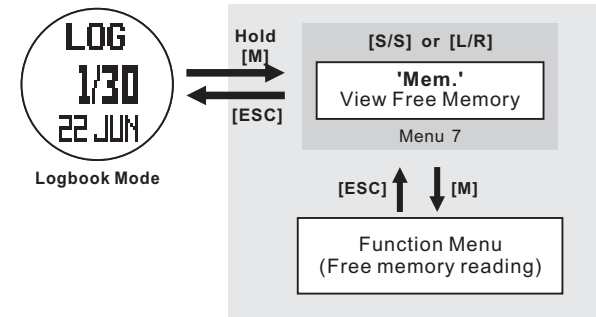
~Press the [S/S] or [L/R] button to select a target session (e.g 1/30, 2/30... 30/30) for erase

16.0.5 Logbook Mode - Menu 5, Auto (Log Auto Start Setting)

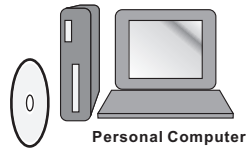


Note: If 'ON' is selected, activating the sensor in Distance, Heart Rate or User Mode will start the log function too.

16.0.7 Logbook Mode - Menu 7, View (Free Memory)



17.0 PC Link - To Install the Program



Personal Computer



Personal Computer

1

Insert the bundled CD into the CD drive of the target PC. The menu will show automatically.

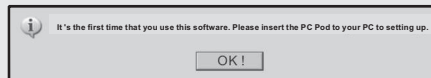
2

Click the 'PC Software' button from the side menu and then the 'here' button to execute the installation wizard.

3

Follow the instructions to install the program into the target PC.

17.1 PC Link - To Pair the Watch & Chest Strap with the Program



Personal Computer

NOTE: During the pairing,

- (1) The Watch MUST be switched to PC-Link Display of the Logbook Mode, and activate the PC-link function.
- (2) The Chest Strap MUST be worn on the chest or press the two contacts (i.e heart rate signal is sampling).

1

When the installation is completed, execute the 'Wireless Data Manger' Program from the Window program menu bar.

2

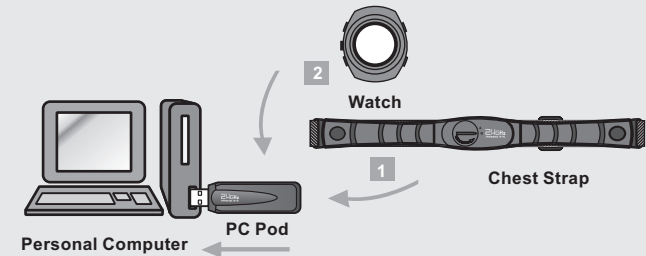
The wizard will guide you to pair the Watch, Chest Strap with the program.

3

When the pairing is done. The ID of the Watch, chest strap will be saved into the program.

Tips: For some instance, the Watch and the Chest Strap can be paired with the program again under the '**Option**' top menu and the '**Setting**' option.

17.2 PC Link - Data Send to PC via the PC Pod



IMPORTANT: Put the Watch or Chest Strap in the place within 6 meters from the PC Pod, otherwise the PC Pod MAY NOT receive the data from the device.

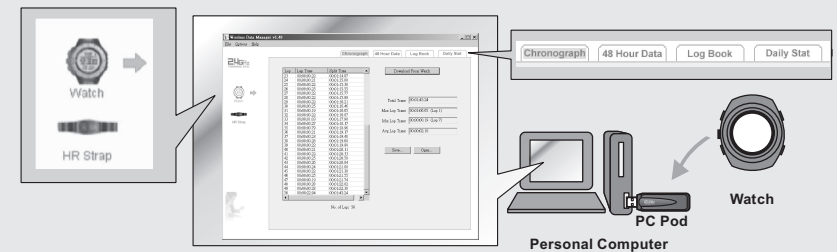
1

The data send to PC from the Heart Rate Chest Strap:
(1) Real-time heart rate, Average Heart Rate, Minimum Heart Rate and Maximum Heart Rate .

2

The data send to PC from the Watch:
(1) Chronograph logs: Lap time and split time for every lap, Maximum, Average, Minimum Lap time and the total time.
(2) 48 Hour logs: Altitude, temperature and pressure readings for last 48 hours.
(3) Logbook logs: Session info (Start time, log rate, no. of session, duration, etc) and the data summary of the Session (Calorie expenditure, etc.)
(4) Daily Statistic logs: The daily data summary for Speed, Distance, Calorie, heart rate, etc.

17.3 PC Link - Download/Analyse/Save Data from the Watch



NOTE:

The watch MUST be switched to PC-Link Display of the Logbook Mode, and activate the PC-link function.

1

Click the ' Watch' icon from the side menu to pop the 'Watch' Page.

2

Select the 'Chronograph', '48 Hour Data', 'Logbook' or 'Daily Stat' page from the top menu.

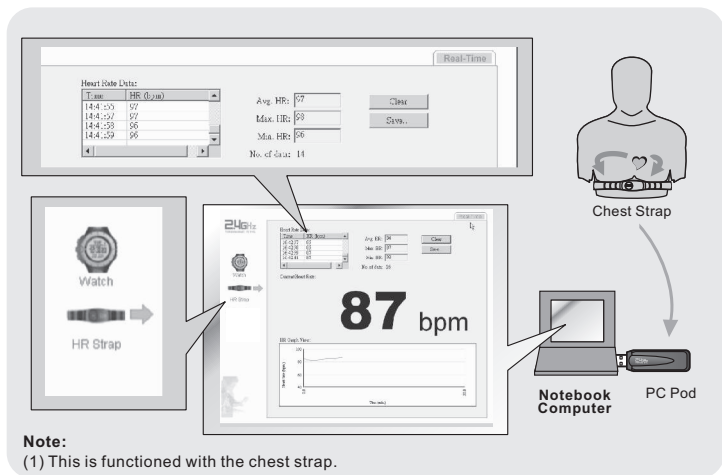
3

Click 'Download' button to download the data from the Watch through the corresponding page. The respective data will be shown on the screen after a while.

4

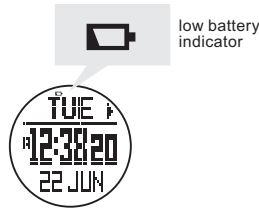
Analyze the data on the PC by the options provided by the program. Save the data into PC for further analysis.

17.4 PC Link - Analyse/Save Real-Time Data from the Chest Strap



- 1 Click the 'HR Strap' icon from the side menu to pop the 'Chest Strap' Page.
- 2 The real-time heart rate readings will be shown on that page.
- 3 Analyze the data on the PC by the options provided by the program.
- 4 Save the data into PC for further analysis.

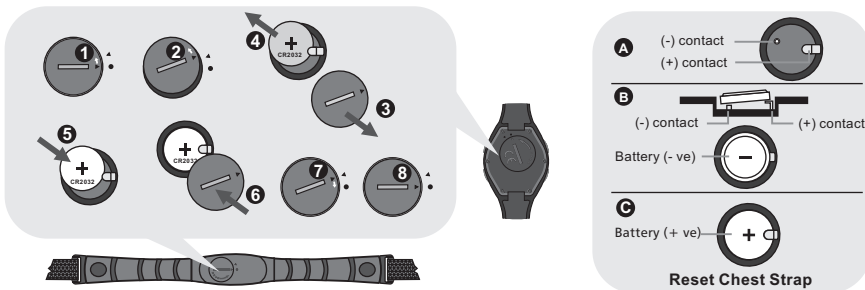
18.0 Battery - Low Battery Indication



Note:

- Replace the battery with a new CR2032.
- However, if the appearance of battery-low indicator is caused by using the Watch under very cold condition, the indicator will be disappeared when normal temperature returns.
- It is recommended to complete the battery replacement by a certified service agency, because this Watch contains precise electronic sensors and components.
- The memory will be cleared if the battery has been replaced.
- See 15.6\calibrate\ to calibrate the compass before using the Compass again.

18.1 Battery - To Replace Battery for the Chest Strap and Watch



1. Turn the battery cover with a coin counterclockwise until the arrow pointing to arrow.
2. Turn the cover further gently to pop it out.
3. Put aside the battery cover.
4. Remove the empty battery.
5. Insert a new **CR2032** battery with the (+) side of the battery touch with the 'L' shape metal contact.
6. **IMPORTANT:** Make sure that the sealing rubber o-ring is placed correctly in its slot before the battery cover is closed.
7. Put the battery cover back with the arrow on the cover pointing to the arrow, and then press the cover down gently until it is on the same level with the surface.
8. Turn the cover with the coin clockwise until the arrow pointing to dot.

Tips: In case the chest strap CANNOT properly reset (NO signal transmission), resolve this problem with the following steps: A) Remove the battery, B) Short the (+) and (-) battery contact of the chest strap with the metal shell (+ ve) of the battery, C) Reinstall the battery for normal operations.

19.0 Specifications - Timekeeping Mode

Current Time Mode

- Hour, minute, second, am, pm, month, date
- Day of week, weather forecast, temperature, sea level pressure history display or altitude history.
- Time System: 12-hour or 24-hour format
- Calendar System
- Auto-Calendar pre-programmed from the year 2000 to 2099
- Weather Forecast: 4 symbols to indicate the predicted weather

Daily Alarm Mode

- 2 daily or weekly alarms
- Hourly chime
- Alarm Sound
- Sounds for 30 seconds at preset time

Chronograph Mode

- Resolution: 1/100 second
- Measuring Range: 99 hours 59 minutes 59.99 seconds
- Measuring Mode: 50 lap memories; Recall lap memories and total time.

Countdown Timer Mode

- Resolution: 1 second resolution
- Measuring range: 99 hours 59 minutes 59 seconds
- Operation Mode: Countdown
- Quick Set : 5 quick set Values (3, 5, 10, 15 and 45 minutes)
- Timer Sounds:
 - Last 10 minutes beep once every minute
 - Last 1 minute beeps once every 10 seconds
 - Last 5 seconds beeps once every second
 - Sounds for 30 seconds when count to zero

Dual Time Mode

- Hour, minute, second

19.1 Specifications - Sensor Mode

Logbook Mode

- 10 statistical daily records
- Logbook up to 100 sessions

Heart Rate Measurement

- Measuring Range: 40 to 240 BPM
- Heart rate alert
- Heart Rate In-zone timer 00:00:00 to 23:59:59
- 1 Exercise Timer
- 2 Heart rate zone limit selection

- Calorie Expenditure range: 0-99999 kcal

Distance Mode

- Steps range: 0-999999
- Motion Timer: 00:00:00 to 23:59:59
- 1 Exercise Timer
- Distance Measurement: max. 400 km
- Odometer Measurement: max. 999 km
- Speed Measurement: max. 299 km/h
- Pace Measurement: 00:00 to 59:59 m/km
- Pedometer sensitivity selection: 7 levels

Altimeter Mode

- Resolution : 1m (1ft)
- Measuring range: -706m to 9164m (-2316ft to 30067ft)
- Sampling Interval: First 5 min: 1 sec; After 5 min: 1 minute
- History Recall: Maximum 48 hours history recall
- Altitude Alarm: 2 altitude alarms

Barometer Mode

- Resolution/ Measuring Range: 300 hPa/mbar to 1100 hPa/mbar (8.85 inHg to 32.48 inHg)
- Sampling Interval : First 5 min: 1 second; After 5 min: 1 min
- History Recall: Maximum 48 hours history recall

Thermometer

- Resolution: 0.1 °C (0.1°F)
- Measuring range: -10.0 °C to 60.0 °C (14.0 °F to 140.0 °F)

Compass Mode

- Resolution: 1° display (digital)
- Measuring range: 0° to 359° (digital)
- Others: Digital bearing reading Lock
- Digital backward bearing
- Declination Setting: Range: +90° to -90°

Backlight

- Electro-Luminescent (EL) backlight

Battery

- Watch: 3V lithium battery (CR2032) 1 piece

Warning:

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.