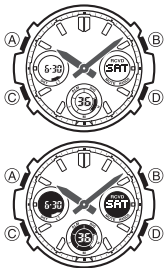


Congratulations upon your selection of this CASIO watch.

Note that CASIO COMPUTER CO., LTD. assumes no responsibility for any damage or loss suffered by you or any third party arising through the use of this product or its malfunction.

E-1

About This Manual



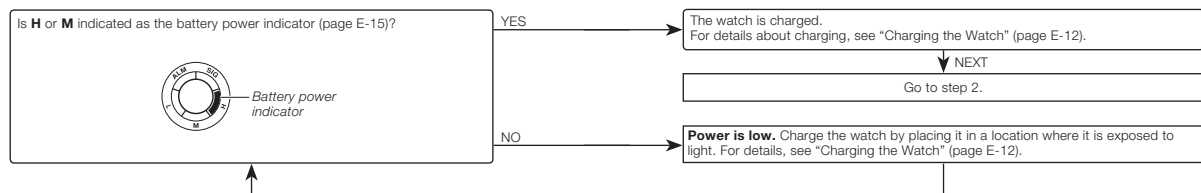
- Depending on the model of your watch, display text appears either as dark figures on a light background, or light figures on a dark background. All examples in this manual are shown using dark figures on a light background.
- Button operations are indicated using the letters shown in the illustration.
- Note that the product illustrations in this manual are intended for reference only, and so the actual product may appear somewhat different than depicted by an illustration.

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Things to check before using the watch

1. Check the battery power level.



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2. Check the Home City and the daylight saving time (DST) setting.

Use the procedure under "To configure Home City settings" (page E-42) to configure your Home City and daylight saving time settings.

Important!

Proper time calibration signal reception and World Time Mode data depend on correct Home City, time, and date settings in the Timekeeping Mode. Make sure you configure these settings correctly.

3. Set the current time.

- **To set the time using a time calibration signal**
See "To get ready for a receive operation" (page E-26).
- **To set the time manually**
See "Configuring Current Time and Date Settings Manually" (page E-48).

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Charging the Watch

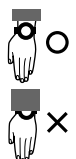
The face of the watch is a solar panel that generates power from light. The generated power charges a built-in rechargeable battery, which powers watch operations. The watch charges whenever it is exposed to light.

Charging Guide



Whenever you are not wearing the watch, leave it in a location where it is exposed to light.

- Best charging performance is achieved by exposing the watch to the strongest light available.



When wearing the watch, make sure that its face is not blocked from light by the sleeve of your clothing.

- The watch may enter a sleep state (page E-19) if its face is blocked by your sleeve even only partially.

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- Storing the watch for long periods in an area where there is no light or wearing it in such a way that it is blocked from exposure to light can cause power to run down. Expose the watch to bright light whenever possible.

Power Levels

You can get an idea of the watch's power level by observing the battery power indicator in the lower digital dial.



Battery power indicator

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- At Level 5, all functions are disabled and settings return to their initial factory defaults. Once the battery reaches Level 2 (M) after falling to Level 5, reconfigure the current time, date, and other settings.
- Display indicators reappear as soon as the battery is charged from Level 5 to Level 2 (M).
- Leaving the watch exposed to direct sunlight or some other very strong light source can cause the battery power indicator to show a reading temporarily that is higher than the actual battery level. The correct battery level should be indicated after a few minutes.
- The current time and all other settings return to their initial factory defaults whenever battery power drops to Level 5 and when you have the battery replaced.

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Charging Times

Exposure Level (Brightness)	Daily Operation *1	Level Change *2				
		Level 5	Level 4	Level 3	Level 2	Level 1
Outdoor sunlight (50,000 lux)	8 min.		3 hours		22 hours	6 hours
Window sunlight (10,000 lux)	30 min.		7 hours		83 hours	23 hours
Window sunlight on cloudy day (5,000 lux)	48 min.		10 hours		134 hours	36 hours
Indoor fluorescent lighting (500 lux)	8 hours		128 hours		---	---

- * 1 Approximate exposure each day to generate power for normal daily operation.
- * 2 Approximate exposure time (in hours) required to take power up one level.
- The above exposure times all are for reference only. Actual exposure times depend on lighting conditions.

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- E-75 To adjust home positions manually

E-78 Moving the Hands for Easy Viewing of the Digital Dials

- E-79 To move the hands to view a digital dial
- E-80 To return the hands to their normal positions

E-81 Other Settings

- E-81 To turn the button operation tone on and off
- E-83 To turn Power Saving on and off

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Warning!

Leaving the watch in bright light for charging can cause it to become quite hot. Take care when handling the watch to avoid burn injury. The watch can become particularly hot when exposed to the following conditions for long periods.

- On the dashboard of a car parked in direct sunlight
- Too close to an incandescent lamp
- Under direct sunlight

Important!

- Allowing the watch to become very hot can cause the digital displays to black out. The appearance of the LCD should become normal again when the watch returns to a lower temperature.
- Turn on the watch's Power Saving function (page E-19) and keep it in an area normally exposed to bright light when storing it for long periods. This helps to ensure that power does not run down.

Level	Battery Power Indicator	Function Status
1 (H)		All functions enabled.
2 (M)		All functions enabled.
3 (L and LOW)		Auto and manual receive, illumination, and beeper disabled. Except for Timekeeping Mode, all other modes disabled.
4 (CHG)		All functions and display indicators disabled except for timekeeping and display of CHG (charge) in the lower digital dial. Hour and minute hands stopped at 12 o'clock.
5		All functions disabled.

- The flashing **LOW** message at Level 3 (L) tells you that battery power is very low, and that exposure to bright light for charging is required as soon as possible.

Power Recovery Mode

- Performing multiple illumination, beeper, and/or high-speed hand movement operation during a short period may cause all of the battery power indicators (H, M, and L) to start flashing in the lower digital dial. This indicates that the watch is in the power recovery mode. Illumination, alarm, countdown timer alarm, and hourly time signal operations will be disabled until battery power recovers.
- Battery power will recover in about 15 minutes. At this time, the battery power indicators (H, M, L) will stop flashing. This indicates that the functions listed above are enabled again.
- If all of the battery power indicators (H, M, L) are flashing and the CHG (charge) message also is flashing, it means the battery level is very low. Expose the watch to bright light as soon as possible.
- Frequent flashing of all of the battery power indicators (H, M, L) probably means that remaining battery power is low. Leave the watch in bright light to allow it to charge.

- For details about the operating time and daily operating conditions, see the "Power Supply" (page E-94) section of the Specifications.

Power Saving

When turned on, Power Saving enters a sleep state automatically whenever the watch is left for a certain period in an area where it is dark. The table below shows how watch functions are affected by Power Saving.

- For information about enabling and disabling power saving, see "To turn Power Saving on and off" (page E-83).
- There actually are two sleep state levels: "display sleep" and "function sleep".

Elapsed Time in Dark	Digital Dials	Operation
60 to 70 minutes (display sleep)	Blank	Digital dials are off, but all functions are enabled.
6 or 7 days (function sleep)	Blank	Hour and minute hands stop at 12 o'clock. All functions are disabled, but timekeeping is maintained.

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- The watch will not enter a sleep state between 6:00 AM and 9:59 PM. If the watch is already in a sleep state when 6:00 AM arrives, however, it will remain in the sleep state.
- The watch will not enter a sleep state while it is in the Stopwatch Mode or Countdown Timer Mode.

To recover from the sleep state

Move the watch to a well-lit area or press any button.

Radio Controlled Atomic Timekeeping

This watch receives a time calibration signal and updates its time setting accordingly. However, when using the watch outside of areas covered by time calibration signals, you will have to adjust the settings manually as required. See "Configuring Current Time and Date Settings Manually" (page E-48) for more information.

This section explains how the watch updates its time settings when the city code selected as the Home City is in Japan, North America, Europe, or China, and is one that supports time calibration signal reception.

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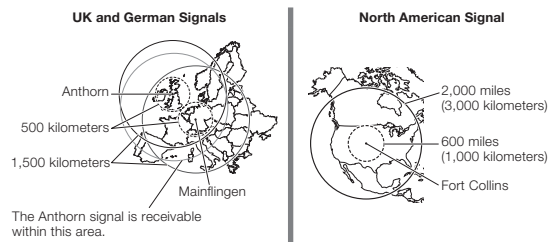
E-21

If your Home City Code setting is this:	The watch can receive the signal from the transmitter located here:
LIS, LON, MAD, PAR, ROM, BER, STO, ATH, MOW	Anthorn (England), Mainflingen (Germany)
HKG, BJS	Shangqiu City (China)
TPE, SEL, TYO	Fukushima (Japan), Fukuoka/Saga (Japan)
HNL, ANC, YVR, LAX, YEA, DEN, MEX, CHI, NYC, YHZ, YYT	Fort Collins, Colorado (United States)

Important!

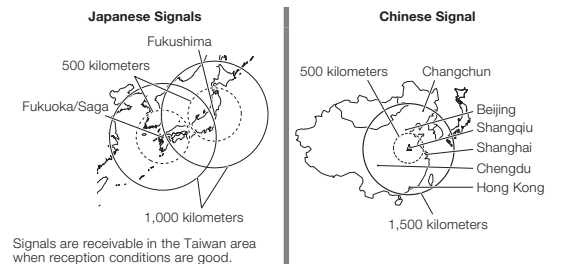
- The areas covered by **MOW**, **HNL** and **ANC** are quite far from the calibration signal transmitters, so certain conditions may cause reception problems.
- When **HKG** or **BJS** is selected as the Home City, only the time and date are adjusted according to the time calibration signal. You need to switch manually between standard time and daylight saving time (DST) if required. See "To configure Home City settings" (page E-42) for information about how to do this.

Approximate Reception Ranges



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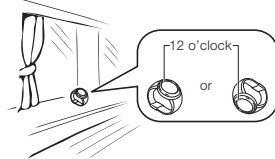
- Even when the watch is within range of a transmitter, signal reception may be impossible due to the effects of geographic contours, structures, weather, the time of year, the time of day, radio interference, etc. The signal becomes weaker at distances of approximately 500 kilometers, which means that the influence of the conditions listed above becomes even greater.
- Signal reception may not be possible at the distances noted below during certain times of the year or day. Radio interference may also cause problems with reception.
 - Mainflingen (Germany) or Anthorn (England) transmitters: 500 kilometers (310 miles)
 - Fort Collins (United States) transmitter: 600 miles (1,000 kilometers)
 - Fukushima or Fukuoka/Saga (Japan) transmitters: 500 kilometers (310 miles)
 - Shangqiu (China) transmitter: 500 kilometers (310 miles)
- As of December 2010, China does not use Daylight Saving Time (DST). If China does go to the Daylight Saving Time system in the future, some functions of this watch may no longer operate correctly.

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To get ready for a receive operation

1. Confirm that the watch is in the Timekeeping Mode. If it isn't, use **C** to enter the Timekeeping Mode (page E-38).
2. The antenna of this watch is located on its 12 o'clock side. Position the watch with 12 o'clock facing towards a window as shown in the nearby illustration. Make sure there are no metal objects nearby.



- Signal reception normally is better at night.
- The receive operation takes from three to eight minutes, but in some cases it can take as long as 16 minutes. Take care that you do not perform any button operation or move the watch during this time.

- Signal reception may be difficult or even impossible under the conditions described below.



- Inside or among buildings
- Inside a vehicle
- Near household appliances, office equipment, or a mobile phone
- Near a construction site, airport, or other sources of electrical noise
- Near high-tension power lines
- Among or behind mountains

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3. What you should do next depends on whether you are using Auto Receive or Manual Receive.
 - Auto Receive: Leave the watch over night in the location you selected in step 2. See "Auto Receive" below for details.
 - Manual Receive: Perform the operation under "To perform manual receive" on page E-29.

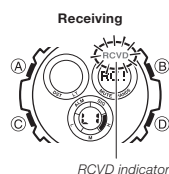
Auto Receive

- With Auto Receive, the watch performs the receive operation each day automatically up to six times (up to five times for the Chinese calibration signal) between the hours of midnight and 5 a.m. (according to the Timekeeping Mode time). When any receive operation is successful, none of the other receive operations for that day are performed.
- When a calibration time is reached, the watch will perform the receive operation only if it is in the Timekeeping Mode or World Time Mode. The receive operation is not performed if a calibration time is reached while you are configuring settings, while a countdown timer operation is in progress, or while the hands have been moved for easier viewing of the digital dials (page E-79).

- You can use the procedure under "To turn auto receive on and off" (page E-34) to enable or disable auto receive.

To perform manual receive

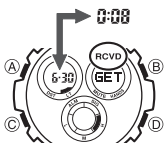
- In the Timekeeping Mode, hold down **D** until the watch beeps.
- A signal level indicator (**L1**, **L2**, or **L3**, see page E-32) appears in the lower digital dial after reception starts. Do not move the watch or perform any button operation until **GET** or **ERR** appears in the right digital dial.



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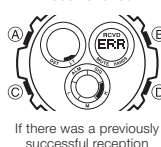
E-29

Receive successful



- If the receive operation is successful, the reception date and time appear in the left digital dial. The watch will return to the Timekeeping Mode if you press (D) or if you do not perform any button operation for about one or two minutes.

Receive failed



If there was a previously successful reception

- If the current reception fails but a previous reception (within the last 24 hours) was successful, the right digital dial will show RCVD and ERR. If only ERR is displayed (without RCVD), it means that all of the receive operations over the past 24 hours have failed. The watch will return to the Timekeeping Mode without changing the time setting if you press (D) or if you do not perform any button operation for about one or two minutes.

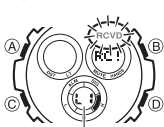
Note

To interrupt a receive operation and return to the Timekeeping Mode, press any button.

E-30

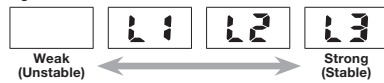
E-31

Signal Level Indicator



Signal level indicator

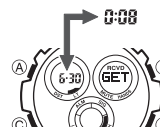
During manual receive, the lower digital dial shows a signal level indicator as shown below.



As you watch the indicator, keep the watch in a location that best maintains stable reception.

- Even under optimum reception conditions, it can take about 10 seconds for reception to stabilize.
- Note that weather, the time of day, surroundings, and other factors all can affect reception.

To check the latest signal reception results



In the Timekeeping Mode, press (D) (page E-41).

- When receive is successful, the left digital dial shows the time and date that receive was successful. - : - - indicates that none of the receive operations were successful.
- To return to the Timekeeping Mode, press (D).

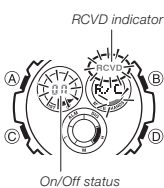
Note

RCVD will not be displayed in the right digital dial if you have adjusted the time or date setting manually since the last receive operation.

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To turn auto receive on and off



RCVD indicator

On/Off status

1. In the Timekeeping Mode, press (D) (page E-41).
2. Hold down (A) until the current auto receive setting (On or OFF) and RCVD indicator start to flash. This is the setting mode.
 - Whenever you enter the setting mode, the analog hands will automatically move to positions that allow easier viewing of the digital dials.
 - Note that the watch will not enter the setting mode if the currently selected Home City is one that does not support time calibration reception.
3. Press (D) to toggle between auto receive on (On) and off (OFF).

4. Press (A) to exit the setting mode.

- Exiting a setting mode will normally cause the hands to return to regular timekeeping automatically. However, if you manually move the hands (page E-79) and then enter a setting mode, they will not return to regular timekeeping automatically when you exit the setting mode. In this case, you will need to return the hands to their normal positions manually (page E-80).

Radio-controlled Atomic Timekeeping Precautions

- Strong electrostatic charge can result in the wrong time setting.
- Even if a receive operation is successful, certain conditions can cause the time setting to be off by up to one second.
- The watch is designed to update the date and day of the week automatically for the period January 1, 2000 to December 31, 2099. Updating of the date by signal reception will no longer be performed starting from January 1, 2100.
- If you are in an area where signal reception is not possible, the watch keeps time with the precision noted in "Specifications" (page E-92).

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D

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- The receive operation is disabled under any of the following conditions.
 - While power is at Level 3 (L) or lower (page E-15)
 - While the watch is in the power recovery mode (page E-17)
 - When the watch is in the function sleep state ("Power Saving", page E-19)
 - While a countdown timer operation is in progress (page E-60)
 - While the hands are in positions to allow easier viewing of the digital dials (page E-79)
- A receive operation is cancelled if an alarm sounds while it is being performed.
- The Home City setting reverts to the initial default of **TYO** (Tokyo) whenever the battery power level drops to Level 5 or when you have the rechargeable battery replaced. If this happens, change the Home City to the setting you want (page E-42).

Mode Reference Guide

Your watch has "five modes". The mode you should select depends on what you want to do.

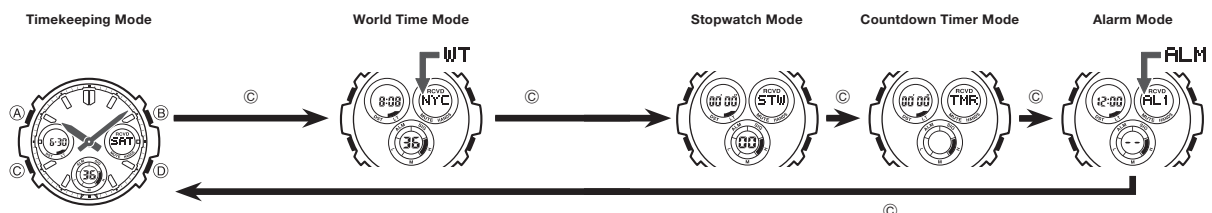
To do this:	Enter this mode:	See:
<ul style="list-style-type: none"> • View the current date in the Home City • Configure Home City and daylight saving time (DST) settings • Configure time and date settings manually • Perform a time calibration receive operation • Check whether the last receive operation was successful • Switch between 12-hour and 24-hour timekeeping • Display an alarm countdown 	Timekeeping Mode	E-41
View the current time in one of 48 cities (31 time zones) around the globe	World Time Mode	E-53
Use the stopwatch to measure elapsed time	Stopwatch Mode	E-57
Use the countdown timer	Countdown Timer Mode	E-60
Set an alarm time	Alarm Mode	E-63

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Selecting a Mode

- The illustration below shows which buttons you need to press to navigate between modes.
- To return to the Timekeeping Mode from any other mode, hold down (C) for at least four seconds.



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General Functions (All Modes)

The functions and operations described in this section can be used in all of the modes.

Auto Return Features

- The watch returns to the Timekeeping Mode automatically if you do not perform any button operation for two or three minutes in the Alarm Mode.
- If you leave the watch in a setting mode (with flashing digits) for two or three minutes without performing any operation, the watch will exit the setting mode automatically.

Initial Screens

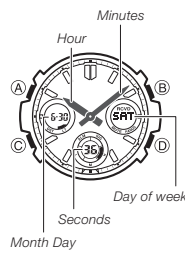
When you enter the World Time or Alarm Mode, the data you were viewing when you last exited the mode appears first.

Scrolling

The (B) and (D) buttons are used in the setting mode to scroll through data. In most cases, holding down these buttons during a scroll operation scrolls through the data at high speed.

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Timekeeping



Use the Timekeeping Mode to set and view the current time and date.

- When viewing a digital dial, you can move the analog hands for an unobstructed view.
- Press (A) to toggle the left digital dial between month/day and hour/minutes.

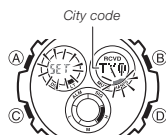


D

E-41

Configuring Home City Settings

There are two Home City settings: actually selecting the Home City, and selecting either standard time or daylight saving time (DST).



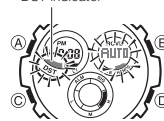
To configure Home City settings

1. In the Timekeeping Mode, hold down (A) for about two seconds until **ADJ** appears in the right digital dial. When you release (A), the city code and city name will scroll across the right digital dial. This is the setting mode.
 - The watch will exit the setting mode automatically if you do not perform any operation for about two or three minutes.

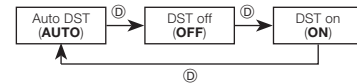
- For details about city codes, see the "City Code Table" at the back of this manual.
- Whenever you enter a setting mode, the analog hands will automatically move to positions that allow easier viewing of the digital dials.

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DST indicator



2. Use (E) (East) and (B) (West) to scroll through the city codes in the right digital dial until the one you want to use as your Home City is displayed.
3. Press (C) so the DST indicator is flashing in the left digital dial, which indicates the DST setting mode.
4. Use (D) to cycle through the DST settings in the right digital dial in the sequence shown below.



- The Auto DST (**AUTO**) setting will be available only when a city code that supports time calibration signal reception (page E-21) is selected as the Home City. While Auto DST is selected, the DST setting will be changed automatically in accordance with time calibration signal data.

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- Note that you cannot switch between standard time and daylight saving time (DST) while UTC is selected as your Home City.

5. After the setting is the way you want, press (A) to return to the Timekeeping Mode.
 - The **DST** indicator appears to indicate that Daylight Saving Time is turned on.
 - Exiting a setting mode will normally cause the hands to return to regular timekeeping automatically. However, if you manually move the hands (page E-79) and then enter a setting mode, they will not return to regular timekeeping automatically when you exit the setting mode. In this case, you will need to return the hands to their normal positions manually (page E-80).

Note

- After you specify a city code, the watch will use UTC* offsets in the World Time Mode to calculate the current time for other time zones based on the current time in your Home City.
 - * Coordinated Universal Time, the world-wide scientific standard of timekeeping. The reference point for UTC is Greenwich, England.

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- Selecting some city codes automatically makes it possible for the watch to receive the time calibration signal for the corresponding area. See page E-21 for details.

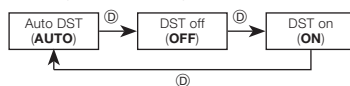
To change the Daylight Saving Time (summer time) setting

DST indicator



1. In the Timekeeping Mode, hold down (A) for about two seconds until **ADJ** appears in the right digital dial. When you release (A), the city code and city name will scroll across the right digital dial. This is the setting mode.
 - Whenever you enter a setting mode, the analog hands will automatically move to positions that allow easier viewing of the digital dials.
2. Press (C) to enter the DST setting mode.

3. Use (D) to cycle through the DST settings in the sequence shown below.



- The Auto DST (**AUTO**) setting will be available only when a city code that supports time calibration signal reception (page E-21) is selected as the Home City. While Auto DST is selected, the DST setting will be changed automatically in accordance with time calibration signal data.

4. After the setting is the way you want, press (A) to return to the Timekeeping Mode.
 - The **DST** indicator appears to indicate that Daylight Saving Time is turned on.

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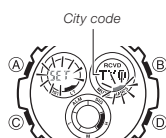
- Exiting a setting mode will normally cause the hands to return to regular timekeeping automatically. However, if you manually move the hands (page E-79) and then enter a setting mode, they will not return to regular timekeeping automatically when you exit the setting mode. In this case, you will need to return the hands to their normal positions manually (page E-80).

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Configuring Current Time and Date Settings Manually

You can configure current time and date settings manually when the watch is unable to receive a time calibration signal.

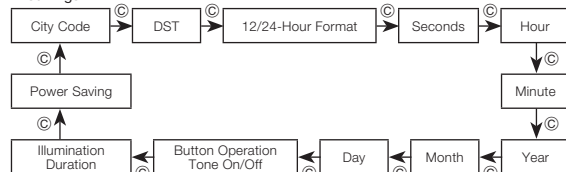
To change the current time and date settings manually



1. In the Timekeeping Mode, hold down (A) for about two seconds until **ADJ** appears in the right digital dial. When you release (A), the city code and city name will scroll across the right digital dial. This is the setting mode.
 - Whenever you enter a setting mode, the analog hands will automatically move to positions that allow easier viewing of the digital dials.

E-48

2. Press (C) to move the flashing in the sequence shown below to select the other settings.



- The following steps explain how to configure timekeeping settings only.

D

E-49

3. When the timekeeping setting you want to change is flashing, use (D) and/or (B) to change it as described below.

Screen	To do this:	Do this:
TYO: TOKYO	Change the city code	Use (D) (East) and (B) (West).
AUTO	Cycle between Auto DST (AUTO), Daylight Saving Time (ON) and Standard Time (OFF)	Press (D).
12H	Toggle between 12-hour (12H) and 24-hour (24H) timekeeping	
35	Reset the seconds to 00	
PM 10:08	Change the hour or minute	Use (D) (+) and (B) (-).
20 12 6-30	Change the year, month, or day	
MUTE	Toggle between button operation tone on (KEY) and off (MUTE)	Press (D).
LT1	Toggle the illumination duration between three seconds (LT3) and 1.5 seconds (LT1)	

E-50

E-51

- The watch's built-in full automatic calendar makes allowances for different month lengths and leap years. Once you set the date, there should be no reason to change it except after you have the watch's rechargeable battery replaced or after power drops to Level 5 (page E-15).
- The day of the week changes automatically when the date changes.
- Refer to the pages shown below for more information on Timekeeping Mode settings.
 - Button operation tone on/off: "To turn the button operation tone on and off" (page E-81)
 - Enabling and disabling power saving: "To turn Power Saving on and off" (page E-83)
 - The illumination duration: "To change the illumination duration" (page E-69)

E-52

E-53

To specify standard time or daylight saving time (DST) for a city

DST indicator



- In the World Time Mode, use (D) (East) to scroll through the city codes in the right digital dial until the one whose Standard Time/Daylight Saving Time setting you want to change is displayed.
- Hold down (A) for about two seconds until the watch beeps.
 - This toggles the city code you selected in step 1 between Daylight Saving Time (DST) indicator (displayed in the left digital dial) and standard time (DST indicator not displayed).

- Using the World Time Mode to change the DST setting of the city code that is selected as your Home City will also change the Timekeeping Mode time DST setting.
- Note that you cannot switch between standard time/daylight saving time (DST) while UTC is selected as the World Time City.

E-54

D

E-55

Note

If you are using the watch in Japan, be sure to select TYO (Tokyo) as your Home City. Selecting another city code will make it impossible to receive the time calibration signal, which will cause the watch's time setting to be off.

E-56

E-57

To perform an elapsed time operation



To pause at a split time



To measure two finishes



E-58

E-59

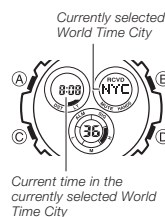
4. Press (A) to exit the setting mode.

- The watch automatically adjusts its analog setting to match the current time displayed in the left digital dial.
- Exiting a setting mode will normally cause the hands to return to regular timekeeping automatically. However, if you manually move the hands (page E-79) and then enter a setting mode, they will not return to regular timekeeping automatically when you exit the setting mode. In this case, you will need to return the hands to their normal positions manually (page E-80).

Note

- For information about selecting a Home City and configuring the DST setting, see "Configuring Home City Settings" (page E-42).
- While 12-hour format is selected for timekeeping, a PM indicator will appear for times from noon to 11:59 p.m. No indicator appears for times from midnight to 11:59 a.m. With 24-hour format, time is displayed from 0:00 to 23:59, without any PM indicator.

Using the World Time Mode



You can use the World Time Mode to view the current time in one of 31 time zones (48 cities) around the globe. The city that is currently selected in the World Time Mode is called the "World Time City".

To enter the World Time Mode

Use (C) to select the World Time Mode as shown on page E-38.

- The right digital dial will show WT for about one second. After that, the city code and city name will scroll once across the right digital dial, and then the three-letter corresponding city code will be displayed.

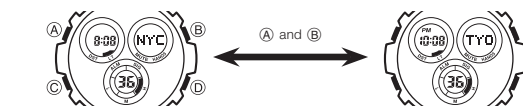
To view the time in another time zone

In the World Time Mode, use (D) (East) to scroll through city codes.

- The standard time/daylight saving time (DST) setting affects only the currently selected time zone. Other time zones are not affected.

To swap your Home Time and World Time Cities

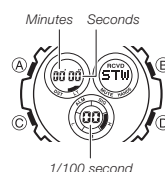
- In the World Time Mode, use (D) to select the city you want to use as your new Home City.
- To swap, hold down (A) and (B) at the same time until the watch beeps.



- This will make the World Time City you selected in step 1 (NYC (New York)) your new Home City.
- Your previous Home City (TYO (Tokyo)) will be your new World Time City.

Using the Stopwatch

The stopwatch measures elapsed time, split times, and two finishes.



To enter the Stopwatch Mode

Use (C) to select the Stopwatch Mode (STW) as shown on page E-39.

Note

- The Stopwatch Mode can indicate elapsed time up to 59 minutes, 59.99 seconds.
- Once started, stopwatch timing continues until you press (D) to stop it, even if you exit the Stopwatch Mode to another mode and even if timing reaches the stopwatch limit defined above.
- Exiting the Stopwatch Mode while a split time is frozen on the display clears the split time and returns to elapsed time measurement.

Using the Countdown Timer

The countdown timer can be set within a range of one minute to 100 minutes. An alarm sounds when the countdown reaches zero.

Countdown time
(Minutes, seconds)



To enter the Countdown Timer Mode

Use **(C)** to select the Countdown Timer Mode (TMR) as shown on page E-39.

To specify the countdown start time

1. Enter the Countdown Timer Mode.
 - If a countdown is in progress (indicated by the seconds counting down in the left digital dial), press **(D)** to stop it and then press **(A)** to reset to the current countdown start time.
 - If a countdown is paused, press **(A)** to reset to the current countdown start time.

E-60

2. Hold down **(A)** until the minute setting of the current countdown start time starts to flash. This is the setting mode.
 - Whenever you enter a setting mode, the analog hands will automatically move to positions that allow easier viewing of the digital dials.
3. Press **(C)** to move the flashing between the minute and second settings.
4. Use **(D)** (+) and **(B)** (-) to change the flashing item.
 - To set the starting value of the countdown time to 100 minutes, set **00'00"**.
5. Press **(A)** to exit the setting mode.
 - Exiting a setting mode will normally cause the hands to return to regular timekeeping automatically. However, if you manually move the hands (page E-79) and then enter a setting mode, they will not return to regular timekeeping automatically when you exit the setting mode. In this case, you will need to return the hands to their normal positions manually (page E-80).

E-61

To perform a countdown timer operation



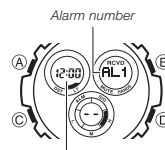
- Before starting a countdown timer operation, check to make sure that a countdown operation is not in progress (indicated by the seconds counting down). If it is, press **(D)** to stop it and then **(A)** to reset to the current countdown start time.
- An alarm sounds for 10 seconds when the end of the countdown is reached. This alarm will sound in all modes. The countdown time is reset to its starting value automatically when the alarm sounds.

To stop the alarm

Press any button.

E-62

Using the Alarm



Alarm number

You can set five independent daily alarms. When a daily alarm is turned on, an alarm tone will sound for about 10 seconds each day when the time in the Timekeeping Mode reaches the preset alarm time. This is true even if the watch is not in the Timekeeping Mode. You can also turn on an Hourly Time Signal, which will cause the watch to beep twice every hour on the hour.

To enter the Alarm Mode

Use **(C)** to select the Alarm Mode as shown on page E-39.

- The right digital dial will show **ALM** for about one second and then the indicator for the currently selected alarm (**AL1** through **AL5**, or **SIG**) will appear.
- When you enter the Alarm Mode, the data you were viewing when you last exited the mode appears first.

4. While a setting is flashing, use **(D)** (+) and **(B)** (-) to change it.
 - When setting the alarm time using the 12-hour format, take care to set the time correctly as a.m. (no indicator) or p.m. (**PM** indicator).
5. Press **(A)** to exit the setting mode.
 - Exiting a setting mode will normally cause the hands to return to regular timekeeping automatically. However, if you manually move the hands (page E-79) and then enter a setting mode, they will not return to regular timekeeping automatically when you exit the setting mode. In this case, you will need to return the hands to their normal positions manually (page E-80).

To test the alarm

In the Alarm Mode, hold down **(D)** to sound the alarm.

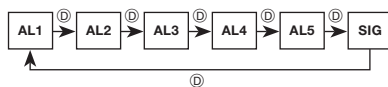
E-63

To set an alarm time

Alarm ON/OFF indicator



1. In the Alarm Mode, use **(D)** to scroll through the alarm indicators (**AL1** to **AL5**, **SIG**) in the right digital dial until the one whose time you want to set is displayed.



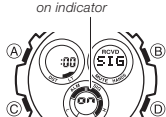
2. Hold down **(A)** for about two seconds until the alarm time starts to flash. This is the setting mode.
 - Whenever you enter the setting mode, the analog hands will automatically move to positions that allow easier viewing of the digital dials.
3. Press **(C)** to move the flashing between the hour and minute settings.

E-64

D

To turn an alarm and the Hourly Time Signal on and off

Hourly Time Signal on indicator



1. In the Alarm Mode, use **(D)** to scroll through the alarm indicators (**AL1** to **AL5**, **SIG**) in the right digital dial until the one you want is displayed.
2. When the alarm or the Hourly Time Signal you want is selected, press **(A)** to toggle it between on and off.
 - The alarm on indicator (when any alarm is on) and the Hourly Time Signal on indicator (when the Hourly Time Signal is on) are displayed in all modes.

To stop the alarm

Press any button.

E-66

Alarm Countdown

Alarm Countdown



Alarm ON/OFF indicator

When the current time reaches one hour before an alarm time setting, the alarm on/off indicator (in the lower digital dial) will flash and a countdown of the final 60 minutes will be displayed in the right digital dial while the watch is in the Timekeeping Mode.

Note

- Pressing **(A)** while an alarm countdown is in progress will display the day of the week in the right digital dial for about two seconds. After that, the dial will return to the countdown.
- When you enter the Timekeeping Mode from another mode while an alarm countdown is in progress, the day of the week will appear in the right digital dial for two seconds. After that, the countdown will appear.
- If an alarm countdown for another alarm starts while a previous alarm countdown is already in progress, it will be displayed after the ongoing countdown reaches zero and its alarm sounds.

E-67

Illumination



The face of the watch is illuminated for easy reading in the dark. The watch's auto light switch turns on illumination automatically when you angle the watch towards your face.

- The auto light switch must be turned on (page E-72) for it to operate.

To turn on illumination manually

Press **(B)** in any mode to illuminate the face of the watch.

- You can use the procedure below to select either 1.5 seconds or three seconds as the illumination duration. When you press **(B)**, the face will remain illuminated for about 1.5 seconds or three seconds, depending on the current illumination duration setting.

E-68

- The above operation turns on illumination regardless of the current auto light switch setting.
- Illumination is disabled during time calibration signal reception.

To change the illumination duration

1. In the Timekeeping Mode, hold down **(A)** for about two seconds until **ADJ** appears in the right digital dial. When you release **(A)**, the city code and city name will scroll across the right digital dial. This is the setting mode.
 - Whenever you enter a setting mode, the analog hands will automatically move to positions that allow easier viewing of the digital dials.
2. Use **(C)** to cycle through the settings in the right digital dial until the current illumination duration (**LT1** or **LT3**) is shown.
 - See the sequence in step 2 of the procedure under "To change the current time and date settings manually" (page E-48) for information about how to scroll through setting mode.

E-69

- Press **(D)** to toggle the illumination duration between three seconds (**LT3** displayed) and 1.5 seconds (**LT1** displayed).
- After all of the settings are the way you want, press **(A)** to exit the setting mode.
 - Exiting a setting mode will normally cause the hands to return to regular timekeeping automatically. However, if you manually move the hands (page E-79) and then enter a setting mode, they will not return to regular timekeeping automatically when you exit the setting mode. In this case, you will need to return the hands to their normal positions manually (page E-80).

About the Auto Light Switch

Turning on the auto light switch causes illumination to turn on, whenever you position your wrist as described below in any mode.

Moving the watch to a position that is parallel to the ground and then tilting it towards you more than 40 degrees causes illumination to turn on.



E-70

E-71

- The auto light switch is always disabled, regardless of its on/off setting, when any one of the following conditions exists.
 - While an alarm is sounding
 - While a receive operation is in progress

To turn the auto light switch on and off



Auto light switch on indicator

In the Timekeeping Mode, hold down **(B)** for about three seconds to toggle the auto light switch on (indicator displayed in the right digital dial) and off (indicator not displayed).

- The auto light switch on indicator appears in all modes while the auto light switch is turned on.
- The auto light switch turns off automatically whenever battery power drops to Level 4 (page E-15).

E-72

D

E-73



- Illumination may not turn on if the face of the watch is more than 15 degrees above or below parallel. Make sure that the back of your hand is parallel to the ground.
- Illumination turns off after the preset illumination duration (page E-69), even if you keep the watch pointed towards your face.
- Static electricity or magnetic force can interfere with proper operation of the auto light switch. If illumination does not turn on, try moving the watch back to the starting position (parallel with the ground) and then tilt it back towards your face again. If this does not work, drop your arm all the way down so it hangs at your side, and then bring it back up again.
- You may notice a very faint clicking sound coming from the watch when it is shaken back and forth. This sound is caused by mechanical operation of the auto light switch, and does not indicate a problem with the watch.

E-74

Warning!

- Always make sure you are in a safe place whenever you are reading the face of the watch using the auto light switch. Be especially careful when running or engaged in any other activity that can result in accident or injury. Also take care that sudden illumination by the auto light switch does not startle or distract others around you.
- When you are wearing the watch, make sure that its auto light switch is turned off before riding on a bicycle or operating a motorcycle or any other motor vehicle. Sudden and unintended operation of the auto light switch can create a distraction, which can result in a traffic accident and serious personal injury.

Note

- This watch features a "LED", so the auto light switch operates only when available light is below a certain level. It does not illuminate the face under bright light.

Illumination Precautions

- LED panel that provides illumination loses power after very long use.
- Illumination may be hard to see when viewed under direct sunlight.
- Illumination turns off automatically whenever an alarm sounds.
- Frequent use of illumination runs down the battery.

Auto light switch precautions

- Wearing the watch on the inside of your wrist, movement of your arm, or vibration of your arm can cause frequent activation of the auto light switch and illumination of the face. To avoid running down the battery, turn off the auto light switch whenever engaging in activities that might cause frequent illumination of the face.
- Note that wearing the watch under your sleeve while the auto light switch is turned on can cause frequent illumination of the face and can run down the battery.

Hand Home Position Adjustment

Strong magnetism or impact can cause the hands of the watch to be off, even if the watch is able to perform the signal receive operation.

- Home position adjustment is not necessary when the analog time and digital time are the same time in the Timekeeping Mode.

To adjust home positions manually

- In the Timekeeping Mode, hold down **(A)** and keep it depressed for about five seconds until **H.SET** appears in the right digital dial.
 - The hour and minute hands should all move to 12 o'clock, which is their home position.
 - Though **ADJ** will appear in the right digital dial about two seconds after you hold down **(A)**, do not release the button yet. Keep it depressed until **H.SET** appears. When **H.SET** appears in the right digital dial, release the **(A)** button. This will cause the hour and minute hands to move to 12 o'clock.

- The watch will return to regular timekeeping automatically if you do not perform any operation for about two or three minutes. Any changes you have made to settings up to that point will be saved. If the hour and minute hands are all at 12 o'clock, which is their home position, jump to step 3.

- Use **(D)** (+) and **(B)** (-) to adjust the hour and minute hand positions.
 - Holding down either button will cause the hand to move at high speed. Once started, high-speed hand movement will continue even if you release the button. To stop high-speed hand movement, press any button.
 - High-speed hand movement started with the **(D)** (+) button will stop automatically after 12 revolutions of the minute hand. If started with the **(B)** (-) button, it will stop after one revolution of the minute hand.

- Press **(A)** to exit home position correction and return to regular timekeeping.

E-76

E-77

Moving the Hands for Easy Viewing of the Digital Dials

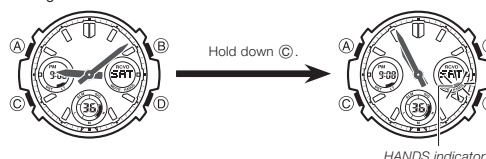
You can use the procedure below to move the analog hands in order to better view a digital dial.

Note

- The analog hands will not move while battery power is low.
- Time calibration signal reception is disabled while the hands are in positions to allow easier viewing of the digital dials (page E-79).

To move the hands to view a digital dial

Hold down **(C)** for about two seconds until **HAND** appears. Releasing **(C)** will cause the **HANDS** indicator to flash and the hands will move away from the digital dial.



E-78

D

E-79

To return the hands to their normal positions

Hold down **(C)** for about two seconds until **HAND** appears.

Note

- The hands will also return to their normal positions if you do not perform any operation for about one hour.
- The hands also will move away from the digital dial automatically whenever you enter a setting mode in the Timekeeping Mode, Timer Mode, or Alarm Mode.
- Time calibration signal reception is disabled while the hands are in positions to allow easier viewing of the digital dials (page E-79).
- Hold down **(C)** for about four seconds to return the hands to their normal positions and switch to the Timekeeping Mode.

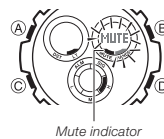
E-80

Other Settings

The button operation tone sounds any time you press one of the watch's buttons. You can turn the button operation tone on or off as desired.

- Even if you turn off the button operation tone, the alarm, Hourly Time Signal, and Countdown Timer Mode alarm all operate normally.

To turn the button operation tone on and off



Mute indicator

1. In the Timekeeping Mode, hold down **(A)** for about two seconds until **ADJ** appears in the right digital dial. When you release **(A)**, the city code and city name will scroll across the right digital dial. This is the setting mode.
 - Whenever you enter a setting mode, the analog hands will automatically move to positions that allow easier viewing of the digital dials.

2. Use **(C)** to cycle through settings in the right digital dial until the current button operation tone (**MUTE** or **KEY.:**) is displayed.
 - See the sequence in step 2 of the procedure under "To change the current time and date settings manually" (page E-48) for information about how to scroll between settings.
3. Press **(D)** to toggle the button operation tone on (**KEY.:**) and off (**MUTE**).
4. After all of the settings are the way you want, press **(A)** to exit the setting mode.
 - Exiting a setting mode will normally cause the hands to return to regular timekeeping automatically. However, if you manually move the hands (page E-79) and then enter a setting mode, they will not return to regular timekeeping automatically when you exit the setting mode. In this case, you will need to return the hands to their normal positions manually (page E-80).

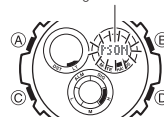
Note

- The mute indicator is displayed in all modes when the button operation tone is turned off.

E-82

To turn Power Saving on and off

Power saving on indicator



1. In the Timekeeping Mode, hold down **(A)** for about two seconds until **ADJ** appears in the right digital dial. When you release **(A)**, the city code and city name will scroll across the right digital dial. This is the setting mode.
 - Whenever you enter a setting mode, the analog hands will automatically move to positions that allow easier viewing of the digital dials.

2. Use **(C)** to cycle through the settings in the right digital dial until the current power saving setting (**PSON** or **PSOF**) is displayed.
 - See the sequence in step 2 of the procedure under "To change the current time and date settings manually" (page E-48) for information about how to scroll between settings.
3. Press **(D)** to toggle Power Saving on (**PSON**) and off (**PSOF**).

E-81

4. After all of settings are the way you want, press **(A)** to exit the setting mode.
 - Exiting a setting mode will normally cause the hands to return to regular timekeeping automatically. However, if you manually move the hands (page E-79) and then enter a setting mode, they will not return to regular timekeeping automatically when you exit the setting mode. In this case, you will need to return the hands to their normal positions manually (page E-80).

E-84

Troubleshooting

Time Setting

See "Radio Controlled Atomic Timekeeping" (page E-21) for information about adjusting the time setting according to a time calibration signal.

■ **The current time setting is off by hours.**

Your Home City setting may be wrong (page E-42). Check your Home City setting and correct it, if necessary.

■ **The current time setting is off by one hour.**

If you are using the watch in an area where time calibration signal reception is possible, see "To configure Home City settings" (page E-42). If you are using in the watch in an area where time calibration signal reception is not possible, you may need to change your Home City's standard time/daylight saving time (DST) setting manually. Use the procedure under "To change the current time and date settings manually" (page E-48) to change the standard time/daylight saving time (DST) setting.

E-83

■ **The hands are off.**

This could indicate that the watch has been exposed to magnetism or strong impact, which has caused problems with proper hand alignment. Adjust the watch's hand home position alignment (page E-75).

■ **The analog hands are not indicating the correct time.**

If the HANDS indicator is displayed on the right digital dial, it means that the analog hands have been moved for easier viewing of the digital dials. Hold down **(C)** for about four seconds to return to the Timekeeping Mode.

World Time Mode

■ **The time for my World Time City is off in the World Time Mode.**

This could be due to incorrect switching between standard time and daylight saving time. See "To specify standard time or daylight saving time (DST) for a city" (page E-54) for more information.

E-86

Charging

■ **The watch does not resume operation after I expose it to light.**

This can happen after the power level drops to Level 5 (page E-15). Continue exposing the watch to light until the battery power indicator shows **H** or **M**.

Time Calibration Signal

The information in this section applies only when **LIS, LON, MAD, PAR, ROM, BER, STO, ATH, MOW, HKG, BJS, HNL, ANC, YVR, LAX, YEA, DEN, MEX, CHI, NYC, YHZ, YYT, SEL,** or **TYO** is selected at the Home City. You need to adjust the current time manually when any other city is selected as the Home City.

E-85

■ **The watch can't receive a time calibration signal. The RCVD indicator does not appear.**

Possible Cause	Remedy	Page
<ul style="list-style-type: none"> • You are wearing or moving the watch, or performing a button operation during the signal receive operation. • The watch is in an area with poor reception conditions. 	Keep the watch in an area where reception conditions are good while the signal receive operation is being performed.	E-26
You are in an area where signal reception is not possible for some reason.	See "Approximate Reception Ranges".	E-23
The calibration signal is not being transmitted for some reason.	<ul style="list-style-type: none"> • Check the website of the organization that maintains the time calibration signal in your area for information about its down times. • Try again later. 	-

E-88

■ **The current time setting changes after I set it manually.**

You may have the watch configured for Auto Receive of the time calibration signal (page E-28), which will cause the time to be adjusted automatically according to your currently selected Home City. If this results in the wrong time setting, check your Home City setting and correct it, if necessary (page E-42).

■ **The current time setting is off by one hour.**

Possible Cause	Remedy	Page
Signal reception on a day for switching between standard time/daylight saving time (DST) may have failed for some reason.	Perform the operation under "To get ready for a receive operation". The time setting will be adjusted automatically as soon as signal reception is successful.	E-26
If you are unable to receive the time calibration signal, change the standard time/daylight saving time (DST) setting manually.		E-45

E-87

E-89

■ Auto Receive is not performed or you cannot perform Manual Receive.

Possible Cause	Remedy	Page
The watch is not in the Timekeeping Mode or World Time Mode, a countdown timer operation is in progress, or the hands have been moved to a position to allow easier viewing of the digital dials.	Auto receive is performed only while the watch is in the Timekeeping Mode or World Time Mode. Switch to either of these two modes. If a countdown timer operation is in progress, stop it. If the hands have been moved for easier viewing, return them to their normal positions.	E-38
Your Home City setting is wrong.	Check your Home City setting and correct it, if necessary.	E-42
There is not enough power for signal reception.	Expose the watch to light to charge it.	E-12

E-90

■ Signal reception is being performed successfully, but the time and/or day is wrong.

Possible Cause	Remedy	Page
Your Home City setting is wrong.	Check your Home City setting and correct it, if necessary.	E-42
The DST setting may be incorrect.	Change the DST setting to Auto DST.	E-42

E-91

Specifications

Accuracy at normal temperature: ±15 seconds a month (with no signal calibration)

Timekeeping: Hour, minutes, seconds, p.m. (PM), year, month, day, of the week, alarm countdown

Time format: 12-hour and 24-hour

Calendar system: Full Auto-calendar pre-programmed from the year 2000 to 2099

Other: Home City code (can be assigned one of 48 city codes); Standard Time/Daylight Saving Time (summer time)

Time Calibration Signal Reception: Auto receive 6 times a day (5 times a day for the Chinese calibration signal); Remaining auto receives cancelled as soon as one is successful; Manual receive

Receivable Time Calibration Signals: Mainflingen, Germany (Call Sign: DCF77, Frequency: 77.5 kHz); Anthorn, England (Call Sign: MSF, Frequency: 60.0 kHz); Fort Collins, Colorado, the United States (Call Sign: WWVB, Frequency: 60.0 kHz); Fukushima, Japan (Call Sign: JJY, Frequency: 40.0 kHz); Fukuoka/Saga, Japan (Call Sign: JJY, Frequency: 60.0 kHz); Shangqiu City, Henan Province, China (Call Sign: BPC, Frequency: 68.5 kHz)

World Time: 48 cities (31 time zones)

Other: Daylight Saving Time/Standard Time

Stopwatch:

Measuring unit: 1/100 second

Measuring capacity: 59' 59.99"

Measuring modes: Elapsed time, split time, two finishes

Countdown Timer:

Measuring unit: 1 second

Countdown range: 100 minutes

Countdown start time setting range: 1 to 100 minutes (1-second increments)

E-92

E-93

Alarms: 5 Daily alarms; Hourly Time Signal

Illumination: LED; Selectable illumination duration

Other: Battery power indicator; Power Saving; Button operation tone on/off

Power Supply: Solar panel and one rechargeable battery

Approximate battery operating time: Six months (from full charge to Level 4) under the following conditions:

- Watch not exposed to light
- Internal timekeeping
- Display on 18 hours per day, sleep state 6 hours per day
- 1 illumination operation (1.5 seconds) per day
- 10 seconds of alarm operation per day
- 4 minutes of signal reception per day
- 1 hand movement for easy viewing of the digital dials per day

Frequent use of illumination runs down the battery.

E-94

L-1

City Code Table

City Code Table

City Code	City	UTC Offset/ GMT Differential
PPG	Pago Pago	-11
HNL	Honolulu	-10
ANC	Anchorage	-9
YVR	Vancouver	-8
LAX	Los Angeles	-8
YEA	Edmonton	-7
DEN	Denver	-7
MEX	Mexico City	-6
CHI	Chicago	-6
NYC	New York	-5
SCL	Santiago	-4
YHZ	Halifax	-4
YYT	St. Johns	-3.5
RIO	Rio De Janeiro	-3
FEN	Fernando De Noronha	-2

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City Code	City	UTC Offset/ GMT Differential
RAI	Praia	-1
UTC		
LIS	Lisbon	0
LON	London	
MAD	Madrid	
PAR	Paris	
ROM	Rome	+1
BER	Berlin	
STO	Stockholm	
ATH	Athens	
CAI	Cairo	+2
JRS	Jerusalem	
MOW	Moscow	+3
JED	Jeddah	+3
THR	Tehran	+3.5

City Code	City	UTC Offset/ GMT Differential
DXB	Dubai	+4
KBL	Kabul	+4.5
KHI	Karachi	+5
DEL	Delhi	+5.5
KTM	Kathmandu	+5.75
DAC	Dhaka	+6
RGN	Yangon	+6.5
BKK	Bangkok	+7
SIN	Singapore	
HKG	Hong Kong	+8
BJS	Beijing	
TPE	Taipei	
SEL	Seoul	+9
TYO	Tokyo	+9
ADL	Adelaide	+9.5

City Code	City	UTC Offset/ GMT Differential
GUM	Guam	+10
SYD	Sydney	+11
NOU	Noumea	+11
WLG	Wellington	+12

- Based on data as of December 2010.
- The rules governing global times (UTC offset and GMT differential) and summer time are determined by each individual country.

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