Operation Guide 4321 4322

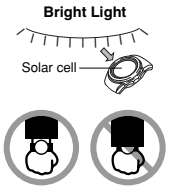
CASIO

Getting Acquainted

Congratulations upon your selection of this CASIO watch. To get the most out of your purchase, be sure to read this manual carefully.

Expose the watch to bright light to charge its battery before using it.
You can use this watch even as its battery is being charged by exposure to bright light.
- **Be sure to read "Power Supply" of this manual for important information you need to know when exposing the watch to bright light.**

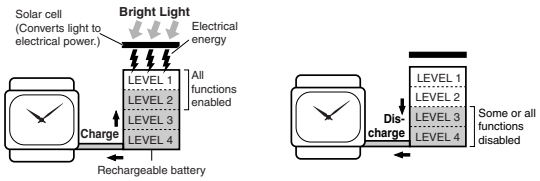
Keep the watch exposed to bright light



The electricity generated by the solar cell of the watch is stored by a built-in battery. Leaving or using the watch where it is not exposed to light causes the battery to run down. Make sure the watch is exposed to light as much as possible.
- When you are not wearing the watch on your wrist, position the face so it is pointed at a source of bright light.
- You should try to keep the watch outside of your sleeve as much as possible. Charging is reduced significantly if the face is only partially covered.

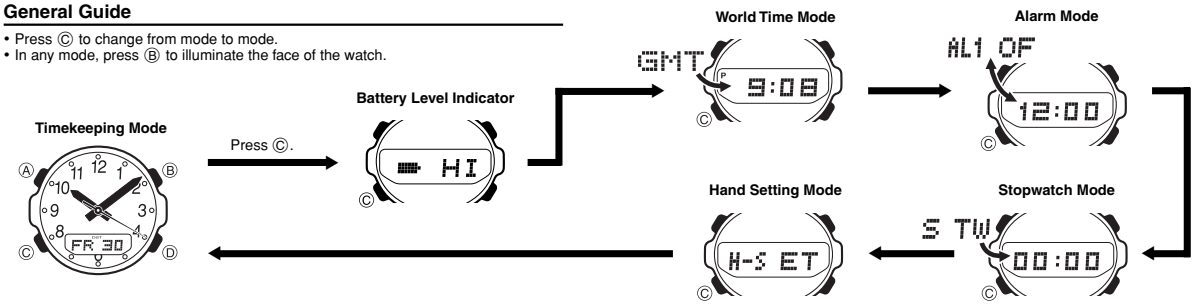
- The watch continues to operate, even when it is not exposed to light. Leaving the watch in the dark can cause the battery to run down, which will result in some watch functions to be disabled. If the battery goes dead, you will have to re-configure watch settings after recharging. To ensure normal watch operation, be sure to keep it exposed to light as much as possible.

Battery charges in the light. **Battery discharges in the dark.**

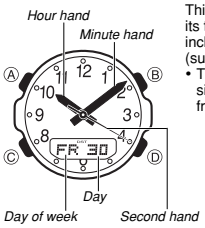


General Guide

- Press Ⓒ to change from mode to mode.
- In any mode, press Ⓑ to illuminate the face of the watch.



Radio-controlled Timekeeping



This watch receives a time calibration signal and updates its time setting accordingly. The time calibration signal includes both Standard Time and Daylight Saving Time (summer time) data.
- This watch is designed to pick up the time calibration signal transmitted from Anthorn, England and the signal from Mainflingen, Germany.

Current Time Setting

This watch automatically adjusts its time setting in accordance with a time calibration signal. You can also perform a manual procedure to set the time and date, when necessary.
- The first thing you should do after purchasing this watch is to set your Home City, which is the city where you will normally use the watch. For more information, see "To set your Home City" below.
- When using the watch in an area that is outside of the range of the transmitters in Anthorn and Mainflingen, you need to manually adjust the time as required. See "Timekeeping" for information about manual settings.
- The analog time of this watch is synchronized with the digital time. Because of this, the analog time setting is automatically adjusted whenever you change the digital setting. See "Analog Timekeeping" for more information.

To set your Home City

1. In the Timekeeping Mode, hold down Ⓐ until the city code starts to flash, which indicates the setting screen.
   - The second hand will move at high speed to the 12 o'clock position, where it will stop.
2. Use Ⓓ (east) and Ⓑ (west) to select the city code you want to use as your Home City.
   - The following are the city codes for major cities in the Western Europe time zones.
     LON: London
     PAR and BER: Paris, Berlin, Milan, Rome, Amsterdam, Hamburg, Frankfurt, Vienna
     ATH: Athens
3. Press Ⓐ to exit the setting screen.
   - The second hand will advance at high speed to the correct position in accordance with seconds count of the digital time, and resume normal movement from there.

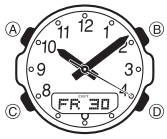
- Normally, your watch should show the correct time as soon as you select your Home City code. If it does not, it should adjust automatically after the next auto receive (in the middle of the night). You can also perform manual receive or you can set the time manually.
- If you are in an area that does not use Daylight Saving Time (summer time), turn off the DST setting.
- The watch will receive the time calibration signal automatically from the applicable transmitter (in the middle of the night) and update its settings accordingly. For information about the relationship between city codes and transmitters, see "Transmitters".

- The actual level at which some functions are disabled depends on the watch model.
- **Be sure to read "Power Supply" for important information you need to know when exposing the watch to bright light.**

If the display of the watch is blank...

If the display of the watch is blank, it means that the watch's Power Saving function has turned off the display to conserve power.
- **See "Power Saving Function" for more information.**

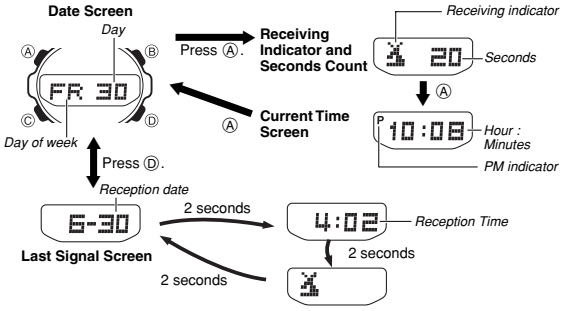
About This Manual



- Button operations are indicated using the letters shown in the illustration.
- Each section of this manual provides you with the information you need to perform operations in each mode. Further details and technical information can be found in the "Reference" section.

To display the digital time and last signal screen

- In the Timekeeping Mode, press Ⓓ to display the last signal screen. The last signal screen shows the date and time of the last successful time calibration signal reception.
- In the Timekeeping Mode, press Ⓐ to cycle through the digital time screens as shown below.



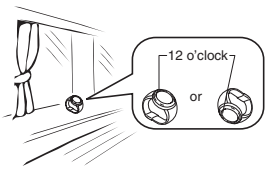
Time Calibration Signal Reception

There are two different methods you can use to receive the time calibration signal: auto receive and manual receive.

- **Auto Receive**
  With auto receive, the watch receives the time calibration signal automatically up to six times a day. When any auto receive is successful, the remaining auto receive operations are not performed. For more information, see “About Auto Receive”.
- **Manual Receive**
  Manual receive lets you start time calibration signal reception with the press of a button. For more information, see “To perform manual receive”.

Important!

- When getting ready to receive the time calibration signal, position the watch as shown in the nearby illustration, with its 12 o’clock side facing towards a window. Make sure there are no metal objects nearby.

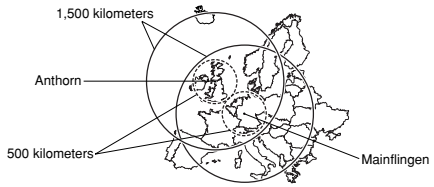


- Make sure the watch is facing the right way.
- Proper signal reception can be difficult or even impossible under the conditions listed below.

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

- Signal reception is normally better at night than during the day.
- Time calibration signal reception takes from two to seven minutes, but in some cases it can take as long as 14 minutes. Take care that you do not perform any button operations or move the watch during this time.

Reception Ranges



- At distances further than about 500 kilometers from a transmitter, signal reception may not be possible during certain times of year or times of day. Radio interference may also cause problems with reception.
- Even when the watch is within the reception range of the transmitter, signal reception will be impossible if the signal is blocked by mountains or other geological formations between the watch and signal source.
- Signal reception is affected by weather, atmospheric conditions, and seasonal changes.
- See the information under “Signal Reception Troubleshooting” if you experience problems with time calibration signal reception.

About Auto Receive

With auto receive, the watch receives the time calibration signal automatically up to six times a day. When any auto receive is successful, the remaining auto receive operations are not performed. The start times of the auto receive operations depend on the current Home City and DST settings.

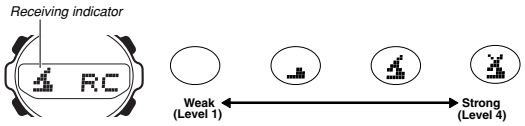
Home City		Auto Receive Start Times					
		1	2	3	4	5	6
LON	Standard Time	1:00 am	2:00 am	3:00 am	4:00 am	5:00 am	Midnight
	Daylight Saving Time	2:00 am	3:00 am	4:00 am	5:00 am	Midnight	1:00 am next day
PARBER	Standard Time	2:00 am	3:00 am	4:00 am	5:00 am	Midnight	1:00 am next day
	Daylight Saving Time	3:00 am	4:00 am	5:00 am	Midnight	1:00 am next day	2:00 am next day
ATH	Standard Time	3:00 am	4:00 am	5:00 am	Midnight	1:00 am next day	2:00 am next day
	Daylight Saving Time	4:00 am	5:00 am	Midnight	1:00 am next day	2:00 am next day	3:00 am next day

Note

- Auto receive is performed only if the watch is in the Timekeeping Mode or World Time Mode when one of the calibration times is reached. It is not performed if a calibration time is reached while an alarm is sounding, or while you are configuring settings (while settings are flashing on the display).
- When a reception starts, the second hand will move at high speed to the 12 o’clock position where it will stop until the reception is complete.
- Auto receive of the calibration signal is designed to be performed early in the morning, while you sleep (provided that the Timekeeping Mode time is set correctly). Before going to bed for the night, remove the watch from your wrist, and put it in a location where it can easily receive the signal.
- When auto receive is turned on, the watch receives the calibration signal for two to seven minutes everyday when the time in the Timekeeping Mode reaches each of the calibration times. Do not perform any button operation within seven minutes before or after any one of the calibration times. Doing so can interfere with correct calibration.
- Remember that reception of the calibration signal depends on the time kept in the Timekeeping Mode. The receive operation will be performed whenever the display shows any one of the calibration times, regardless of whether or not the Timekeeping Mode time actually is the correct time.

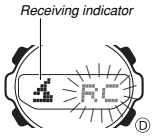
About the Receiving Indicator

The receiving indicator shows the strength of the calibration signal being received. For best reception, be sure to keep the watch in a location where signal strength is strongest.



- Even in an area where signal strength is strong, it takes about 10 seconds for signal reception to stabilize enough for the receiving indicator to indicate signal strength.
- Use the receiving indicator as a guide for checking signal strength and for finding the best location for the watch during signal reception.
- The Level 4 receiving indicator indicates that at least one of the auto calibration signal receive operation was successful. Note, however, that the Level 4 receiving indicator is cleared from the display when the first auto receive operation of the day is performed.
- The Level 4 receiving indicator appears on the Timekeeping Mode’s Receiving Indicator and Seconds Count screen only. The Level 4 receiving indicator is not displayed if signal reception was unsuccessful or after manual adjustment of the current time setting.

To perform manual receive



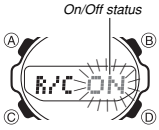
1. Place the watch on a stable surface so its 12 o’clock side is facing towards a window.
2. In the Timekeeping Mode, hold down Ⓓ for about two seconds until the watch beeps.
3. Release Ⓓ and **RC** flashes to indicate that signal reception has started.
   - When a reception starts, the second hand will move at high speed to the 12 o’clock position where it will stop until the reception is complete.

- Time calibration signal reception normally takes from two to seven minutes, but in some cases it can take as long as 14 minutes. Take care that you do not perform any button operations or move the watch during this time.
- After signal reception is complete, the display of the watch changes to the last signal screen.

Note

- To interrupt a reception and return to the Timekeeping Mode, press Ⓓ.
- If the reception is unsuccessful, the message ERR appears on the display for about one or two minutes. After that, the watch returns to the Timekeeping Mode.
- You can also change from the last signal or ERR screen to the normal timekeeping screen by pressing Ⓓ.

To turn auto receive on and off



1. In the Timekeeping Mode, press Ⓓ to display the Last Signal screen.
2. Hold down Ⓐ until the current auto receive setting (ON or OF) starts to flash. This is the setting screen.
   - The second hand will move at high speed to the 12 o’clock position, where it will stop.
   - Note that the setting screen will not appear if the currently selected Home City is one that does not support time calibration reception.
3. Press Ⓓ to toggle auto receive on (ON) and off (OF).
4. Press Ⓐ to exit the setting screen.

- The second hand will advance at high speed to the correct position in accordance with the digital time seconds count, and resume normal movement from there.
- For information about city codes that support signal reception, see “To set your Home City”.

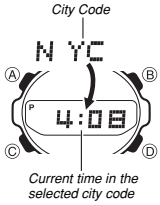
Signal Reception Troubleshooting

Check the following points whenever you experience problems with signal reception.

Problem	Probable Cause	What you should do
Cannot perform manual receive.	• The watch is not in the Timekeeping Mode. • Your current Home City is not one of the following city codes: **ATH**, **BER**, **PAR**, or **LON**.	• Enter the Timekeeping Mode and try again. • Select **ATH**, **BER**, **PAR**, or **LON** as your Home City.
Auto receive is turned on, but the Level 4 receiving indicator does not appear on the Timekeeping Mode display.	• You changed the time setting manually. • The watch was not in the Timekeeping or World Time Mode, or you were performing some button operation during auto receive. • Even if reception is successful, the Level 4 receiving indicator disappears each day when the first auto receive operation of the day is performed. • Time data (hour, minutes, seconds) only was received during the last reception. The Level 4 receiving indicator appears only when time data and date data (year, month, day) are both received.	• Perform manual receive or wait until the next auto receive is performed. • Check to make sure the watch is in a location where it can receive the signal.
Time setting is incorrect following signal reception.	• If the time is one hour off, the DST setting may be incorrect. • The Home City code setting is not correct for the area where you are using the watch.	• Change the DST setting to Auto DST. • Select the correct Home City code.

• For further information, see “Important!” under “Time Calibration Signal Reception” and “Radio-controlled Timekeeping Precautions”.

World Time



The World Time Mode digitally displays the current time in 30 cities (29 time zones) around the world.

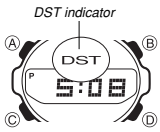
- Pressing Ⓐ in the World Time Mode causes the applicable city code to appear on the digital display for about two seconds.
- If the current time shown for a city is wrong, check your Home City time settings and make the necessary changes.
- The watch will perform a signal reception even if it is in the World Time Mode when a calibration time is reached. If this happens, the World Time Mode time settings will be adjusted in accordance with the Timekeeping Mode’s Home City time.
- All of the operations in this section are performed in the World Time Mode, which you enter by pressing Ⓒ.

To view the time in another city

While in the World Time Mode, press Ⓓ to scroll through the city codes (time zones).

• For full information on city codes, see “City Code Table”.

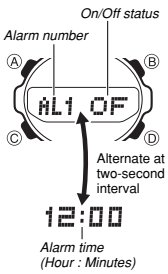
To toggle a city code time between Standard Time and Daylight Saving Time



1. In the World Time Mode, use Ⓓ to display the city code (time zone) whose Standard Time/Daylight Saving Time setting you want to change.
   - Pressing Ⓐ in the World Time Mode causes the applicable city code to appear on the digital display for about two seconds.
2. Hold down Ⓐ to toggle Daylight Saving Time (**DST** indicator displayed) and Standard Time (**DST** indicator not displayed).

- Note that you cannot use the World Time Mode to change the DST setting of the Home City code you currently have selected in the Timekeeping Mode. See “To change the Daylight Saving Time (summer time) setting” for information about turning the Home City code DST setting on and off.
- The **DST** indicator will appear on the display whenever you display a city code for which Daylight Saving Time is turned on.
- Note that you cannot switch between Standard Time and Daylight Saving Time while GMT is selected as the city code.
- Note that the DST/Standard Time setting affects only the currently displayed city code. Other city codes are not affected.

Alarms

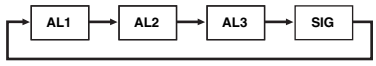


You can set three independent Daily Alarms. When an alarm is turned on, the alarm tone sounds when the alarm time is reached. You can also turn on an Hourly Time Signal that causes the watch to beep twice every hour on the hour.

- The alarm and Hourly Time Signal operate in accordance with the current digital time.
- The alarm number (**AL1** though **AL3**) indicates an alarm screen. **SIG** appears in place of the alarm number when the Hourly Time Signal screen is shown.
- All of the operations in this section are performed in the Alarm Mode, which you enter by pressing Ⓒ.

To set an alarm time

1. In the Alarm Mode, press Ⓓ to select the alarm whose time you want to set.



2. Hold down Ⓐ until the hour setting of the alarm time starts to flash, which indicates the setting screen.
   - This automatically turns on the alarm.
3. Press Ⓒ to move the flashing between the hour and minute settings.
4. While a setting is flashing, use Ⓓ (+) and Ⓑ (–) 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. (**P** indicator).
   - If you have 24-hour timekeeping selected in the Timekeeping Mode, the alarm time is also displayed in 24-hour format.
5. Press Ⓐ to exit the setting screen.

Alarm Operation

The alarm sounds in all modes at the preset time for about 10 seconds, or until you stop it by pressing any button.

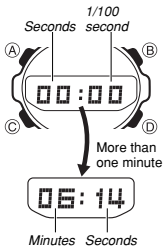
To test the alarm

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

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

1. In the Alarm Mode, press Ⓓ to select an alarm or the Hourly Time Signal.
2. When the alarm or the Hourly Time Signal you want to set is selected, press Ⓐ to turn it on (ON) and off (OF).

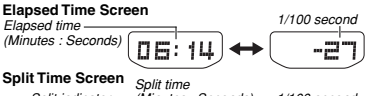
Stopwatch



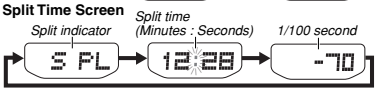
The stopwatch lets you measure elapsed time, split times, and two finishes.

- The display range of the stopwatch is 99 minutes, 59.99 seconds.
- The 1/100-second value appears while the elapsed time operation is stopped or while a split time is frozen on the display.

Elapsed Time Screen



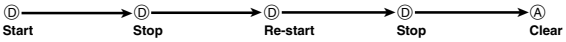
Split Time Screen



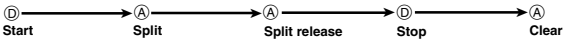
- The stopwatch continues to run, restarting from zero after it reaches its limit, until you stop it.
- Exiting the Stopwatch Mode while a split time is frozen on the display clears the split time and returns to elapsed time measurement.
- The stopwatch measurement operation continues even if you exit the Stopwatch Mode.
- All of the operations in this section are performed in the Stopwatch Mode, which you enter by pressing Ⓒ.

To measure times with the stopwatch

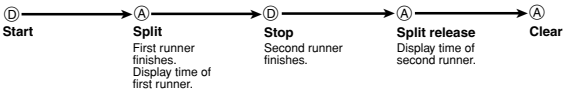
Elapsed Time



Split Time



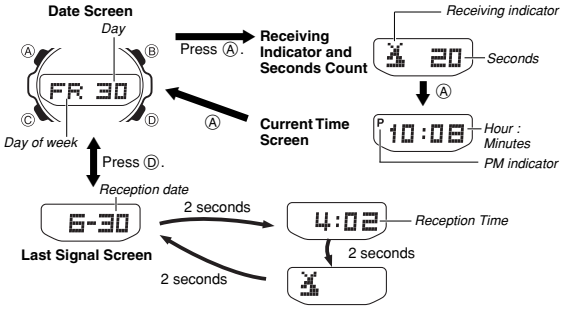
Two Finishes



Timekeeping

Use the Timekeeping Mode to set and view the current time and date. This section also explains how to manually set the current date and time.

- In the Timekeeping Mode, press Ⓓ to display the last signal screen. The last signal screen shows the date and time of the last successful time calibration signal reception.
- In the Timekeeping Mode, press Ⓐ to cycle through the digital time screens as shown below.
- All of the operations in this section are performed in the Timekeeping Mode, which you can enter by pressing Ⓒ.

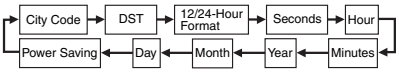


Setting the Digital Time and Date Manually

Make sure you select your Home City code before you change the current time and date settings. World Time Mode times are all displayed in accordance with the Timekeeping Mode settings. Because of this, World Time Mode times will not be correct if you do not select the proper Home City code before setting the time and date in the Timekeeping Mode.

To set the current digital time and date manually

1. In the Timekeeping Mode, hold down Ⓐ until the city code starts to flash, which indicates the setting screen.
   - The second hand will move at high speed to the 12 o'clock position, where it will stop.
2. Use Ⓒ to move the flashing in the sequence shown below to select other settings.



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

Screen:	To do this:	Do this:
L ON	Change the city code	Use Ⓓ (east) and Ⓑ (west).
DST ON	Toggle between Daylight Saving Time (ON) , Standard Time (OF), or Auto DST (A)	Press Ⓓ.
12 H	Toggle between 12-hour (12 H) and 24-hour (24 H) timekeeping	Press Ⓓ.
20	Reset the seconds to 00	Press Ⓓ.
10:08	Change the hour or minutes	Use Ⓓ (+) and Ⓑ (–).
20 06	Change the year	Use Ⓓ (+) and Ⓑ (–).
6-30	Change the month or day	Use Ⓓ (+) and Ⓑ (–).

- See "City Code Table" for a complete list of available city codes.
- For details about configuring settings for the Power Saving feature, see "Power Saving Function".

4. Press Ⓐ to exit the setting screen.

- The second hand will advance at high speed to the correct position in accordance with the digital time seconds count, and resume normal movement from there.
- When you exit the setting screen, the analog hands are adjusted automatically to match the digital time. See "Analog Timekeeping" for more information.

Note

- Auto DST (A) can be selected only while BER, PAR, LON, or ATH is selected as the Home City code. For more information, see "Daylight Saving Time (DST)" below.

Daylight Saving Time (DST)

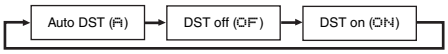
Daylight Saving Time (summer time) advances the time setting by one hour from Standard Time. Remember that not all countries or even local areas use Daylight Saving Time.

The time calibration signals transmitted from Anthorn and Mainflingen includes both Standard Time and DST data. When the Auto DST setting is turned on, the watch switches between Standard Time and DST (summer time) automatically in accordance with the received time signal.

- Auto DST (A) can be selected only while BER, PAR, LON, or ATH is selected as the Home City code.
- The default DST setting is Auto DST (A) whenever you select BER, PAR, LON, or ATH as your Home City code.
- If you experience problems receiving the time calibration signal in your area, it is probably best to switch between Standard Time and Daylight Saving Time (summer time) manually.

To change the Daylight Saving Time (summer time) setting

1. In the Timekeeping Mode, hold down Ⓐ until the city code starts to flash, which indicates the setting screen.
2. Press Ⓒ to display the DST setting screen.
3. Use Ⓓ to cycle through the DST settings in the sequence shown below.



4. When the setting you want is selected, press Ⓐ to exit the setting screen.

- The **DST** indicator appears on the display to indicate that Daylight Saving Time is turned on.

Analog Timekeeping

The analog time of this watch is synchronized with the digital time. The analog time setting is adjusted automatically whenever you change the digital time.

Note

- The hands for the analog timepiece move to adjust to a new setting whenever any of the following occurs.
  When you change the digital time setting manually
  When the digital time setting is changed by time calibration signal reception
  When you change the Home City code and/or DST setting
- If the analog time does not match the digital time for any reason, use the procedure described under "To adjust the analog time" to match the analog setting to the digital setting.
- Whenever you need to adjust both the digital and the analog time settings manually, make sure you adjust the digital setting first.
- Depending on how much the hands have to move in order to adjust to the digital time, it may take some time before they stop moving.

To adjust the analog time

1. In the Timekeeping Mode, press Ⓒ five times to enter the Hand Setting Mode.
2. Hold down Ⓐ until – 0 0 – starts to flash, which indicates the setting screen.
   - The second hand will move at high speed to the 12 o'clock position, where it will stop.
3. If the second hand is not pointing precisely at 12 o'clock at this time, use Ⓓ to adjust its position.
   - Each press of Ⓓ causes the second hand to advance by one second.
4. Press Ⓒ. This will cause the time on the digital display to flash, which indicates that adjustment of hour and minute hands is selected.
5. Use Ⓓ and Ⓑ to adjust the analog setting as described below.

When you want to do this:	Perform this button operation:
Move the hand setting forward 10 seconds	• Press Ⓓ.
Move the hand setting back 10 seconds	• Press Ⓑ.
Move the hand setting a short way forward at high speed	• Hold down Ⓓ. • Release Ⓓ when the hands reach the setting you want.
Move the hand setting a short way back at high speed	• Hold down Ⓑ. • Release Ⓑ when the hands reach the setting you want.
Move the hand setting a long way forward at high speed	• While holding down Ⓓ to move the hands at high-speed, press Ⓑ to lock the high-speed hand movement. • To stop the hand movement, press any button. • Hand movement stops automatically if the hour hand makes one full (12-hour) revolution.
Move the hand setting a long way back at high speed	• While holding down Ⓑ to move the hands at high-speed, press Ⓓ to lock the high-speed hand movement. • To stop the hand movement, press any button. • Hand movement stops automatically if the hour hand makes one full (12-hour) revolution.

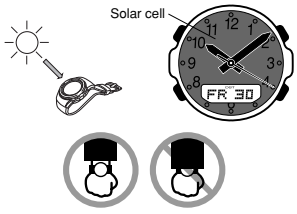
6. Press Ⓐ to exit the setting screen.

- The minute hand will be adjusted slightly to match the seconds when you exit the setting screen.
- To return to the Timekeeping Mode, press Ⓒ.

Power Supply

This watch is equipped with a solar cell and a special rechargeable battery (secondary battery) that is charged by the electrical power produced by the solar cell. The illustration shown below shows how you should position the watch for charging.

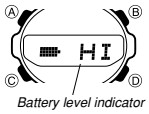
Example: Orient the watch so its face is pointing at a light source.



- The illustration shows how to position a watch with a resin band.
- Note that charging efficiency drops when any part of the solar cell is blocked by clothing, etc.
- You should try to keep the watch outside of your sleeve as much as possible. Charging is reduced significantly if the face is only partially covered.

Important!
- 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 rechargeable battery power to run down. Make sure that the watch is exposed to bright light whenever possible.
- This watch uses a special rechargeable battery to store power produced by the solar cell, so regular battery replacement is not required. However, after very long use, the rechargeable battery may lose its ability to achieve a full charge. If you experience problems getting the special rechargeable battery to charge fully, contact your dealer or CASIO distributor about having it replaced.
- Never try to remove or replace the watch's special battery yourself. Use of the wrong type of battery can damage the watch.
- 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.
- Turn on the watch's Power Saving function and keep it in an area normally exposed to bright light when storing it for long periods. This helps to keep the rechargeable battery from going dead.

To check the current battery level
In the Timekeeping Mode, press Ⓒ to display the battery level indicator.



Battery level indicator

- The battery level indicator shows you the current power level of the rechargeable battery.

Level	Battery Level Indicator	Function Status
1	HI	All functions enabled.
2	MID	All functions enabled.
3	LO (Charge Soon Alert)	Alarm, hourly time signal, illumination and time calibration signal reception disabled.
4	(Charge Soon Alert)	All functions disabled.
5		All functions, including timekeeping, disabled and initialized.

- The LO indicator at Level 3 and the flashing charge indicator (**C**) at Level 4 tell you that battery power is very low, and that exposure to bright light for charging is required as soon as possible.
- At Level 5, all functions are disabled and settings return to their initial factory defaults. Functions are enabled once again after the rechargeable battery is charged, but you need to set the time and date, after the battery reaches Level 4 (indicated by the flashing charge indicator (**C**)) from Level 5. You will not be able to configure any of the other settings until the battery reaches Level 2 (no charge indicator) after dropping to Level 5.
- Leaving the watch in direct sunlight or some other very strong light source can cause the battery level indicator to show a reading that is momentarily higher than the actual battery level. The correct battery level indicator should appear after a few minutes.
- If you use the illumination or alarms a number of times during a short period, the hands of the watch will stop. Battery Level Indicator will show F at this time. Also, the following operations will become disabled until battery power recovers.
  Illumination
  Beeper tone
  Time calibration signal reception
  After some time, battery power will recover and the above functions will be enabled again.

Charging Precautions
Certain charging conditions can cause the watch to become very hot. Avoid leaving the watch in the areas described below whenever charging its rechargeable battery. Also note that allowing the watch to become very hot can cause its liquid crystal display to black out. The appearance of the LCD should become normal again when the watch returns to a lower temperature.

Warning!
Leaving the watch in bright light to charge its rechargeable battery 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

Charging Guide
After a full charge, timekeeping remains enabled for up to about 6 months.
- The following table shows the amount of time the watch needs to be exposed to light each day in order to generate enough power for normal daily operations.

Exposure Level (Brightness)	Approximate Exposure Time
Outdoor Sunlight (50,000 lux)	8 minutes
Sunlight Through a Window (10,000 lux)	27 minutes
Daylight Through a Window on a Cloudy Day (5,000 lux)	43 minutes
Indoor Fluorescent Lighting (500 lux)	8 hours

- Since these are the specs, we can include all the technical details.
  - 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
  - 6 minutes of signal reception per day
- Stable operation is promoted by frequent exposure to light.

Recovery Times
The table below shows the amount exposure that is required to take the battery from one level to the next.

Exposure Level (Brightness)	Approximate Exposure Time				
	Level 5 →	Level 4 →	Level 3 →	Level 2 →	Level 1
Outdoor Sunlight (50,000 lux)	2 hours			36 hours	10 hours
Sunlight Through a Window (10,000 lux)	6 hours			140 hours	38 hours
Daylight Through a Window on a Cloudy Day (5,000 lux)	9 hours			220 hours	61 hours
Indoor Fluorescent Lighting (500 lux)	100 hours			– – –	

- The above exposure time values are all for reference only. Actual required exposure times depend on lighting conditions.

Reference
This section contains more detailed and technical information about watch operation. It also contains important precautions and notes about the various features and functions of this watch.

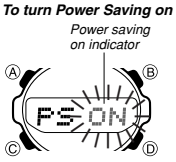
Power Saving Function
The Power Saving function enters a sleep state automatically whenever the watch is left in an area where it is dark for a certain period. The table below shows how watch functions are affected by the Power Saving function.

Approximate Period in sleep state	Functions
3 to 4 days	• LCD off • Alarm, hourly time signal, analog timekeeping and auto receive enabled
8 days or more	• LCD off, alarm and hourly time signal disabled • Analog timekeeping stopped at 12 o'clock • Auto receive disabled

- The sleep state is indicated by a blank screen.
- Wearing the watch inside the sleeve of clothing can cause it to enter the sleep state.

To recover from the sleep state
Perform any one of the following operations.
- Move the watch to a well-lit area.
- Press any button.

To turn Power Saving on and off



1. In the Timekeeping Mode, hold down Ⓐ until the city code starts to flash, which indicates the setting screen.
2. Press Ⓒ nine times until the Power Saving on/off screen appears.
3. Press Ⓓ to toggle Power Saving on (ON) and off (OF).
4. Press Ⓐ to exit the setting screen.

- The Power Saving on indicator is on the display in all modes while Power Saving is turned on.

Auto Return Features
- If you leave the watch in the Alarm Mode or Hand Setting Mode, or with the battery level indicator displayed for two or three minutes without performing any operation, it returns to the Timekeeping Mode automatically.
- If you leave the watch with a flashing setting on the display for two or three minutes without performing any operation, the watch automatically exits the setting screen.

Scrolling
The Ⓑ and Ⓓ buttons are used in various modes and setting screens to scroll through data on the display. In most cases, holding down these buttons during a scroll operation scrolls through the data at high speed.

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

Radio-controlled Timekeeping Precautions
- Strong electrostatic charge can result in the wrong time being set.
- The time calibration signal bounces off the ionosphere. Because of this, such factors as changes in the reflectivity of the ionosphere, as well as movement of the ionosphere to higher altitudes due to seasonal atmospheric changes or the time of day may change the reception range of the signal and make reception temporarily impossible.
- Even if the time calibration signal is received properly, certain conditions can cause the time setting to be off by up to one second.
- The current time setting in accordance with the time calibration signal takes priority over any time settings you make manually.
- The watch is designed to automatically update the date and day of the week for the period January 1, 2000 to December 31, 2099. Setting of the date by the time calibration signal cannot be performed starting from January 1, 2100.
- This watch can receive signals that differentiate between leap years and non-leap years.
- Though this watch is designed to receive both time data (hour, minutes, seconds) and date data (year, month, day), certain signal conditions can limit reception to time data only.
- Normally, the signal reception date shown by the last signal screen is the date data included in the received time calibration signal. When only time data is received, however, the last signal screen shows the date as kept in the Timekeeping Mode at the time of signal reception.
- If you are in an area where proper time calibration signal reception is impossible, the watch keeps time within ±20 seconds a month at normal temperature.

• If you have problems with proper time calibration signal reception or if the time setting is wrong after signal reception, check your Home City code, DST (summer time), and auto receive settings. The following are the initial factory defaults for these settings.

Setting	Initial Factory Default	
City code	BER (Berlin) (Module 4321)	LON (London) (Module 4322)
DST (summer time)	DST A (Auto switching)	
Auto receive	A/C ON (Auto receive)	

Transmitters
This watch is designed to receive the time calibration signal transmitted from Anthorn, England and the signal from Mainflingen, Germany.
• The following explains how the watch determines which transmitter it should check first.

Module 4321

In this case:	The watch does this:
The first signal auto search operation after factory default settings are in effect, or after the city code has been changed	1. Checks the Mainflingen signal first. 2. If the Mainflingen signal cannot be received, checks the Anthorn signal.
Any case other than the above.	1. Checks the last successfully received signal first. 2. If the last successfully received signal cannot be received, checks the other signal.

Module 4322

In this case:	The watch does this:
The first signal auto search operation after factory default settings are in effect, or after the city code has been changed	1. Checks the Anthorn signal first. 2. If the Anthorn signal cannot be received, checks the Mainflingen signal.
Any case other than the above.	1. Checks the last successfully received signal first. 2. If the last successfully received signal cannot be received, checks the other signal.

• To find out the module number of your watch, look at its back cover. The Module number (4321 or 4322) is engraved inside the box on the back cover.

Timekeeping
• Resetting the seconds to **00** while the current count is in the range of 30 to 59 causes the minutes to be increased by 1. In the range of 00 to 29, the seconds are reset to **00** without changing the minutes.
• The day of the week is automatically displayed in accordance with the date (year, month, and day) settings.
• The year can be set in the range of 2000 to 2099.
• 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 battery replaced.
• The current time for all city codes in the Timekeeping Mode and World Time Mode is calculated in accordance with the Greenwich Mean Time (GMT) differential for each city, based on your Home City time setting.
• GMT differential is calculated by this watch based on Universal Time Coordinated (UTC*) data.
** UTC is the world-wide scientific standard of timekeeping. It is based upon carefully maintained atomic (cesium) clocks that keep time accurately to within microseconds. Leap seconds are added or subtracted as necessary to keep UTC in sync with the Earth's rotation. The reference point for UTC is Greenwich, England.*

12-hour/24-hour Timekeeping Formats
The 12-hour/24-hour timekeeping format you select in the Timekeeping Mode is also applied in all other modes.
• With the 12-hour format, the **P** (PM) indicator appears on the display for times in the range of noon to 11:59 p.m. and no indicator appears for times in the range of midnight to 11:59 a.m.
• With the 24-hour format, times are displayed in the range of 0:00 to 23:59 without any indicator.

Illumination Precautions
An LED (light-emitting diode) and a light guide panel illuminate the face of the watch for easy reading in the dark. In any mode, press Ⓑ to illuminate the face of the watch for about one second.
• The illumination provided by the light may be hard to see when viewed under direct sunlight.
• Illumination automatically turns off whenever an alarm sounds.
• Frequent use of illumination shortens the battery operating time.

City Code Table

City Code	City	GMT Differential	Other major cities in same time zone
– – –		–11.0	Pago Pago
HNL	Honolulu	–10.0	Papeete
ANC	Anchorage	–09.0	Nome
LAX	Los Angeles	–08.0	San Francisco, Las Vegas, Vancouver, Seattle/Tacoma, Dawson City
DEN	Denver	–07.0	El Paso, Edmonton
CHI	Chicago	–06.0	Houston, Dallas/Fort Worth, New Orleans, Mexico City, Winnipeg
NYC	New York	–05.0	Montreal, Detroit, Miami, Boston, Panama City, Havana, Lima, Bogota
CCS	Caracas	–04.0	La Paz, Santiago, Port Of Spain
RIO	Rio De Janeiro	–03.0	Sao Paulo, Buenos Aires, Brasilia, Montevideo
– – –		–02.0	
– – –		–01.0	Praia
GMT		+00.0	Dublin, Lisbon, Casablanca, Dakar, Abidjan
LON	London		
PAR	Paris	+01.0	Milan, Rome, Madrid, Amsterdam, Algiers, Hamburg, Frankfurt, Vienna, Stockholm
BER	Berlin		
ATH	Athens	+02.0	Helsinki, Istanbul, Beirut, Damascus, Cape Town
CAI	Cairo		
JRS	Jerusalem		
JED	Jeddah	+03.0	Kuwait, Riyadh, Aden, Addis Ababa, Nairobi, Moscow
THR	Tehran	+03.5	Shiraz
DXB	Dubai	+04.0	Abu Dhabi, Muscat
KBL	Kabul	+04.5	
KHI	Karachi	+05.0	Male
DEL	Delhi	+05.5	Mumbai, Kolkata, Colombo
DAC	Dhaka	+06.0	
RGN	Yangon	+06.5	
BKK	Bangkok	+07.0	Jakarta, Phnom Penh, Hanoi, Vientiane
HKG	Hong Kong	+08.0	Singapore, Kuala Lumpur, Beijing, Taipei, Manila, Perth, Ulaanbaatar
SEL	Seoul	+09.0	Pyongyang
TYO	Tokyo		
ADL	Adelaide	+09.5	Darwin
SYD	Sydney	+10.0	Melbourne, Guam, Rabaul
NOU	Noumea	+11.0	Port Vila
WLG	Wellington	+12.0	Christchurch, Nadi, Nauru Island

• Based on data as of December 2006.