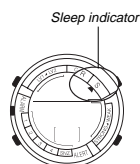# USER'S GUIDE 2512

CASIO®

Getting Acquainted

Congratulations upon your selection of this CASIO watch. To get the most out of your purchase, be sure to carefully read this manual and keep it on hand for later reference when necessary.

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 "Battery" for important information you need to know when exposing the watch to bright light.**

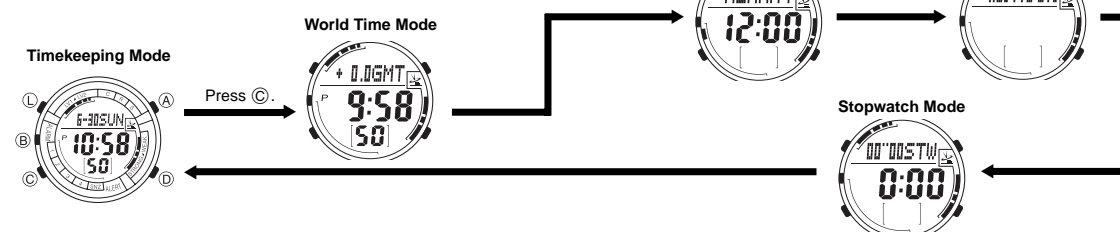### If the display of the watch is blank...

Sleep indicator

If the sleep indicator (💤) is on the display, the display is blank because the watch's Power Saving function has shut it to conserve power. Power Saving automatically turns off the display and puts the watch into a sleep state whenever your watch is left in an area where it is dark for a certain period.
• The initial factory default setting is Power Saving on.
• The watch recovers from the sleep state if you move it to a well-lit area* or if you press any button.
  * It can take up to five seconds for the display to turn on.
• **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.

General Guide

• Press Ⓒ to change from mode to mode.
• In any mode, press Ⓛ to illuminate the display.

Timekeeping Mode → Press Ⓒ. → **World Time Mode** → **Alarm Mode** → **Data Memory Mode** → **Stopwatch Mode**
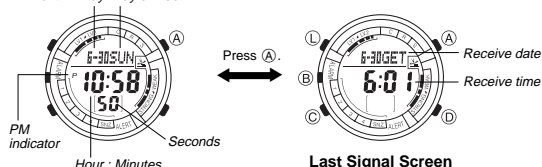
Timekeeping

Use the Timekeeping Mode to set and view the current time and date.
• Pressing Ⓐ displays the Last Signal screen (date and time the time calibration signal was last received) in the Timekeeping Mode.

Month – Day Day of week
PM indicator
Hour : Minutes
Seconds

Press Ⓐ.

Receive date
Receive time

Last Signal Screen

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.
• Before using the watch in Western Europe, first use the procedure under "Setting Up the Watch for Use in Western Europe" to set the time in accordance with a time calibration signal.
• Note that after you set your Home City (the city where you normally use the watch) code, you must also turn on the watch's time calibration signal receiver if you want to enable auto time calibration. See "About Auto Receive" for more information.
• See "Setting the Time and Date Manually" for information about manual settings.

Setting Up the Watch for Use in Western Europe

You need to make the following three settings before using this watch in Western Europe. The following provides a general overview of the setting procedure. For full details, see "Setting the Time and Date Manually" and "Time Calibration Signal Reception".
• Specify the city code for your Home City (the city where you will normally use the watch).
• Select the auto summer time (DST) setting.
• Perform the manual time calibration signal receive operation to set the current time.

To set up the watch for use in Western Europe

GMT differential City code
Receive indicator

1. In the Timekeeping Mode, press Ⓑ. This causes the current auto receive on/off setting (the receive indicator) to flash, which indicates the setting screen.
2. Press Ⓒ to move the flashing to the city code setting.
3. Use Ⓓ(+) and Ⓐ(–) 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.
  BER and **PAR**: Berlin, Paris, Milan, Rome, Amsterdam, Hamburg, Frankfurt, Vienna
  LON: London
4. Press Ⓒ to display the summer time (DST) setting screen.
5. Use Ⓓ to select **AUTO DST**.
   • **AUTO DST** specifies auto switching between Daylight Saving Time and Standard Time.
6. Press Ⓑ to exit the setting screen.
7. Hold down Ⓐ for about two seconds until the watch beeps.
• Release Ⓐ and the message **receiving** appears to indicate that signal reception has started.
• Time calibration signal reception takes from two to six minutes. Take care that you do not move the watch during this time.

Receive indicator

• If the watch is indoors, we recommend that you place the watch near a window to allow better signal reception.
• After signal reception is complete, the display of the watch changes to the Last Signal screen.

Time Calibration Signal Reception

This watch is designed to pick up a time calibration signal and update its time setting in accordance with the signal. There are two different methods you can use to receive the signal: **Auto Receive** and **Manual Receive**. With **Auto Receive**, the watch automatically receives the calibration signal three times each day and makes appropriate adjustments. With **Manual Receive**, you perform a specific button operation to receive the calibration signal.
Before performing a signal receive operation, remove the watch from you wrist and position it as shown in the illustrations below.
• If your watch has a resin band, pass the end of the band through the band loop and place the watch on a stable surface.
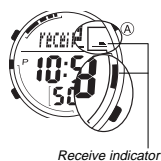
Resin band

Metal band

Pass through band loop.

Note
• If you are using the time calibration signal to set the time for this watch, be sure to correctly set your Home City. Otherwise, there is the chance that the watch will not set the correct time. See "Setting the Time and Date Manually" for details.
• Note that signal reception is possible only when the watch is within range of a time calibration signal transmitter, and **BER**, **PAR**, **LON**, or **ATH** is selected as the Home City code.
• See "City Code Table" for a complete list of available city codes.
• The current time setting in accordance with the time calibration signal takes priority over any time settings you make.
• Auto receive is turned on when the watch is shipped from the factory.
• See the information under "Time Calibration Signal Reception" if you experience problems with time calibration signal reception.

1

To perform manual time calibration signal reception
1. Place the watch on a stable surface so its top (12 o'clock side) is facing in the general direction of the signal transmitter.
   - Note that signal reception is poor if the watch is on its back or side.

2. In the Timekeeping Mode, hold down Ⓐ for about two seconds until the watch beeps.
   - Release Ⓐ and the message **receiving** appears to indicate that signal reception has started.
   - Time calibration signal reception takes from two to six minutes. Take care that you do not move the watch during this time.
   - After signal reception is complete, the display of the watch changes to the Last Signal screen.
   - The receive indicator indicates that the calibration time reception attempt was successful.
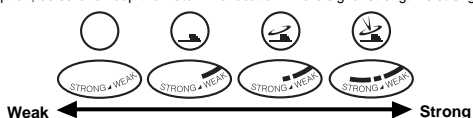
Receive indicator

Note
- To interrupt a receive operation and return to the Timekeeping Mode, press Ⓐ.
- If the receive operation is unsuccessful, the message **ERROR!** 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 **ERROR!** screen to the normal timekeeping screen by pressing Ⓐ.

About the Receive Indicator
The receive 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.

Weak ← → **Strong**

- Even in an area where signal strength is strong, it takes about 10 seconds for signal reception to stabilize enough for the receive indicator to indicate signal strength.
- Use the receive indicator as a guide for checking signal strength and for finding the best location for the watch during signal receive operations.
- The receive indicator remains on the display in all modes following reception of the time calibration signal and calibration of the watch's time setting. The receive indicator does not appear if signal reception was unsuccessful or after manual adjustment of the current time setting.

About Auto Receive
When auto receive is turned on, the watch automatically starts to receive the time calibration signal when the time in the Timekeeping Mode reaches 2:00 AM, 4:00 AM and 6:00 AM each day (calibration times).

Note
- The auto receive operation is performed only if the watch is in the Timekeeping or World Time Mode when one of the calibration times is reached.
  It is not performed if a calibration time is reached while you are making settings (while settings are flashing on the display), while an alarm is sounding, or while a silent alert operation is being performed.
- Auto receipt 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.
- The receive indicator indicates that either the 2:00 AM, 4:00 AM, or 6:00 AM calibration signal reception was successful. Note, however, that the receive indicator is cleared from the display at 3:00 AM each day.
- If you do not see the receive indicator except for the above reason, it means there was some problem with the calibration reception operation. Either perform reception manually, or make sure the watch is set up properly to receive the time calibration signal for the next automatic reception time.
- 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.
- The receive indicator (☼) appears only when the watch is able to successfully receive both time and date data. It does not appear when only time data is received.
  When time and date data is received: Receive indicator (☼) appears.
  When time data only is received: Receive indicator (☼) does not appear.
- 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 date as kept in the Timekeeping Mode at the time of signal reception.
- When auto receive is turned on, the watch receives the calibration signal for two to six minutes each day when the Timekeeping Mode time reaches 2:00 AM, 4:00 AM and 6:00 AM. Do not operate any of the watch's buttons within six minutes prior to or following 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 2:00 AM, 4:00 AM and 6:00 AM, regardless of whether or not the Timekeeping Mode time is actually the correct time.
- When two or three receptions are successful, the watch uses the data of the last reception for calibration. When only one reception is successful, the watch uses the data of the successful reception.
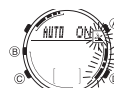
To turn auto receive on and off
1. In the Timekeeping Mode, press Ⓑ. This causes the current auto receive on/off setting (the receive indicator) to flash, which indicates the setting screen.
2. Press Ⓓ to toggle auto receive on (**ON**) and off (**OFF**).
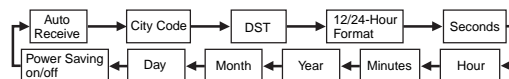3. Press Ⓑ to exit the setting screen.

Setting the Time and Date Manually
Make sure you select your Home City code (the city code whose time and date you are setting) before 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 time and date manually
1. In the Timekeeping Mode, press Ⓑ. This causes the current auto receive on/off setting (the receive indicator) to flash, which indicates the setting screen.
2. Press Ⓒ to move the flashing in the sequence shown below to select other settings.

Auto Receive → City Code → DST → 12/24-Hour Format → Seconds

Power Saving on/off ← Day ← Month ← Year ← Minutes ← Hour

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

Setting	Screen	Button Operations
Auto Receive	AUTO ON	Press Ⓓ to toggle auto receive on and off.
City code	+ 1.0BER	Use Ⓓ (+) and Ⓐ (–) to change the setting.
DST	OFF DST	Press Ⓓ to toggle between Daylight Saving Time (**ON**) and standard time (**OFF**). • Pressing Ⓓ performs a different operation when **BER**, **PAR**, **LON** or **ATH** is selected as Home City Code. See "Auto Summer Time (DST) Switching".
12/24-Hour format	12H	Press Ⓓ to toggle between 12-hour (**12H**) and 24-hour (**24H**) timekeeping.
Hour, Minutes	10:58	Use Ⓓ (+) and Ⓐ (–) to change the setting.
Seconds	50	Press Ⓓ to reset the seconds to **00**.
Month, Day, Year	6-30'02	Use Ⓓ (+) and Ⓐ (–) to change the setting.
Power Saving on/off	SLEEP ON	Press Ⓓ to toggle the Power Saving on (**ON**) and off (**OFF**).

4. Press Ⓑ to exit the setting screen.
- The auto receive setting is used for time calibration signal reception only. See "About Auto Receive" for details.
- See "City Code Table" for a complete list of available city codes.
- 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.

World Time

GMT differential *City code*
Current time in the selected city code

World Time shows the current time in 30 cities (29 time zones) around the world.
- For full information on city codes, see the "City Code Table".
- The current time for all city codes in the World Time Mode is calculated in accordance with the Greenwich Mean Time (GMT) differential for each city, based on the your Home City time setting.
- 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 code
While in the World Time Mode, press Ⓓ to scroll through the city codes (time zones) to the east or Ⓐ to scroll to the west.
- If the current time shown for a city is wrong, check your Timekeeping Mode time and Home City settings and make the necessary changes.
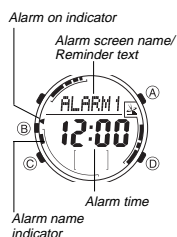
To toggle a city code time between standard time and Daylight Saving Time
1. In the World Time Mode, use Ⓐ and Ⓓ to display the city code (time zone) whose standard time/Daylight Saving Time setting you want to change.
2. Press Ⓑ to toggle Daylight Saving Time (**DST** displayed) and standard time (**DST** not displayed).
- The **DST** indicator is on the display whenever you display a city code for which Daylight Saving Time is turned on.
- Note that the DST/Standard Time setting affects only the currently displayed city code. Other city codes are not affected.

- Daylight Saving Time (DST) advances the time setting by one hour from Standard Time. Remember that the not all countries or even local areas use Daylight Saving Time.
- The watch will perform a signal receive operation 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 code time.

2

CASIO

Alarms

Alarm on indicator

Alarm screen name/ Reminder text

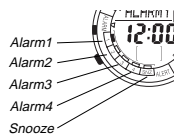*Alarm name indicator*

Alarm time

The Alarm Mode gives you a choice of four one-time alarms and one snooze alarm. You can select either an audible beeper or flashing silent alert to let you know when any of the alarm times is reached.
You can also input reminder text that appears when the alarm time is reached.
Also use the Alarm Mode to turn the Hourly Time Signal on and off.
• All of the operations in this section are performed in the Alarm Mode, which you enter by pressing Ⓒ .

To display Alarm Mode screen
In the Alarm Mode, use Ⓓ to cycle through the alarm screens as shown below.

```
ALARM1 → ALARM2 → ALARM3 → ALARM4 → SNOOZE → SIGNAL
```

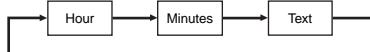*Alarm1*
Alarm2
Alarm3
Alarm4
Snooze

• The following alarm screen names appear in the center of the display to indicate the alarm whose screen is currently displayed.
ALARM1 through **ALARM4**: One-time alarm screen
SNOOZE: Snooze alarm screen
SIGNAL: Hourly Time Signal screen
• The currently displayed alarm screen is also indicated by the alarm name indicators along the bottom left of the watch's display.

To set an alarm

1. In the Alarm Mode, use Ⓓ to select the alarm whose time you want to set.
2. Press Ⓑ and the hour setting of the alarm time starts to flash, which indicates the setting screen.
   • Pressing Ⓐ and Ⓓ at the same time resets the alarm time to 12:00 AM, and clears the reminder text in the upper part of the display (if there is any).
3. Press Ⓒ to move the flashing in the sequence shown below to select other settings.

```
Hour → Minutes → Text
```

• Selecting the text causes the text input cursor to appear. You can input up to eight characters of reminder text for each alarm.
• There are eight spaces in the text, so you have to press Ⓒ eight times to move to the Hour setting.
4. When the setting you want to change is selected, use Ⓐ and Ⓓ to change it.
   • While the hour or minute 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).
   • When inputting text, use Ⓐ and Ⓓ to cycle through characters at the current cursor location, and Ⓒ to move the cursor to the right. See "Inputting Text" for more information.
5. Press Ⓑ to exit the setting screen.
• If you input reminder text, the text appears in place of the alarm screen name when you exit the setting screen.
• If the reminder text has more than six characters, it will scroll from right to left whenever it is displayed.

Alarm Operation
The following table describes the different types of alarm operations that this watch can perform.

Alarm on indicator

Snooze indicator

Alert on indicator

Alarm Operation Type	Description
Alarm off	• Nothing happens when the alarm time is reached.
Alarm on	• The alarm on indicator and alarm name indicator flash on the display for 10 seconds. • The watch beeps for 10 seconds.
Alert on	• The alert on indicator and alarm name indicator flash on the display for 10 seconds. • The watch does not beep.

• Press any button to stop the alarm after it starts to sound.
• If any alarm operation (one-time alarm, silent alert, snooze) occurs while a signal receive operation is in progress, the receive operation is canceled.
• In the case of the snooze alarm, the alarm operation repeats up to seven times every five minutes until the alarm is turned off.
• If you input reminder text for an alarm, the text appears for one minute in place of the date on the Timekeeping Mode screen. The text is cleared from the Timekeeping Mode screen if you change to another mode while it is displayed.
• Alarm operations and the Hourly Time Signal operation are performed in all modes.

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

To select the alarm operation type
1. In the Alarm Mode, use Ⓓ to select the screen for the alarm (**ALARM1** to **ALARM4**, or **SNOOZE**) whose alarm type you want to select.
2. Press Ⓐ to cycle through the available settings in the sequence shown below.

```
Alarm off → Alarm on → Alert on
```

• The alarm on indicator (ᴀʟᴀʀᴍ) and alarm name indicator are displayed for each alarm (1 through 4, snooze) for which alarm on is selected. The alert on indicator (ᴀʟᴇʀᴛ) and alarm name indicator are displayed for each alarm (1 through 4, snooze) for which alert on is selected.
• In other modes besides the Alarm Mode, the alarm name indicator is displayed for each alarm for which alarm on is selected.
• In all modes, the alarm on indicator or alert on indicator is shown for any alarm (**ALARM1** through **ALARM4**, or **SNOOZE**) that is currently turned on.
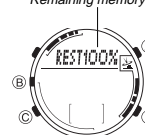
To turn the Hourly Time Signal on and off
1. In the Alarm Mode, use Ⓓ to select the Hourly Time Signal (**SIGNAL**).
2. Press Ⓐ to toggle it on (**SIG** displayed) and off (**SIG** not displayed).
• The Hourly Time Signal on indicator (**SIG**) is shown on the display in all modes while this function is turned on.

Data Memory

Remaining memory

You can use the watch's data memory to store e-mail addresses, Web page URLs, and other text data.
• All of the operations in this section are performed in the Data Memory Mode, which you enter by pressing Ⓒ.

Data Memory Records
Each data memory record can contain up to 63 characters. Records are stored in memory in the sequence they are created.
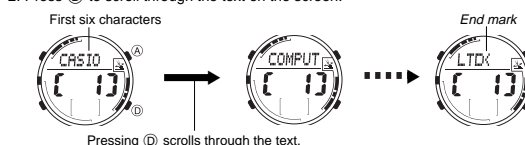• The number of records you can store in data memory depends on the number of characters that make up each record. See "Data Memory Management" for more information.

To create a new data memory record

Cursor

Text

Record number

1. In the Data Memory Mode, press Ⓐ and Ⓓ at the same time to display the remaining memory screen.
   • You do not have to perform the above step if the remaining memory screen is already on the display.
   • If **REST 0%** is shown for remaining memory, it means that memory is full. To store another record, you will first have to delete some of the records stored in memory.
2. Press Ⓑ and the flashing cursor appears on the display, which indicates the setting screen.
3. Use Ⓐ and Ⓓ to cycle through characters at the current cursor location, and Ⓒ to move the cursor to the right. See "Inputting Text" for more information.
   • If memory becomes full while you are inputting text, the cursor will jump to the first (leftmost) character of the text when you press Ⓒ, instead of advancing to the right.
4. Press Ⓑ to store your data and return to the data memory record screen (without the cursor).
• The message **SAVE!** appears for about two seconds, followed by a data memory record screen, which shows the text you just input in the upper part of the display, and a record number automatically assigned by the watch in the lower part of the display.
• While the record number is in the lower part of the display, you can see only six characters of the text in the record. You can scroll through the text on the screen by pressing Ⓓ. See "To recall data memory records" for more information.

To recall data memory records
1. In the Data Memory Mode, press Ⓐ to scroll forward through data memory records.
   • Each press of Ⓐ advances to the next record and shows its record number and first six characters of its text.
   • Pressing Ⓐ while the last record in memory is on the display changes to the remaining memory screen. Pressing Ⓐ again displays the first record.
2. Press Ⓓ to scroll through the text on the screen.

First six characters

End mark

Pressing Ⓓ scrolls through the text.

• An end mark indicates the end of the text.

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To edit a data memory record
1. In the Data Memory Mode, display the record you want to edit.
2. Press Ⓑ and the flashing cursor appears on the display.
3. Press Ⓒ to move the flashing to the character you want to change.
4. Use Ⓓ and Ⓐ to change the character.
5. After making the changes you want, press Ⓑ to store them and return to the data memory record screen.

To delete a data memory record
1. In the Data Memory Mode, display the record you want to delete.
2. Press Ⓑ and the flashing cursor appears on the display.
3. Press Ⓐ and Ⓓ at the same time to delete the record.
   • The message **CLEAR!** appears to indicate that the record is being deleted. After the record is deleted, the cursor appears on the display, ready for input.
4. Input data or press Ⓑ to return to the remaining memory screen.

Stopwatch

Seconds   1/100 second

Ⓐ

Ⓒ   Ⓓ

Hours   Minutes

The stopwatch lets you measure elapsed time, split times, and two finishes.
• The display range of the stopwatch is 23 hours, 59 minutes, 59.99 seconds.
• 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

Ⓓ ——→ Ⓓ ——→ Ⓓ ——→ Ⓓ ——→ Ⓐ
Start   Stop   Re-start   Stop   Clear

Split Time

Ⓓ ——→ Ⓐ ——→ Ⓐ ——→ Ⓓ ——→ Ⓐ
Start   Split   Split release   Stop   Clear
        (**SPL** displayed)

Two Finishes

Ⓓ ——→ Ⓐ ——→ Ⓓ ——→ Ⓐ ——→ Ⓐ
Start   Split   Stop   Split release   Clear
        First runner   Second runner   Display time of
        finishes.   finishes.   second runner.
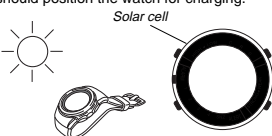   Display time of
        first runner.

Battery

This watch is equipped with a solar cell and a 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.

Solar cell

Example: Orient the watch so its face is pointing at a light source.
• Note that charging efficiency drops when any part of the solar cell is blocked by clothing, etc.
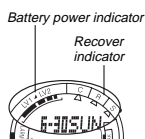• The illustration shows how to position a watch with a resin band.

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. Be sure that the watch is normally exposed to bright light whenever possible.
• This watch employs a solar cell that converts light into electricity that charges a built-in rechargeable battery. Normally, the rechargeable battery should not need replacement, but after very long use over a number of years, the rechargeable battery may lose its ability to achieve a full charge. Should you notice problems with getting the rechargeable battery to a full charge, contact your dealer or CASIO distributor about having the rechargeable battery replaced.
• The rechargeable battery should be replaced with a CASIO-specified CTL1616 battery only. Other rechargeable batteries can cause damage to the watch.
• All data stored in memory is deleted, and the current time and all other settings return to their initial factory defaults whenever battery power drops to Level 4 and when you have 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.

Battery Power Indicator
The battery power indicator on the display shows you the current status of the rechargeable battery's power.

Battery power indicator

Recover indicator

Level	Battery Power Indicator	Function Status
1		All functions enabled.
2		All functions enabled.
3	*Charge Soon Alert*	Beeper tone, backlight, display, and buttons are disabled.
4		All functions, including timekeeping, are disabled.

• The Level 3 charge warning indicator tells you that battery power is very low, and that exposure to bright light for charging is required as soon as possible.
• At Level 4, 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 current time, date, and all other settings after the battery is recharged to Level 2 from Level 4. Though the time appears on the display after the battery is charged to Level 3, you will not be able to change the time setting until the battery reaches Level 2.
• Leaving the watch in direct sunlight or some other very strong light source can cause the battery power indicator to temporarily show a reading that is actually higher than the battery level. The correct battery power indicator should appear after a few minutes.
• If you use the backlight or the alarms a number of times during a short period, the Recover indicator (⊿) appears on the display and the following operations become disabled until battery power recovers.
   Backlight
   Beeper tone
   Calibration reception
   After some time, battery power will recover and the Recover indicator (⊿) will disappear, indicating that the above functions are 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.

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, all functions of the watch remain enabled for up to about six months, the watch is used under the conditions described below.
Operating Conditions
• *Watch is not exposed to light*
• *1 backlight operation (1.5 seconds) per day*
• *10 seconds of alarm operation per day*
• *3 times calibration reception per day*

Charge Times
Exposing the watch to light for the periods shown below each day restores the power used by the above operating conditions.

Exposure Level (Brightness)	Approximate Exposure Time
Outdoor Sunlight (50,000 lux)	5 minutes
Sunlight Through a Window (10,000 lux)	24 minutes
Daylight Through a Window on a Cloudy Day (5,000 lux)	48 minutes
Indoor Fluorescent Lighting (500 lux)	8 hours

• Stable operation is promoted by frequent charging.

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 4	Level 3	Level 2	Level 1
Outdoor Sunlight (50,000 lux)	52 minutes		15 hours	2 hours
Sunlight Through a Window (10,000 lux)	2 hours		67 hours	13 hours
Daylight Through a Window on a Cloudy Day (5,000 lux)	4 hours		------------	------------
Indoor Fluorescent Lighting (500 lux)	37 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.

Auto Return Features
• If you leave the watch in the Alarm or Data Memory Mode for two or three minutes without performing any operation, it automatically changes to the Timekeeping Mode.
• If you leave a screen with flashing digits or a cursor on the display for two or three minutes without performing any operation, the watch automatically saves anything you have input up to that point and exits the setting screen.
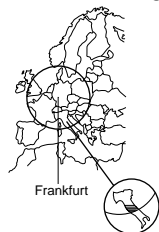
Data and Setting Scrolling
The Ⓐ and Ⓓ buttons are used in various modes and setting screens to scroll through data on the display. In most cases, holding down these buttons during a scroll operation scrolls through the data at high speed.

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

Time Calibration Signal Reception

- This watch is able to receive the time calibration signal transmitted from Mainflingen, Germany (located 25 kilometers southeast of Frankfurt). Signal reception is possible within the area represented by a circle with a radius of about 1000 kilometers.
- At distances further than about 500 kilometers, the signal may become weak and reception may be impossible under certain conditions.
- Signal reception may be poor in the shaded area on the map, even though it is within 1,000 kilometers of the signal transmitter.

Frankfurt

General Precautions
- The watch is designed to automatically update the date and day of the week for the period January 1, 2000 to December 31, 2039. Setting of the date by the time calibration signal cannot be performed starting from January 1, 2040.
- This watch can receive signals that differentiate between leap years and non-leap years.
- Even when the watch is within the reception range of the transmitter, signal reception is 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.
- The time calibration signal is bounced 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.
- Reception is best when the antenna built into the 12 o'clock edge of the watch is facing in the general direction of the signal transmitter. Note, however, that moving the watch while the time calibration signal receive operation is taking place will make stable reception impossible.
- Think of the watch as acting like a TV or radio when it is receiving the calibration signal. When receiving indoors, move to a location as near as possible to a window.
- Proper signal reception can be difficult or even impossible under the conditions listed below.
  Near TVs, refrigerators, computers, or other household appliances
  Far away from broadcasting stations among ferro-concrete structures or near mountains
  Underground, in tunnels or in ferro-concrete buildings
  Near high-tension wires, neon signs, or radio stations with interfering frequencies
  Near railroads, highways or airports
  In trains or cars
- Radio interference can make signal reception impossible.
- Strong electrostatic charge can result in the wrong time being set.

Troubleshooting
Check the following points whenever you experience problems with your watch.

Problem	Probable Cause	What you should do
Cannot perform manual receive.	• The watch is not in the Timekeeping Mode. • You do not select one of the following City Codes as your Home City Code: **BER**, **PAR**, **LON**, or **ATH**.	• Enter the Timekeeping Mode and try again. • Select the correct Home City Code.
Auto receive is turned on, but the receive indicator does not appear on the 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 the auto signal receive operation was performed. • Even if receive is successful, the receive indicator disappears every day at 3am. • Time data (hour, minutes, seconds) only was received during the last receive operation. The receive indicator appears only when time data and date data (year, month, day) are both received.	• Perform manual signal receive or wait until the next auto signal receive operation is performed. • Check to make sure the watch is in a location where it can receive the signal. • Put the watch in a location that is suitable for good reception.
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 .

Auto Summer Time (DST) Switching
The time calibration signal transmitted from Mainflingen, Germany includes both standard time and summer time (Daylight Saving Time) data. When auto summer time (DST) switching is turned on, the watch switches between standard time and summer time (DST) automatically in accordance with the calibration signal.
- Daylight Saving Time (DST) advances the time setting by one hour from Standard Time. Remember that not all countries or even local areas use Daylight Saving Time.
- When using the watch within the reception range of the Mainflingen transmitter, and **BER**, **PAR**, **LON**, or **ATH** is selected as the Home City code, select **AUTO DST** to turn on the auto summer time setting.
- The default auto summer time setting is **AUTO DST** 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 turn off auto time switching.

To select the auto summer time setting
1. In the Timekeeping Mode, press Ⓑ. This causes the current auto receive on/off setting (the receive indicator) to flash, which indicates the setting screen.
2. Press Ⓒ twice until the summer time (DST) setting screen appears.
3. Use Ⓓ to cycle through the summer time settings in the sequence shown below.

AUTO DST → OFF DST → ON DST

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

Timekeeping
- 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 2039.
- The watch's built-in full automatic calendar automatically 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 is calculated in accordance with the Greenwich Mean Time (GMT) differential for each city, based on the your Home City time setting.
- GMT differential is calculated by this watch based on Universal Time Coordinated (UTC*) data.

  *The letters "UTC" stands for "Universal Time Coordinated," which is the world-wide scientific standard of timekeeping. It is based upon carefully maintained atomic (cesium) clocks that keep accurate 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.
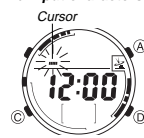
12-hour/24-hour Timekeeping Formats
The 12-hour/24-hour timekeeping format you select in the Timekeeping Mode is also applied in all other modes.
- With the 12-hour format, the **P** (PM) indicator appears on the display for times in the range of noon to 11:59 p.m. and the no indicator appears for times 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, with **24** indicator.
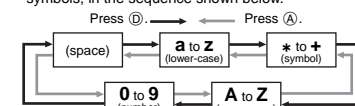
Inputting Text
The following describes how to input text in the Alarm and Data Memory Modes.

To input characters
Cursor

12:00

Reminder Text Input Screen

1. When the cursor is on the display, use Ⓐ and Ⓓ to cycle through the available letters, numbers and symbols, in the sequence shown below.

Press Ⓓ. → ← Press Ⓐ.

(space) → **a** to **z** (lower-case) → * to + (symbol)
0 to **9** (number) → **A** to **Z** (upper-case)

2. When the character you want is at the cursor position, press Ⓒ to move the cursor to the right.
3. Repeat steps 1 and 2 to input the rest of the characters you want.
- See the "Character List" for information about the characters you can input.

Data Memory Management
Data memory can hold up to 315 characters total, while each record can contain up to 63 characters. This means that 40 records can be stored in data memory when each record contains seven characters of text or less.

Power Saving Function
When turned on, the Power Saving function automatically puts the watch into a sleep state whenever it 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.

Elapsed Time in Dark	Display	Operation
3 to 4 days	Blank, with Sleep indicator (▲)	All functions enabled, except for the display
7 or 8 days	Blank, with Sleep indicator (▲)	All functions disabled

- Wearing 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. It can take up to five seconds for the display to turn on.
- Press any button.

To turn Power Saving on and off
1. In the Timekeeping Mode, press Ⓑ. This causes the current auto receive on/off setting (the receive indicator) to flash, which indicates the setting screen.
2. Press Ⓒ 10 times until the Power Saving on/off screen appears.
3. Press Ⓓ to toggle Power Saving on (**ON**) and off (**OFF**).
4. After the setting is the way you want, press Ⓑ to exit the setting screen.

SLEEP ON

Backlight Precautions
The backlight uses an EL (electro-luminescent) panel that causes the entire display to glow for easy reading in the dark.
In any mode, press Ⓛ to illuminate the display for about one second.
- The electro-luminescent panel that provides illumination loses power after very long use.
- The illumination provided by the backlight may be hard to see when viewed under direct sunlight.
- The watch may emit an audible sound whenever the display is illuminated. This is due to vibration of the EL panel used for illumination, and does not indicate malfunction.
- The backlight automatically turns off whenever an alarm sounds.
- Frequent use of the backlight shortens the battery life.

City Code Table

City Code	City	GMT Differential	Other major cities in same time zone
– – –		–11	PAGO PAGO
HNL	HONOLULU	–10	PAPEETE
ANC	ANCHORAGE	–9	NOME
LAX	LOS ANGELES	–8	SAN FRANCISCO, LAS VEGAS, VANCOUVER, SEATTLE, DAWSON CITY
DEN	DENVER	–7	EL PASO, EDMONTON
CHI	CHICAGO	–6	HOUSTON, DALLAS/FORT WORTH, NEW ORLEANS, MEXICO CITY, WINNIPEG
NYC	NEW YORK	–5	MONTREAL, DETROIT, MIAMI, BOSTON, PANAMA CITY, HAVANA, LIMA, BOGOTA
CCS	CARACAS	–4	LA PAZ, SANTIAGO, PORT OF SPAIN
RIO	RIO DE JANEIRO	–3	SÃO PAULO, BUENOS AIRES, BRASILIA, MONTEVIDEO
– – –		–2	
– – –		–1	PRAIA
GMT		+0	DUBLIN, LISBON, CASABLANCA, DAKAR, ABIDJAN
LON	LONDON		
PAR	PARIS	+1	MILAN, ROME, MADRID, AMSTERDAM, ALGIERS, HAMBURG, FRANKFURT, VIENNA, STOCKHOLM
BER	BERLIN		
ATH	ATHENS	+2	HELSINKI, ISTANBUL, BEIRUT, DAMASCUS, CAPE TOWN
CAI	CAIRO		
JRS	JERUSALEM		
JED	JEDDAH	+3	KUWAIT, RIYADH, ADEN, ADDIS ABABA, NAIROBI, MOSCOW
THR	TEHRAN	+3.5	SHIRAZ
DXB	DUBAI	+4	ABU DHABI, MUSCAT
KBL	KABUL	+4.5	
KHI	KARACHI	+5	MALE
DEL	DELHI	+5.5	MUMBAI, KOLKATA
DAC	DHAKA	+6	COLOMBO
RGN	YANGON	+6.5	
BKK	BANGKOK	+7	JAKARTA, PHNOM PENH, HANOI, VIENTIANE
HKG	HONG KONG	+8	SINGAPORE, KUALA LUMPUR, BEIJING, TAIPEI, MANILA, PERTH, ULAANBAATAR
TYO	TOKYO	+9	PYONGYANG
SEL	SEOUL		
ADL	ADELAIDE	+9.5	DARWIN
SYD	SYDNEY	+10	MELBOURNE, GUAM, RABAUL
NOU	NOUMEA	+11	PORT VILA
WLG	WELLINGTON	+12	CHRISTCHURCH, NADI, NAURU ISLAND

• Based on data as of December 2001.

Character List

(space)		i		r		∗		%	
a		j		s		–		.	
b		k		t		_		:	
c		l		u		@		,	
d		m		v		~		,	
e		n		w		/		&	
f		o		x		?		=	
g		p		y		#		÷	
h		q		z		!		×	

–		H		Q		Z		8	
+		I		R		0		9	
A		J		S		1			
B		K		T		2			
C		L		U		3			
D		M		V		4			
E		N		W		5			
F		O		X		6			
G		P		Y		7			