

Operation Guide 4709 4713

CASIO®

Getting Acquainted

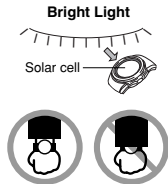
Congratulations upon your selection of this CASIO watch. To get the most out of your purchase, be sure to read this manual carefully.

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

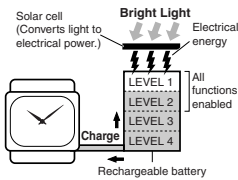
The electricity generated by the solar cell of the watch is stored by a built-in battery. Leaving or using the watch where it is not exposed to light causes the battery to run down. Make sure the watch is exposed to light as much as possible.

- 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.

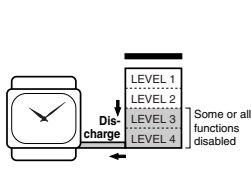


- The watch continues to operate, even when it is not exposed to light. Leaving the watch in the dark can cause the battery to run down, which will result in some watch functions to be disabled. If the battery goes dead, you will have to re-configure watch settings after recharging. To ensure normal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

Battery charges in the light.

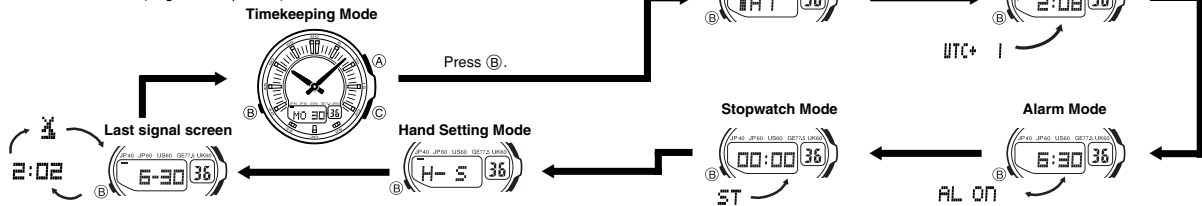


Battery discharges in the dark.



General Guide

- Press (B) to change from mode to mode.
- In any mode (except when a setting screen is on the display), press (A) to illuminate the display.
- When setting the time, you can also configure settings for the language of the day of the week indicator (English or Japanese).



Radio-controlled Atomic Timekeeping

This watch receives a time calibration signal and updates its time setting accordingly.

- Supported time calibration signals: Germany (Mainflingen), England (Anthorn), United States (Fort Collins), Japan.



Day of week Seconds

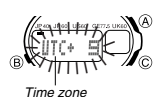
Current Time Setting

This watch adjusts its time setting automatically 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 specify your Home Time Zone, which is the time zone where you normally will use the watch. For more information, see "To specify your Home Time Zone".

- When using the watch outside the areas covered by the time signal transmitters, you will have to adjust the current time setting manually as required. See "Timekeeping" for more information about manual time settings.
- The U.S. time calibration signal can be picked up by the watch while in North America. The term "North America" in this manual refers to the area that consists of Canada, the continental United States, and Mexico.
- 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 specify your Home Time Zone



Time zone

1. In the Timekeeping Mode, hold down (A) the UTC differential value starts to flash, which indicates the setting screen.
 - Though illumination will also turn on when you press (A), keep the button held down until UTC differential value flashes.
2. Press (C) to select the time zone you want to use as your Home Time Zone.
 - Time calibration signal reception is supported when any one of the time zones shown in the table below is selected as your Time Zone.

- 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.

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

About This Manual



Module 4709



Module 4713

- The operational procedures for Modules 4709 and 4713 are identical. All of the illustrations in this manual show Module 4713.
- Most of the display examples in this manual show only the digital display, without the analog hands.
- 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.

German/U.K. Signal	Japan Signal	U.S. Signal
UTC differential value	UTC differential value	UTC differential value
UTC +0	UTC +8	UTC -10
UTC +1	UTC +9	UTC -9
UTC +2		UTC -8
		UTC -7
		UTC -6
		UTC -5

3. Press (A) to exit the setting screen.

Important!

- Normally, your watch should show the correct time as soon as you select your Home Time Zone. If it does not, it should adjust automatically after the next auto receive operation (in the middle of the night). You can also perform manual receive or you can set the time manually.
- 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 time zones and transmitters, see "Home Time Zones and Transmitters".
- Under factory default settings, auto receive is turned off for all of the following time zones: UTC +8, UTC -10, and UTC -9. For details about turning on auto receive for these time zones, see "To turn auto receive on and off".
- You can disable time signal reception, if you want. See "To turn auto receive on and off" for more information.
- See the maps under "Approximate Reception Ranges" for information about the reception ranges of the watch.
- If you are in an area that does not use Daylight Saving Time (summer time), turn off the DST setting.

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

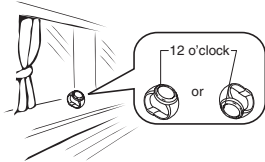
With auto receive, the watch receives the time calibration signal automatically up to six times a day. When any auto receive is successful, the remaining auto receive operations are not performed. For more information, see "About Auto Receive".

• Manual Receive

Manual receive lets you start a time calibration receive operation 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. This watch is designed to receive a time calibration signal late at night. Because of this, you should place the watch near a window as shown in the illustration when you take it off at night. 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.



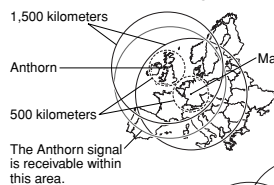
- Inside or among buildings
- Inside a vehicle
- Near household appliances, office equipment, or a mobile phone
- Near a construction site, airport, or other sources of electrical noise
- Near high-tension power lines
- Among or behind mountains

- Signal reception normally is 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.
- The time calibration signal the watch will attempt to pick up depends on its current Home Time Zone setting as shown below. If you use the watch in Japan or Europe (each of which has two different transmitter locations), it will try to receive the time calibration signal from one of the transmitters in your current location. If it cannot receive the signal, it will then try to receive the time calibration signal from the other transmitter.

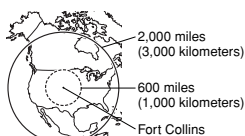
Home Time Zones and Transmitters

Home Time Zone	Transmitter	Frequency
UTC +0		
UTC +1	Anthorn (England)	60.0 kHz
UTC +2	Mainflingen (Germany)	77.5 kHz
UTC +8	Fukushima (Japan)	40.0 kHz
UTC +9	Fukuoka/Saga (Japan)	60.0 kHz
UTC -10		
UTC -9		
UTC -8	Fort Collins, Colorado (the United States)	60.0 kHz
UTC -7		
UTC -6		
UTC -5		

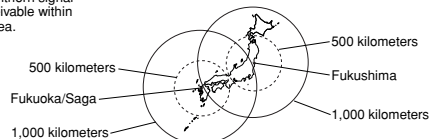
Approximate Reception Ranges
U.K. and German Signals



U.S. Signal



The Anthorn signal is receivable within this area.



Japan Signals

- Signal reception may not be possible at the distances noted below during certain times of the year or day. Radio interference may also cause problems with reception. Mainflingen (Germany) or Anthorn (England) transmitters: 500 kilometers (310 miles)
- Fort Collins (United States) transmitter: 600 miles (1,000 kilometers)
- Fukushima or Fukuoka/Saga (Japan) transmitters: 500 kilometers (310 miles)
- 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

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 reception schedule (calibration times) depends on your currently selected Home Time Zone, and whether standard time or Daylight Saving Time is selected for your Home Time Zone.

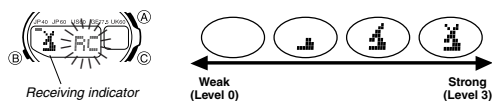
Your Home Time Zone		Auto Receive Start Times					
		1	2	3	4	5	6
UTC +0 (DST ON : UTC +1)	Standard Time	1:00 am	2:00 am	3:00 am	4:00 am	5:00 am	Midnight next day
	Daylight Saving Time	2:00 am	3:00 am	4:00 am	5:00 am	Midnight next day	1:00 am next day
UTC +1 (DST ON : UTC +2)	Standard Time	2:00 am	3:00 am	4:00 am	5:00 am	Midnight next day	1:00 am next day
	Daylight Saving Time	3:00 am	4:00 am	5:00 am	Midnight next day	1:00 am next day	2:00 am next day
UTC +2 (DST ON : UTC +3)	Standard Time	3:00 am	4:00 am	5:00 am	Midnight next day	1:00 am next day	2:00 am next day
	Daylight Saving Time	4:00 am	5:00 am	Midnight next day	1:00 am next day	2:00 am next day	3:00 am next day
UTC +8 UTC +9	Standard Time	Midnight	1:00 am	2:00 am	3:00 am	4:00 am	5:00 am
	Daylight Saving Time	Midnight	1:00 am	2:00 am	3:00 am	4:00 am	5:00 am
UTC -10 (DST ON : UTC -9)	Standard Time						
	Daylight Saving Time						
UTC -9 (DST ON : UTC -8)	Standard Time						
	Daylight Saving Time						
UTC -8 (DST ON : UTC -7)	Standard Time						
	Daylight Saving Time						
UTC -7 (DST ON : UTC -6)	Standard Time						
	Daylight Saving Time						
UTC -6 (DST ON : UTC -5)	Standard Time						
	Daylight Saving Time						
UTC -5 (DST ON : UTC -4)	Standard Time						
	Daylight Saving Time						

Note

- When a calibration time is reached, the watch will receive the calibration signal only if it is in either the Timekeeping Mode or Dual Time Mode. Reception is not performed if a calibration time is reached while you are configuring settings.
- 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 receive the signal easily.
- The watch receives the calibration signal for two to 14 minutes everyday when the time in the Timekeeping Mode reaches each of the calibration times. Avoid performing any button operation within five 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 current time 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 displayed time actually is the correct time.

About the Receiving Indicator

During signal reception, 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.



- Use the receiving indicator as a guide for checking signal strength and for finding the best location for the watch during signal receive operations.
- 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.

Transmitter Indicator



During signal reception, an indicator of the transmitter whose signal the watch is attempting to receive will flash. After signal reception is complete, the indicator of the transmitter from which the signal was received will remain on, without flashing.

- The following shows the meaning of each of the transmitter indicator names.
 - JP40: Fukushima (Japan)
 - JP60: Fukuoka/Saga (Japan)
 - US60: Fort Collins, Colorado (the United States)
 - GE77.5: Mainflingen (Germany)
 - UK60: Anthorn (England)
- The transmitter indicator turns off automatically at the start of the first auto receive operation of a new day. The time of the first auto receive operation of a new day depends on your currently selected Home Time Zone.

To perform manual receive

- Enter the Timekeeping Mode or display the last signal screen.
- Place the watch on a stable surface so its 12 o'clock side is facing towards a window.
- Hold down (C) for about two seconds until the watch beeps.
- After you release (C) the display will show the letters RC. This indicates that signal reception is in progress.
- The indicator of the transmitter whose signal the watch is attempting to receive will flash.
- Time calibration signal reception takes from two to 14 minutes. Take care that you do not press (C) or move the watch during this time.
- If the receive operation is successful, the reception date and time appear on the display. The indicator of the transmitter whose signal the watch received will also be indicated. The watch will enter the Timekeeping Mode if you press (C) or if you do not perform any button operation for about one or two minutes.
- If the current reception fails, the display shows the ERR indicator. The watch will enter the Timekeeping Mode without changing the time setting if you press (C) or if you do not perform any button operation for about one or two minutes.



Transmitter indicator

Receive successful

Receive date



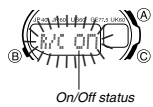
2:02

Receive failed

ERR



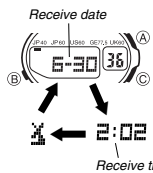
To turn auto receive on and off



On/Off status

- Press (B) to display the Last Signal screen.
- Hold down (A) so the current auto receive setting (R/C on or R/C OFF) is flashing. This is the setting screen.
 - Though illumination will also turn on when you press (A), keep the button held down until R/C on or R/C OFF flashes.
 - Note that the setting screen will not appear if the currently selected Home Time Zone is one that does not support time calibration reception.
- Press (C) to toggle auto receive on (on) and off (OFF).
- Press (A) to exit the setting screen.
 - For information about time zones that support signal receive, see "To specify your Home Time Zone".

To check the latest signal reception results



Receive time

- Press (B) to display the Last Signal screen.
- The display shows the time and date that receive was successful. -- -- indicates that none of the reception operations were successful.
 - To return to the Timekeeping Mode, press (B).

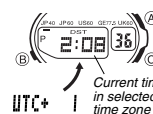
Signal Reception Troubleshooting

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

Problem	Probable Cause	What you should do
Cannot perform manual receive.	<ul style="list-style-type: none"> The watch is not in the Timekeeping Mode. Your current Home Time Zone is not one of the following: UTC +0, UTC +1, UTC +2, UTC +8, UTC +9, UTC -10, UTC -9, UTC -8, UTC -7, UTC -6, or UTC -5 (DST ON: UTC +1, UTC +2, UTC +3, UTC +9, UTC +10, UTC -9, UTC -8, UTC -7, UTC -6, UTC -5, or UTC -4) 	<ul style="list-style-type: none"> Enter the Timekeeping Mode and try again. Select UTC +0, UTC +1, UTC +2, UTC +8, UTC +9, UTC -8, UTC -7, UTC -6, or UTC -5 (DST ON: UTC +1, UTC +2, UTC +3, UTC +9, UTC +10, UTC -8, UTC -7, UTC -6, UTC -5, or UTC -4) as your Home Time Zone.
Time setting is incorrect following signal reception.	<ul style="list-style-type: none"> If the time is one hour off, the DST setting may be incorrect. The Home Time Zone setting is not correct for the area where you are using the watch. 	<ul style="list-style-type: none"> Change the DST setting to Auto DST. Select the correct Home Time Zone.

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

Dual Time



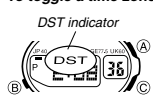
Current time in selected time zone

- The Dual Time Mode shows you the current time in 29 time zones around the world.
- If the current time shown for a time zone is wrong, check your Home Time Zone time settings and make the necessary changes.
 - All of the operations in this section are performed in the Dual Time Mode, which you enter by pressing (B).

To view the time in another Time Zone

- In the Dual Time Mode, press (C) to display the UTC differential value of the currently selected time zone for about two seconds.
- To change the UTC differential value, press (C) while a UTC differential value is on the display to scroll eastward through time zones.
 - Note that if you do not press (C) to scroll within two seconds after displaying a UTC differential value, the display will change automatically to the current time based on the currently displayed UTC differential value.
- When the UTC differential value you want is on the display, do not perform any button operation for about two seconds. This will cause the current time to appear, which will be based on the UTC differential value you selected.

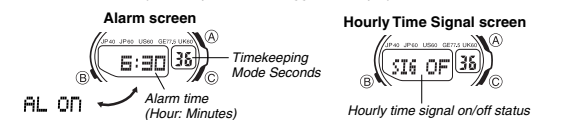
To toggle a time zone time between Standard Time and Daylight Saving Time



- In the Dual Time Mode, use (C) to display the time zone whose Standard Time/Daylight Saving Time setting you want to change.
 - Hold down (A) to toggle Daylight Saving Time (DST indicator displayed) and Standard Time (DST indicator not displayed).
- Turning on DST causes the UTC differential value to be increased by one.
 - Though illumination will also turn on when you press (A), keep the button held down until DST indicator displayed or DST indicator not displayed.
 - The DST indicator will appear whenever you display a time zone for which Daylight Saving Time is turned on.
 - Note that the DST/Standard Time setting affects only the currently displayed time zone. Other time zones are not affected.
 - Note that you cannot switch between Standard Time and Daylight Saving Time while UTC is selected as the time zone.
 - Note that you cannot use the Dual Time Mode to change the DST setting of the Home Time Zone you currently have selected in the Timekeeping Mode. See "To change the Daylight Saving Time (summer time) setting" for information about turning the Home Time Zone DST setting on and off.

Alarm

- You can set a Daily Alarm. 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.
- When you enter the Alarm Mode, the screen you were viewing when you last exited the mode appears first.
 - All of the operations in this section are performed in the Alarm Mode, which you enter by pressing (B).
 - In the Alarm Mode, you can press (C) to toggle the display contents as shown below.

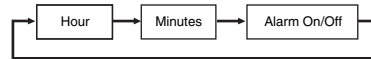


To set an alarm time, and to turn Alarm on and off



- In the Alarm Mode, use (C) to display the Alarm Screen.
- Hold down (A) until the hour setting of the alarm time starts to flash, which indicates the setting screen.
 - Though illumination will also turn on when you press (A), keep the button held down until the hour setting of the alarm time flashes.
 - This operation automatically turns on the alarm.

- Press (B) to change the flashing contents in the sequence shown below to select other settings.



- When the setting you want to change is flashing, use (C) to change it as described below.

Screen:	To do this:	Do this:
6:30	Change the hour or minutes	Use (C).
AL ON	Toggle between alarm on (AL ON), and alarm off (AL OFF)	Press (C).

- 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).
- Press (A) to exit the setting screen.

Alarm Operation

The alarm sounds at the preset time for about 10 seconds.

Note

- Pressing any button stops the alarm tone operation.

To test the alarm

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

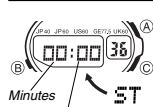
To turn the hourly time signal on and off



On/off status

- In the Alarm Mode, use (C) to display the Hourly Time Signal Screen.
- Hold down (A) until the hourly time signal on/off status starts to flash, which indicates the setting screen.
 - Though illumination will also turn on when you press (A), keep the button held down until the hourly time signal on/off status flashes.
 - This operation automatically turns on the hourly time signal.
- Press (C) to toggle it on and off.
- Press (A) to exit the setting screen.

Stopwatch

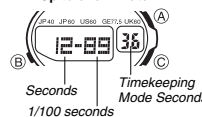


Minutes Seconds ST

- The stopwatch lets you measure elapsed time.
- The display range of the stopwatch is 59 minutes, 59.99 seconds.
 - The stopwatch continues to run, restarting from zero after it reaches its limit, until you stop it.
 - 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 (B).

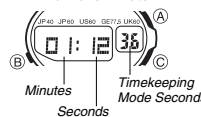
Elapsed Time Measurement

• Up to one minute



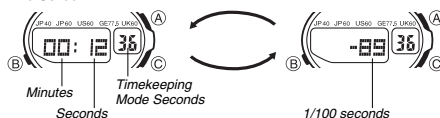
Seconds Timekeeping Mode Seconds 1/100 seconds

• From one minute



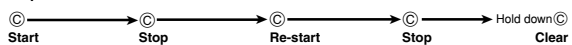
Minutes Timekeeping Mode Seconds

Elapsed Time Screen



To measure times with the stopwatch

Elapsed Time



Illumination



An LED (light-emitting diodes) illuminate the digital display for easy reading in the dark.

- See "Illumination Precautions" for other important information.

To turn on illumination

- In any mode (except when a setting screen is on the display), press (A) to illuminate the digital display.

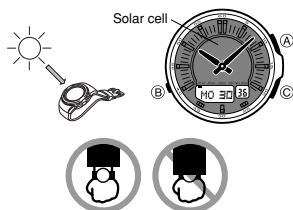
- When turning on illumination, press (A) and immediately release it. If you keep (A) held down too long, either of the operations described below will be performed.
 - If you hold down (A) while in the Timekeeping Mode, Alarm Mode, or Hand Setting Mode
 - The figures on the display will start to flash, which indicates the setting screen. If this happens, press (A) again to exit the setting screen.
 - If you hold down (A) while in the Dual Time Mode
 - The DST setting will toggle between Standard Time and Daylight Saving Time, which will affect the current time setting. If this happens, hold down (A) again to toggle setting back to its original setting (if necessary).

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.

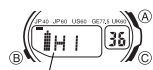


Important!

- 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

Press (B) to display the battery level indicator.



Battery level indicator

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

Level	Battery Power Indicator	Function Status
1		All functions enabled.
2		All functions enabled.
3	 (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 L Q 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 3 (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 power indicator to show a reading that is momentarily higher than the actual battery level. The correct battery power indicator should appear after a few minutes.
- The watch's Home Time Zone setting will change automatically to UTC +9 whenever the battery drops to Level 5. With this Home Time Zone setting, the watch is configured to receive the time calibration signals of Japan. If you are using the watch in North America or Europe, you will need to change the Home Time Zone setting to match your location whenever the battery drops to Level 5.
- 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 "R" 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)	30 minutes
Daylight Through a Window on a Cloudy Day (5,000 lux)	48 minutes
Indoor Fluorescent Lighting (500 lux)	8 hours

- For details about the battery operating time and daily operating conditions, see the "Power Supply" section of the Specifications.
- 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.

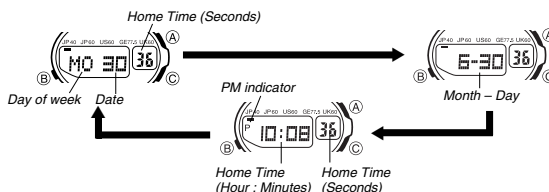
Exposure Level (Brightness)	Approximate Exposure Time			
	Level 5	Level 4	Level 3	Level 2
Outdoor Sunlight (50,000 lux)		2 hours	24 hours	6 hours
Sunlight Through a Window (10,000 lux)		7 hours	89 hours	21 hours
Daylight Through a Window on a Cloudy Day (5,000 lux)		10 hours	144 hours	33 hours
Indoor Fluorescent Lighting (500 lux)		112 hours	---	---

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

Timekeeping

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

- When setting the time, you can also configure settings for the 12/24-hour format, and you can specify the screens that are displayed in the Timekeeping Mode.
- In the Timekeeping Mode, you can press (C) to change the display contents as shown below.

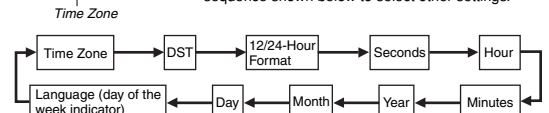


Setting the Time and Date

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

To set the time and date

- In the Timekeeping Mode, hold down (A) until the UTC differential value starts to flash, which indicates the setting screen.
- Press (B) to change the flashing contents in the sequence shown below to select other settings.



- When the setting you want to change is flashing, use (C) to change it as described below.

Screen:	To do this:	Do this:
UTC+ 9	Change the time zone	Use (C) (east).
DST A	Cycle between auto DST (A), Standard Time (S), and Daylight Saving Time (D)	Press (C).
12 H	Toggle between 12-hour (12 H) and 24-hour (24 H) timekeeping	Press (C).
36	Reset the seconds to 00	Press (C).
P 10:08	Change the hour or minutes	Use (C).
20 07	Change the year	
6-30	Change the month, or day	
MO	Toggle the language of the day of the week indicator between English and Japanese MO: 日 TU: 日 WE: 水 TH: 木 FR: 金 SA: 土 SU: 日	Press (C).

- Auto DST (A) can be selected only while UTC +0, UTC +1, UTC +2, UTC +8, UTC +9, UTC -10, UTC -9, UTC -8, UTC -7, UTC -6, or UTC -5 (DST ON: UTC +1, UTC +2, UTC +3, UTC +9, UTC +10, UTC -9, UTC -8, UTC -7, UTC -6, UTC -5, or UTC -4) is selected as the Home Time Zone. For more information, see "Daylight Saving Time (DST)" below.

- Press (A) to exit the setting screen.
- When you exit the setting screen, the analog hands are adjusted automatically to match the digital time. See "Analog Timekeeping" for more information.

Daylight Saving Time (DST)

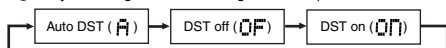
Daylight Saving Time (summer time) advances the time setting by one hour from Standard Time. Remember that not all countries or even local areas use Daylight Saving Time.

The time calibration signals transmitted from Mainflingen (Germany), Anthon (England), or Fort Collins (the United States) include 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 signals.

- The time calibration signals transmitted from Fukushima and Fukuoka/Saga (Japan) do not include summer time data.
- If you experience problems receiving the time calibration signal in your area, it probably is best to switch between Standard Time and Daylight Saving Time (summer time) manually.

To change the Daylight Saving Time (summer time) setting

- In the Timekeeping Mode, hold down (A) until the Time Zone starts to flash, which indicates the setting screen.
- Press (B) and the DST setting screen appears.
- Use (C) to cycle through the DST settings in the sequence shown below.



- When the setting you want is selected, press (A) to exit the setting screen.
- The DST indicator appears 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 Time Zone 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

- In the Timekeeping Mode, press (B) five times to enter the Hand Setting Mode.
- Hold down (A) until the current digital time starts to flash, which indicates the setting screen.
- Use (C) 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 (C).
Move the hand setting a short way forward at high speed	• Hold down (C). • Release (C) when the hands reach the setting you want.
Move the hand setting a long way forward at high speed	• While holding down (C) to move the hands at high-speed, press (B) 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.

- Press (A) 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 (B).

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
4 to 7 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.

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 the Last signal screen displayed for one or two 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 exits the setting screen automatically.

Scrolling

- (C) is used in various modes and setting screens to scroll through data. In most cases, holding down (C) during a scroll operation scrolls through the data at high speed.

Initial Screens

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

Radio-controlled Atomic Timekeeping Precautions

- Strong electrostatic charge can result in the wrong time being set.
- 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.
- 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.
- The watch is designed to update the date and day of the week automatically for the period January 1, 2000 to December 31, 2099. Setting of the date by a 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 with the precision noted in "Specifications".
- If you have problems with proper time calibration signal reception or if the time setting is wrong after signal reception, check your current time zone, DST (summer time), and auto receive settings.

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 displayed automatically 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 check it except after you have the watch's battery replaced or when battery power drops to Level 5.
- The times for the Timekeeping Mode and all the time zones of the Dual Time Mode are calculated in accordance with each time zones UTC differential.
- The UTC differential is a value that indicates the time difference between a reference point in Greenwich, England and the time zone.
- The letters "UTC" is the abbreviation for "Universal Time Coordinated", which 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.

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 PM indicator (P) 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

- Illumination may be hard to see when viewed under direct sunlight.
- Illumination turns off automatically whenever an alarm sounds.
- Frequent use of illumination runs down the battery.

Specifications

Accuracy at normal temperature: ± 20 seconds a month

Digital Timekeeping: Hour, minutes, seconds, p.m. (P), month, day, day of the week

Time system: Switchable between 12-hour and 24-hour formats

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

Other: Home time zone (can be assigned one of 29 time zones); Daylight

Saving Time (summer time)/Standard Time

Analog Timekeeping: Hour, minutes (hand moves every 10 seconds)

Time Calibration Signal Reception: Auto receive up to six times a day (remaining auto receives cancelled as soon as one is successful); Manual Receive; Last Signal screen

Receivable Time Calibration Signals: Mainflingen, Germany (Call Sign: DCF77, Frequency: 77.5 kHz); Anthon, England (Call Sign: MSF, Frequency: 60.0 kHz); Fort Collins, Colorado, the United States (Call Sign: WWVB, Frequency: 60.0 kHz); Fukushima, Japan (Call Sign: JJY, Frequency: 40.0 kHz); Fukuoka/Saga, Japan (Call Sign: JJY, Frequency: 60.0 kHz)

Dual Time: 29 time zones

Other: Standard Time/Daylight Saving Time (summer time)

Alarm: 1 daily alarm; Hourly Time Signal

Stopwatch

Measuring unit: 1/100 second

Measuring capacity: 59' 59.99"

Illumination: LED (light-emitting diode)

Other: Battery power indicator; Power Saving

Power Supply: Solar cell and a rechargeable battery

Approximate Battery Operating Time

6 months (from full charge to Level 4 when the watch is not exposed to light) under the following conditions:

- 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

Frequent use of illumination can shorten battery operating time.