- The time calibration signal the watch will attempt to pick up depends on its current Home City code setting as shown below.

Home City Code	Transmitter	Frequency
LON, PAR, BER, ATH, LIS, MAD, ROM, STO, MOW*	Anthorn (England)	60.0 kHz
	Mainflingen (Germany)	77.5 kHz
HKG, BJS	Shangqiu City (China)	68.5 kHz
TPE, SEL, TYO	Fukushima (Japan)	40.0 kHz
	Fukuoka/Saga (Japan)	60.0 kHz
HNL*, ANC*, LAX, DEN, CHI, NYC, YVR, YEA, MEX, MIA, YTO, YHZ, YYT	Fort Collins, Colorado (the United States)	60.0 kHz

* The areas covered by the **HNL**, **ANC**, and **MOW** city codes are quite far from the time calibration signal transmitters, and so certain conditions may cause problems with signal reception.
- Calibration signal reception is disabled while a countdown timer operation is in progress.
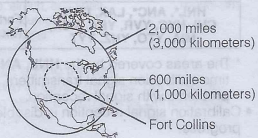
Approximate Reception Ranges

UK and German Signals

1,500 kilometers

Anthorn — Mainflingen
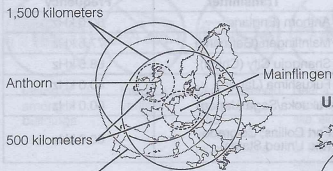
500 kilometers

The Anthorn signal is receivable within this area.

U.S. Signal

2,000 miles (3,000 kilometers)

600 miles (1,000 kilometers)

Fort Collins

Japanes

500 kilometers

Fukuoka/Saga

1,000 kilometers

Signals are rece

Japanese Signals

500 kilometers

500 kilometers

Fukuoka/Saga

Fukushima

1,000 kilometers

1,000 kilometers

Signals are receivable in the Taiwan area when reception conditions are good.

Chinese Signal

Changchun

1,500 kilometers

500 kilometers

Beijing

Shanghai

Chengdu

Shangqiu

Hong Kong
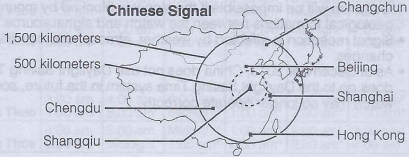
- Signal reception may not be possible at the distances that are further than those noted below during certain times of the year or day. Radio interference also may cause problems with reception.

  Mainflingen (Germany) or Anthorn (England) transmitters: 500 kilometers (310 miles)
  Fort Collins (United States) transmitter: 600 miles (1,000 miles)
  Fukushima or Fukuoka/Saga (Japan) transmitters: 500 kilometers (310 miles)
  Shangqiu (China) transmitter: 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.
- As of December 2013, China does not use Daylight Saving Time (DST). If China does go to the Daylight Saving Time system in the future, some functions of this watch may no longer operate correctly.

E-20

About Auto Re

The watch recei
times for the Ch
remaining auto
(calibration time
standard time o

	Your Hom		
LON LIS	Standard Daylight		
PAR BER MAD ROM STO	Standard Daylight		
ATH	Standard Daylight		
MOW	Standard Daylight		

About Auto Receive

The watch receives the time calibration signal automatically up to six times a day (five times for the Chinese calibration signal). When any auto receive is successful, remaining auto receive operations are not performed. The reception schedule (calibration times) depends on your currently selected Home City, and whether standard time or Daylight Saving Time is selected for your Home City.

Your Home City		Auto Receive Start Times					
		1	2	3	4	5	6
LON LIS	Standard Time	1:00 am	2:00 am	3:00 am	4:00 am	5:00 am	Midnight*
	Daylight Saving Time	2:00 am	3:00 am	4:00 am	5:00 am	Midnight*	1:00 am*
PAR BER MAD ROM STO	Standard Time	2:00 am	3:00 am	4:00 am	5:00 am	Midnight*	1:00 am*
	Daylight Saving Time	3:00 am	4:00 am	5:00 am	Midnight*	1:00 am*	2:00 am*
ATH	Standard Time	3:00 am	4:00 am	5:00 am	Midnight*	1:00 am*	2:00 am*
	Daylight Saving Time	4:00 am	5:00 am	Midnight*	1:00 am*	2:00 am*	3:00 am*
MOW	Standard Time	4:00 am	5:00 am	Midnight*	1:00 am*	2:00 am*	3:00 am*
	Daylight Saving Time	5:00 am	Midnight*	1:00 am*	2:00 am*	3:00 am*	4:00 am*

| Your Home City		Auto Receive Start Times					
		1	2	3	4	5	6
HKG BJS	Standard Time	1:00 am	2:00 am	3:00 am	4:00 am	5:00 am	
TYO TPE SEL	Standard Time	Midnight	1:00 am	2:00 am	3:00 am	4:00 am	5:00 am
HNL ANC LAX DEN CHI NYC YVR YEA MEX MIA YTO YHZ YYT	Standard Time and Daylight Saving Time	Midnight	1:00 am	2:00 am	3:00 am	4:00 am	5:00 am

*Next day

E-22

Note
- When a calibration time is reached, the watch will receive the calibration signal only if it is in either the Timekeeping Mode or World 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 a calibration time. Do not perform any button operation within 14 minutes before or after the calibration times. Doing so can interfere with correct calibration.
- Remember that reception of the calibration signal depends on the current time in your Home City, as kept in the Timekeeping Mode.

To perform manual receive

Receiving

R (READY)

W (WORK)
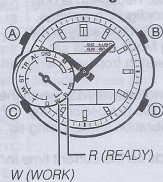
1. Place the watch on a stable surface so its 12 o'clock side is facing towards a window (page E-15).

2. In the Timekeeping Mode, hold down Ⓐ for about two seconds until the watch beeps.

3. The digital display will go blank, and the left dial hand will move to **R** (**READY**). This indicates that the watch is getting ready for time calibration signal reception.

• See the information under "Signal Reception Troubleshooting" (page E-27) if you experience problems.

• The left dial hand will move to **W** (**WORK**) and stay there while actual reception is in progress.

• If signal reception is unstable during reception, the left dial hand may move between **W** (**WORK**) and **R** (**READY**).

• The hour and minute hands continue to keep time normally.
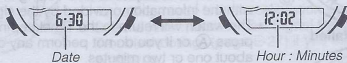
Receive successful

Receive failed

- 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.
- When a signal receive operation is successful, **GET** appears on the upper display and the lower display shows the time and date of the successful operation. The watch will adjust its time setting in accordance with the information provided by the signal.
- The watch will return to the Timekeeping Mode if you press Ⓐ or if you do not perform any operation for about one or two minutes.
- **ERR** will appear on the upper display if the receive operation is not successful. The watch will not adjust its time setting in this case. Press Ⓐ to return to the Timekeeping Mode.

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

To check the latest signal reception results
In the Timekeeping Mode, press Ⓐ to view the last successful receive time and date. Press Ⓐ again to return to the previous screen.

Date · Hour : Minutes

Signal Reception Troubleshooting

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

Problem	Probable Cause	What you should do
I can't receive a time calibration signal.	• You performed some button operation during auto receive. • The watch is not in the Timekeeping Mode or World Time Mode. • The watch is in a location where the signal cannot be received for some reason. • A countdown timer operation is in progress. • Radio interference is often present during the day time, which can interfere with signal reception.	• Perform manual receive at night or wait until the next auto receive operation is performed. • Enter the Timekeeping Mode or World Time Mode and try again. • Enter the Countdown Timer Mode and stop the countdown. (page E-36) • Check to make sure the watch is in a location where it can receive the signal (page E-15).

Problem	Probable Cause	What you should do
The 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. • The home positions of the hands are off.	• Change the DST setting to Auto DST (page E-63). • Select the correct Home City code (page E-12). • Enter the home position adjustment mode and adjust the home positions (page E-64).

• For further information, see "Important!" (page E-15) and "Radio-controlled Atomic Timekeeping Precautions" (page E-69).

Currently
World Tim

Current
World Ti

Currently selected
World Time City

Current time in
World Time City

World Time digitally displays the current time in one of 48 cities (29 time zones) around the world. A simple operation swaps your Home City with the currently selected World Time City.

- When you enter the World Time Mode, the current month and day of the World Time City appear first. After about one second, the current time appears.
- The times kept in the World Time Mode are synchronized with the time being kept in the Timekeeping Mode. If you feel that there is an error in any World Time Mode time, check to make sure you have the correct city selected as your Home City. Also check to make sure that the current time as shown in the Timekeeping Mode is correct.

- Times in the World Time Mode are based on UTC offsets. See the "City Code Table" at the back of this manual for information about the UTC offsets that are supported.
- All of the operations in this section are performed in the World Time Mode, which you enter by pressing Ⓒ (page E-9).
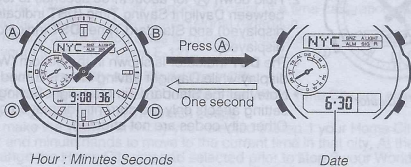
To view the current time in another time zone

In the World Time Mode, use Ⓓ to scroll through available city codes (time zones). Holding down the button scrolls at high speed.

- When the city code (time zone) you want is selected, you can press Ⓐ to display the date. After about one second, the watch will resume regular timekeeping.

Hour : Minutes Seconds

Press Ⓐ.

One second

Date

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

DST indicator

1. In the World Time Mode, press Ⓓ to display the city code (time zone) whose Standard Time/Daylight Saving Time setting you want to change.

2. Hold down Ⓐ for about three seconds to toggle between Daylight Saving Time (**DST** indicator displayed) and Standard Time (**DST** indicator not displayed).

• The **DST** indicator is shown in the bottom (World Time) display while Daylight Saving Time is turned on.

• Note that the Standard Time/Daylight Saving Time setting affects only the currently displayed city code. Other city codes are not affected.

Swapping you

You can use the changes your H Home City. This cities in differen

• If your current it your Home C
• For informatio specify your H

To swap your H

1. In the World T
2. Hold down Ⓐ
• This will make the hour and r it will change t and cause the
• After swapping Time Mode wi displayed as t

## Swapping your Home City and World Time City

You can use the procedure below to swap your Home City and World Time City. This changes your Home City to your World Time City, and your World Time City to your Home City. This capability can come in handy when you frequently travel between two cities in different time zones.

- If your current World Time City supports receipt of a time calibration signal, making it your Home City enables calibration signal reception.
- For information about which cities support time calibration signal reception, see "To specify your Home City" (page E-12).

To swap your Home City and World Time City

1. In the World Time Mode, use Ⓓ to select the World Time City you want.
2. Hold down Ⓐ and Ⓑ until the watch beeps.

- This will make the World Time City you selected in step 1 your Home City, and cause the hour and minute hands to move to the current time in that city. At the same time, it will change the Home City you had selected prior to step 2 your World Time City, and cause the content of the upper and lower displays to change accordingly.
- After swapping the Home City and World Time City, the watch stays in the World Time Mode with the city that was selected as the Home City prior to step 2 now displayed as the World Time City.
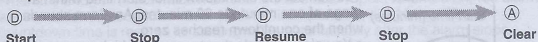
Stopwatch

Hours
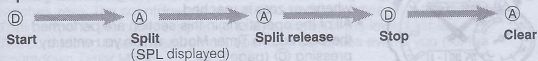
A

ØH

B

C

D

Minutes 1/100
second
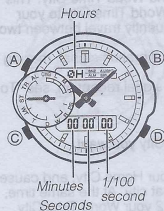
Seconds

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

- The digital 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.
- The stopwatch measurement operation continues even if you exit the Stopwatch Mode.
- Exiting the Stopwatch Mode while a split time is frozen on the display clears the split time and returns to elapsed time measurement.
- All of the operations in this section are performed in the Stopwatch Mode, which you enter by pressing ©C (page E-9).

Elapsed Time

Ⓓ	Ⓓ	Ⓓ	Ⓓ	Ⓐ
Start	Stop	Resume	Stop	Clear

Split Time

Ⓓ	Ⓐ	Ⓐ	Ⓓ	Ⓐ
Start	Split (SPL displayed)	Split release	Stop	Clear

Two Finishes

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

Countdown Timer

Auto-repeat on indicator
Start time (minutes)

Ⓐ

Ⓑ

Ⓒ

Ⓓ

Minutes
Seconds
Number of the current repeat

You can set the countdown timer start time within a range of one minute to 60 minutes. An alarm sounds when the countdown reaches zero.

- You also can select auto-repeat, which automatically restarts the countdown from the original value you set whenever zero is reached.
- All of the operations in this section are performed in the Countdown Timer Mode, which you enter by pressing Ⓒ (page E-9).

To use the cou...

Press Ⓓ while i...

- When the end o...
  will sound for 1...
  countdown tim...
- When auto-rep...
  pausing when...
  reaches zero. T...
- The number of...
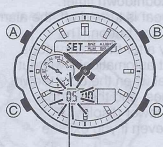- The countdow...
  Countdown Tin...
- To stop a coun...
  and then press...

To use the countdown timer

Press Ⓓ while in the Countdown Timer Mode to start the countdown timer.

- When the end of the countdown is reached and auto-repeat is turned off, the alarm will sound for 10 seconds or until you stop it by pressing any button. The countdown time is reset to its starting value automatically after the alarm stops.
- When auto-repeat is turned on, the countdown will restart automatically without pausing when it reaches zero. The alarm sounds to signal when the countdown reaches zero. The countdown is repeated up to eight times, and then stops.
- The number of the current repeat (1 to 8) is shown in the lower display.
- The countdown timer measurement operation continues even if you exit the Countdown Timer Mode.
- To stop a countdown timer operation completely, first pause it (by pressing Ⓓ), and then press Ⓐ. This returns the countdown time to its starting value.

To configure countdown start time and auto-repeat settings

1. While the countdown start time is on the display in the Countdown Timer Mode, hold down Ⓐ for about three seconds until the minute setting of the countdown start time starts to flash. This is the setting mode.
   - If the countdown start time is not displayed, use the procedure under "To use the countdown timer" (page E-37) to display it.

2. Press Ⓒ to move the flashing in the sequence shown below, and select the setting you want to change.

```
Start Time     Ⓒ      Auto-Repeat
(Minutes)   ⟷         On/Off
```
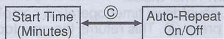
3. Perform the following operations, depending on which setting currently is selected on the display.
   - While the start time setting is flashing, use Ⓓ (+) and Ⓑ (–) to change it.
   - While the auto-repeat on/off setting (ꟷ ꟷ or ꟷ FF) is flashing on the display, press Ⓓ to toggle auto-repeat on (ꟷ ꟷ) and off (ꟷ FF).

4. Press Ⓐ to exit the setting mode.
• The auto-repeat on indicator (🔄) will appear in the upper display while this function is turned on.
• Frequent use of auto-repeat and the alarm can run down battery power.

Alarms

Alarm number
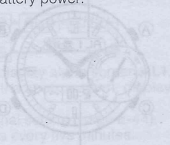
Alarm time
(Hour : Minutes)
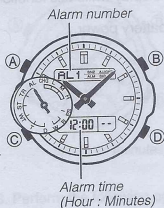
When an alarm is turned on, the alarm tone will sound when its alarm time is reached. One of the alarms is a snooze alarm, while the other four are one-time alarms. You also can turn on an Hourly Time Signal that causes the watch to beep twice every hour on the hour.

• There are five alarm screens numbered **AL1**, **AL2**, **AL3** and **AL4** for the one-time alarm, and a snooze alarm screen indicated by **SNZ**. The Hourly Time Signal screen is indicated by **SIG**.

• All of the operations in this section are performed in the Alarm Mode, which you enter by pressing Ⓒ (page E-9).

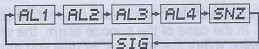**To set an alarm time**
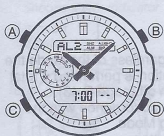
1. In the Alarm Mode, use Ⓓ to scroll through the alarm screens until the one whose time you want to set is displayed.


```
┌→ AL1 → AL2 → AL3 → AL4 → SNZ ┐
│         ┌──────┐              │
└─────────│ SIG  │──────────────┘
          └──────┘
```

- To set a one-time alarm, display alarm screen **AL1**, **AL2**, **AL3** or **AL4**. To set the snooze alarm, display the **SNZ** screen.
- **SIG** is the hourly time signal setting (page E-44).
- The snooze alarm repeats every five minutes.

2. After you select an alarm, hold down Ⓐ for about three seconds until the hour setting of the alarm time starts to flash. This is the setting mode.
- This operation turns on the alarm automatically.

3. Press Ⓒ to move the flashing between the hour and minute settings.

4. While a setting is flashing, use Ⓓ (+) and Ⓑ (−) to change it.
5. Press Ⓐ to exit the setting mode.

Alarm Operation

The alarm tone sounds at the preset time for 10 seconds, regardless of the mode the watch is in. In the case of the snooze alarm, the alarm operation is performed a total of seven times, every five minutes, or until you turn the alarm off (page E-43).

• Alarm and Hourly Time Signal operations are performed in accordance with the current time in your Home City, as kept in the Timekeeping Mode.
• To stop the alarm tone after it starts to sound, press any button.
• Performing any one of the following operations during a 5-minute interval between snooze alarms cancels the current snooze alarm operation.
  Displaying the Timekeeping Mode setting screen (page E-58)
  *Displaying the **SNZ** setting screen (page E-41)*

To turn an alarm on and off

Snooze alarm indicator

Alarm on indicator

ON

1. In the Alarm Mode, use Ⓓ to select an alarm.

2. Press Ⓐ to toggle it on and off.
   - Turning on a alarm (**AL1**, **AL2**, **AL3**, **AL4** or **SNZ**) displays the alarm on indicator on its Alarm Mode screen.
   - In all modes, the alarm on indicator is shown for any alarm that currently is turned on.
   - The alarm on indicator flashes while the alarm is sounding.
   - The snooze alarm indicator flashes while the snooze alarm is sounding and during the 5-minute intervals between alarms.

To turn the Hourly Time Signal on and off

Hourly time signal on indicator
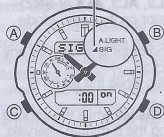
1. In the Alarm Mode, use Ⓓ to select the Hourly Time Signal (**SIG**) (page E-41).

2. Press Ⓐ to toggle it on and off.
   * The Hourly Time Signal on indicator is shown on the display in all modes while this function is turned on.

Illumination

Auto light switch on indicator

An LED (light-emitting diode) illuminates the face of the watch for easy reading in the dark. The watch's auto light switch turns on illumination automatically when you angle the watch towards your face.
- The auto light switch must be turned on (indicated by the auto light switch on indicator) for it to operate.
- See "Illumination Precautions" (page E-73) for other important information about using illumination.

To illuminate the display manually

In any mode (except a setting mode), press Ⓑ to turn on the illumination for about one second.
- The above operation turns on illumination regardless of the current auto light switch setting.

About the Auto Light Switch

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

Note that this watch features a "Full Auto LED Light", so the auto light switch operates only when available light is below a certain level. It does not illuminate the display under bright light.

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

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

Parallel to ground

More than 40°

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

To turn the auto light switch on and off

In the Timekeeping Mode, hold down Ⓑ for about three seconds to toggle the auto light switch on (auto light switch on indicator displayed) and off (auto light switch on indicator not displayed).
- The auto light switch on indicator is on the display in all modes while the auto light switch is turned on.

Power Supply

This watch is equipped with a solar panel and a special rechargeable battery (secondary battery) that is charged by the electrical power produced by the solar panel. 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 panel 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 even only partially covered.

Solar panel
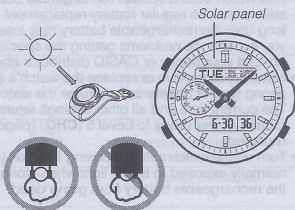
Important!

- 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 exposed to bright light whenever possible.
- This watch uses a special rechargeable battery to store power produced by the solar panel, 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 (**CHG**) (page E-51) and when you have the battery replaced.
- Turn on the watch's Power Saving function (page E-68) 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.
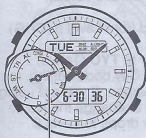
Battery Power Indicator and Power Recovery Mode indicator

The battery power indicator indicates you the current status of the rechargeable battery's power.

Battery Power indicator

Level	Battery Power Indicator	Function Status
1 (H)		All functions enabled
2 (M)		All functions enabled
3 (L)	*(Charge Soon Alert)*	Auto and manual receive, illumination, and beeper disabled
4 (CHG)		Except for timekeeping, all functions and display indicators disabled
5 (CHG)		All functions disabled

- The flashing **LOW** indicator at Level 3 (**L**) tells you that battery power is very low, and that exposure to bright light for charging is required as soon as possible.
- At Level 5 (**CHG**), all functions are disabled and settings return to their initial factory defaults. Once the battery reaches Level 2 (**M**) after falling to Level 5 (**CHG**), reconfigure the current time, date, and other settings.
- Display indicators reappear as soon as the battery is charged from Level 5 (**CHG**) to Level 2 (**M**).
- The watch's Home City code setting will change automatically to **TYO** (Tokyo) whenever the battery drops to Level 5 (**CHG**). With this Home City code setting, the watch is configured to receive the time calibration signals of Japan. If you are using the watch in North America or Europe, or China you will need to change the Home City code setting to match your location whenever the battery drops to Level 5 (**CHG**).
- Leaving the watch exposed to direct sunlight or some other very strong light source can cause the battery power indicator to show a reading temporarily that is higher than the actual battery level. The correct battery level should be indicated after a few minutes.