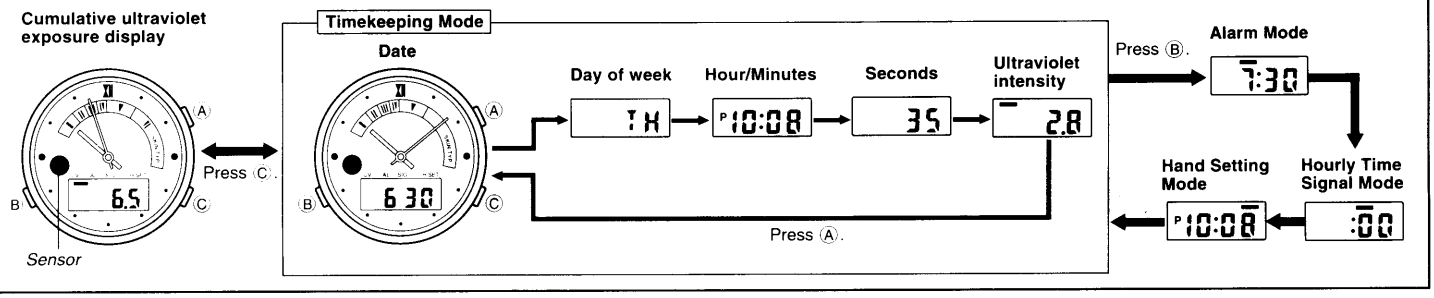
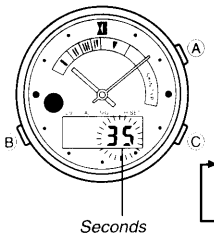
OPERATION CHART:MODULE QW-768

GENERAL GUIDE

- Press the buttons to change the mode and the contents of the digital display. See the sections explaining each function for details on display contents and operations.



SETTING THE DIGITAL TIME AND DATE



1. Hold down Ⓐ while in the Timekeeping Mode until the seconds digits start to flash on the display. The seconds digits flash because they are *selected*.
2. Press Ⓑ to change the selection in the following sequence.

Seconds → Hour → Minutes → 12/24-Hour Format → Year → Month → Date

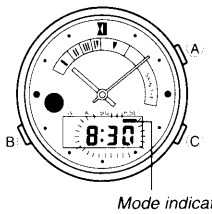
3. While the seconds digits are selected (flashing), press Ⓒ to reset the seconds to "00". If you press Ⓒ while the seconds count is in the range of 30 to 59, the seconds are reset to "00" and 1 is added to the minutes. If the seconds count is in the range of 00 to 29, the minutes count is unchanged.
4. While any other digits (besides seconds) are selected (flashing), press Ⓒ to increase the number. Holding down Ⓒ changes the current selection at high speed. While the 12/24-hour setting is selected, press Ⓒ to switch between the two formats.
5. After you set the time and date, press Ⓐ to return to the Timekeeping Mode.

- When you use the above procedure to set the time on the digital display, the hands of the analog timepiece normally adjust according to your setting. If, for any reason, the analog time does not match the digital time, use the procedure described under "Setting the Analog Time" to match the analog setting with the digital display. If the digital time and analog time settings do not match, the ultraviolet measurement function of the watch will not operate correctly.
- The day of the week is automatically set in accordance with the date.
- The date can be set within the range of January 1, 1990 to December 31, 2029.
- If you do not operate any button for a few minutes while a selection is flashing, the flashing stops and the watch goes back to the Timekeeping Mode automatically.

SETTING THE ANALOG TIME

When the time shown on the display does not match the analog setting, use the Hand Setting Mode to change the analog setting to the correct time. Note that if the digital time and analog time are not exactly the same, the watch may not operate correctly with the ultraviolet measurement funciton.

To set the analog time



1. Use Ⓑ to enter the Hand Setting Mode.
2. Hold down Ⓐ until the currently set digital time starts to flash on the display.
   - Even though the currently set digital time flashes on the display, the following steps change the analog timepiece setting without changing the digital time setting.
3. Press Ⓒ to advance the hands of the analog timepiece or Ⓑ to make them move back.
   - Holding down either button moves the hands at high speed.

- The seconds are automatically synchronized with the digital display seconds.

4. After you set the analog time, press Ⓐ to return to the Hand Setting Mode.

- If you do not operate any button for a few minutes while digits are flashing, the flashing stops and the watch goes back to the Hand Setting Mode automatically.

USING THE ULTRAVIOLET MEASUREMENT FUNCTION

The ultraviolet measurement function measures the intensity and calculates accumulated ultraviolet exposure by sensing ultraviolet light and converting the light energy into electrical energy.

There are always slight unavoidable differences in measurement results, depending on the method of measurement used, skin type, and oils applied to the skin. Use this function only as a guide to the mount of exposure to sunlight. Use the function only with natural sunlight, and never with artificial light sources, such as ultraviolet lamps.

Ultraviolet measurement precautions

THIS CASIO ULTRAVIOLET MEASURING WATCH IS FOR RECREATIONAL PURPOSES, AND NO RESPONSIBILITY IS ASSUMED FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES, INCLUDING WITHOUT LIMITATION DAMAGES OR INJURIES RESULTING FROM MATHEMATICAL OR ULTRAVIOLET MEASURMENT INACCURACY OF THE PRODUCT.

- To ensure accuracy of cumulative ultraviolet exposure calculations (indicated by the long hand), you should make sure that the digital time setting matches the analog time setting before using this function.
  See "Setting the Analog Time" for details on changing the analog setting.
- Before using this function, place the watch in direct sunlight with the sensor pointed directly at the sun for at least three minutes. Make sure that the ultraviolet intensity display reads at least 0.4.
- The level of ultraviolet exposure is different for various parts of your body. The readings produced by this watch when you are wearing it on your wrist represent the ultraviolet exposure at your wrist.
- Under conditions when there is the danger of sunburn, be especially careful that the sensor of the watch is not shaded by clothing, etc. Otherwise, incorrect ultraviolet exposure readings will be produced, which may subject you to burning.
- When determining your skin type, remember that it is always better to error on the side of safety. This means that when in doubt, you should assume a lower skin type number.
- Measurements may vary slightly depending on the position of the watch, so you should always try to face the sensor toward the sun. Remember this as the sun changes position in the sky.
  Example
  When sunbathing at the beach: according to body position.
- This function is not designed for use with artificial light sources.
- Accurate measurement is not possible if there is suntan lotion or drops of water on the glass above the sensor, or if the sensor is in a shadow.
- The ultraviolet measurement function is not intended for use as a medical instrument.

Skin Type

Basically, there are six types of skin.

Type	Description	Cumulative Exposure Limit*
I	Fairest of skin Will not tan Inflammation occurs due to sunburn	3.50 J/cm²
II	Fair skin Will tan lightly Inflammation occurs due to sunburn	5.25 J/cm²
III	Lightly colored skin Will gradually tan Inflammation does not easily occur due to sunburn	7.00 J/cm²
IV	Yellow or brown skin Tans well Little inflammation due to sunburn	8.75 J/cm²
V	Brownish skin Tans easily Almost no inflammation due to sunburn	14.00 J/cm²
VI	Brown or black skin Always tanned No inflammation due to sunburn	28.00 J/cm²

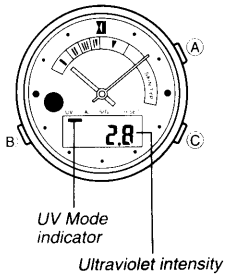
* Cumulative ultraviolet exposure level at which sun burn symptoms can be expected to appear for each skin type (unprotected). The symptoms of sunburn inflammation are a burning sensation and redness, which is later followed by blotching, freckling, wrinkling, sagging skin, etc.

- If a sun tan lotion is being used, the above skin types cannot be used to determine when sunburning occurs. The cumulative exposure limit is also affected by the SPF value and brand of sun block creams, sun block cosmetics, sun block lotions, etc.
- When determining your skin type, remember that it is always better to error on the side of safety. This means that when in doubt, you should assume a lower skin type number.
- Daily tanning may produce a change in the color of your skin, but tanning does not change your skin type. You always have the same skin type, no matter how deeply you may be tanned.

About ultraviolet intensity

Ultraviolet intensity is expressed in units of energy (milliwatts/square centimeters) per unit area (1 square centimeter) exposed to light over a unit of time (one second). Though ultraviolet intensity is expressed as a numeric value, you should not regard the values as absolute, but rather as guidelines that indicate the trend of the measurements being taken.
This watch takes an ultraviolet intensity measurement every three minutes (starting from midnight), and displays the result as a value within the range of 0 to 12 mW/cm² (using units of 0.4 mW/cm²).

Displaying the Ultraviolet Intensity Value

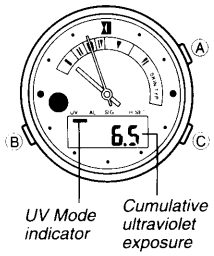


Press Ⓐ while in the Timekeeping Mode to display the ultraviolet intensity value.
- The UV Mode indicator is shown on the display while the ultraviolet intensity value is displayed.
- Remember that the currently displayed value is the result of the last measurement taken. This means that if you move from one area to another, the value on the display may not be for the area where you currently are. Wait more than three minutes for the measurement to be updated to find out the ultraviolet intensity where you currently are.
- When you want to determine the intensity at your current location, make sure that the watch is facing directly at the sun.

About cumulative ultraviolet exposure

Cumulative ultraviolet exposure is the amount of ultraviolet energy measured by the watch since the cumulative value was reset to zero (automatically at midnight or manually). It is a cumulative total of the ultraviolet intensity measurements that the watch takes every three minutes.
Cumulative ultraviolet exposure is displayed as a value within the range of 0 to 299.9 J/cm² (using units of 0.1 J/cm²). The "J" stands for a unit of measurement for energy called a "joule." When the cumulative ultraviolet exposure value is displayed, the minute (long) hand of the watch indicates up to what skin type could be expected to burn after such exposure. The minute hand moves within a range of 0 to 28 J/cm² (using units of 0.33 J/cm²). For readings greater than 28 J/cm², the minute hand indicates 28 J/cm².

Displaying the Cumulative Ultraviolet Exposure Value



Press Ⓒ while in the Timekeeping Mode to display the cumulative ultraviolet exposure value. To return the digital display to what it was showing before you displayed the cumulative ultraviolet exposure value, press Ⓒ again.
- The UV Mode indicator flashes on the display while the cumulative ultraviolet exposure value is shown.
- During the display of the cumulative ultraviolet exposure value, the minute hand indicates the skin type up to which burning could be expected after such exposure.
- The digital timepiece times the measurements used to calculate the cumulative ultraviolet exposure value. This means that the value will be affected if you change the digital time setting.

- About one minute after the cumulative ultraviolet exposure value appears on the display, the digital display automatically changes back to the data shown before you pressed Ⓒ. Also, the minute hand automatically moves back to show the current time.
- The minute hand stops if an alarm starts to sound while it is moving. It will continue moving after the alarm stops.

Clearing Cumulative Ultraviolet Exposure Data

Cumulative ultraviolet exposure data is cleared automatically each day at midnight. You can also clear data manually, by holding down Ⓐ for one or two seconds (until the watch beeps).
- Note that data is not cleared automatically if you change the time setting so that it passes midnight. For example, if you change the current time setting from 11:58 PM to 0:05 AM, the data is not cleared.

Information About Sunburn

Susceptibility to sunburn varies depending on:
1) Skin type
2) Use of tanning and sun block lotions (and their removal by sweat and water)
3) Physical condition
4) What you last ate
5) Air temperature

There are also differences in the sun protection factor (SPF) of lotions, depending on the brand. Sunburn appears 12 to 24 hours after exposure as a change in skin color. Even if there is no sunburn, there will still be a slight change in skin color. Skin that has not recently been exposed to the sun at all has little resistance to ultraviolet rays. Briefly exposing such skin to weak ultraviolet rays on a daily basis can increase resistance.

About SPF values and the cumulative exposure limit

You can calculate the point when burning starts by multiplying the cumulative exposure limit by the SPF value noted on sun block lotions, cosmetics, etc.
Example: When a person with Skin Type III uses cosmetics with an SPF value of 2.
Cumulative exposure limit for Skin Type III = 7 (J/cm²)
7 × 2 = 14 (J/cm²)

Important!
Remember that the value produced by the above calculation is meant as a general reference only.

SPF Value Equivalency Table

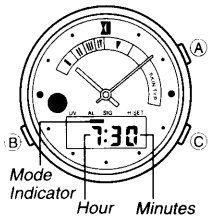
SPF \ Skin Type	I	II	III	IV	V	VI
Unprotected	3.50	5.25	7.00	8.75	14.00	28.00
2	7.00	10.50	14.00	17.50	28.00	58.00
6	21.00	31.50	42.00	52.50	84.00	168.00
12	42.00	63.00	84.00	105.00	168.00	299.9
20	70.00	105.00	140.00	175.00	280.00	299.9
30	105.00	157.50	210.00	262.50	299.9	299.9

* For SPF values not specifically included in the table, use the calculation described above.
* This watch displays 299.9 for the shaded values in the above table.

ALARM FUNCTION

When the Daily Alarm is switched on, the alarm sounds for 20 seconds at the preset time each day. Press any button to stop the alarm after it starts to sound.
Note that the Daily Alarm and the Hourly Time Signal operate based on the digital time setting.

To set the alarm time



1. Hold down Ⓐ while in the Alarm Mode until the hour digits start to flash on the display. The hour digits flash because they are *selected*.
- This operation will switch the Daily Alarm on automatically.
2. Press Ⓑ to change the selection in the following sequence.

Hour ⟷ Minutes

3. Press Ⓒ to increase the selected digits. Holding down Ⓒ increases the selection at high speed.
- The format (12-hour and 24-hour) of the alarm time matches the format you select for normal timekeeping.
- When setting the alarm time using the 12-hour format, take care to set the time correctly as morning or afternoon (P).
4. After you set the alarm time, press Ⓐ to return to the Alarm Mode.
- If you do not operate any button for a few minutes while a selection is flashing, the flashing stops and the watch goes back to the Alarm Mode automatically.

To switch the Daily Alarm on and off

While in the Alarm Mode, press Ⓒ to switch the Daily Alarm on and off.

ON ⟷ OFF



To stop the alarm

Press Ⓐ, Ⓑ, or Ⓒ to stop the alarm after it starts to sound.

To test the alarm

In the any mode, hold down Ⓑ to sound the alarm.

To change the alarm tone

While holding down Ⓑ to sound the alarm, press Ⓒ to change the alarm sound to any one of the four available tones. Each time you press Ⓒ, the alarm sound changes to a different tone. The tone produced the last time you press Ⓒ is the one used for the alarm.

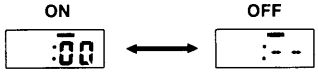
HOURLY TIME SIGNAL FUNCTION

When the Hourly Time Signal is switched on, the watch beeps every hour on the hour.

To switch the Hourly Time Signal on and off

While in the Hourly Time Signal Mode, press Ⓒ to switch the Hourly Time Signal on and off.

ON ⟷ OFF



ELAPSED TIME BEZEL

Some models are equipped with Elapsed Time Bezels. You can use an Elapsed Time Bezel to keep track of elapsed time. Rotate the bezel so that the ▼ mark is aligned with the minute hand. Then you can tell how much time has elapsed as the minute hand moves.

