LIGHT（Button A）——— 〔image of watch〕 ——— （Button D）ST/STP

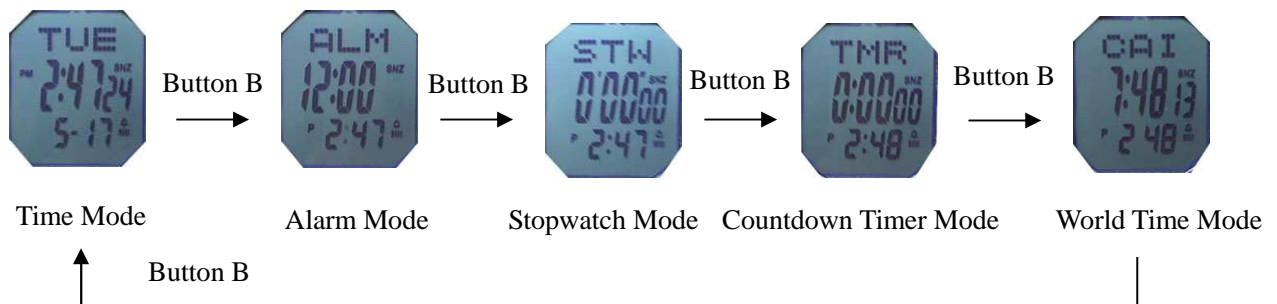MODE（Button B）——— ——— （Button C）RESET/RCC

A . Features

- 13 digits LCD screen displays hour, minute, second, year(from year 2000 to year 2099), day of the week..
- Alarm, Snooze and Hourly Time Signal.
- 12-hour / 24-hour format.
- Stopwatch: 23hours,59minutes,59.99seconds. Auto cycle timekeeping.
- Countdown timer: (the maximum display range of countdown timer is 23hours,59minutes,59seconds)
- World time: to display 25 cities and daylight saving time (DST).
- Radio-controlled signal receiving: 77.5KHz（DCF）.
- Automatically receive the signal and manually receive the signal.
- EL backlight.
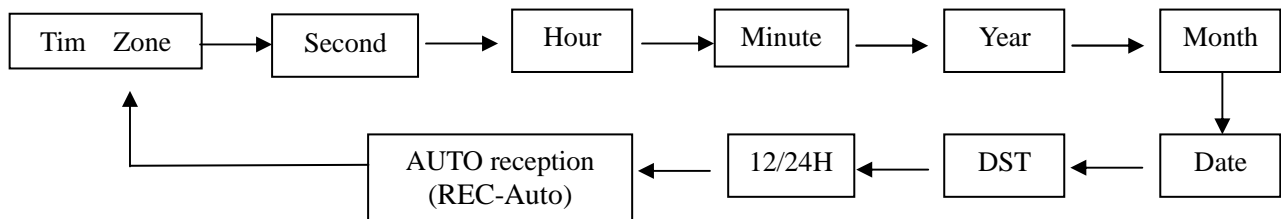
B . Product Functional Modes

Time Mode → Button B → Alarm Mode → Button B → Stopwatch Mode → Button B → Countdown Timer Mode → Button B → World Time Mode

Button B

1. In any mode, El will illuminates for 3 seconds by pressing A button. Press B button to select operational mode.

2. Timekeeping mode

- In timekeeping mode, press D button to display Year – Month – Day of the week, then press D button again to return to time mode or automatically return to time mode without pressing any button in 5 seconds.
- Press C button to check whether the signal is received or not, Signal reception is successful if 'GET'displays on the screen, while signal reception is fail if 'ERR' displays on the screen.

3. Time setting

➢ In Timekeeping Mode, hold down A button for 2 seconds, "time zone" will start to flash after 'ADJ' flashes for 2 seconds, which indicates time setting screen, then press B button to select other setting items (flash) in sequence as below:

```
┌──────────┐     ┌────────┐     ┌────────┐     ┌────────┐     ┌────────┐     ┌────────┐
│ Tim  Zone│ ──▶ │ Second │ ──▶ │  Hour  │ ──▶ │ Minute │ ──▶ │  Year  │ ──▶ │ Month  │
└──────────┘     └────────┘     └────────┘     └────────┘     └────────┘     └────────┘
     ▲                                                                             │
     │           ┌──────────────────┐   ┌────────┐   ┌────────┐   ┌────────┐       │
     └────────── │  AUTO reception  │◀─ │ 12/24H │◀─ │  DST   │◀─ │  Date  │◀──────┘
                 │   (REC-Auto)     │   └────────┘   └────────┘   └────────┘
                 └──────────────────┘
```
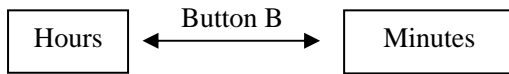
➢ Press D button to increase the values, hold down D button to increase the values at a high speed.

➢ Press C button to decrease the values, hold down C button to decrease the values at a high speed.

➢ Seconds reset to zero by pressing D or C button. Minutes will be increased by 1 automatically if seconds is in the range of 30 to 59, while minutes without changing if seconds in the range of 0 to 29.

➢ To adjust 'DST': Press D or C button to select among the state of AUTO/OF/ON. Indicator of 'DST' appears on the screen when ON is selected, which shows 'DST' has been turned on. There is no indicator of 'DST' appears on the screen when OF is selected, which shows 'DST' has been turned off. And also no indicator of 'DST' displays on the screen when AUTO is selected, which means the watch automatically adjusts the daylight saving time with signal.

➢ Press D or C button to select the format between 12-hour and 24-hour.

➢ To turn on / off Auto. Reception(REC-Auto): Press D or C button to select the state between OF/ON. Auto. Reception is turned on if ON is selected, while Auto. Reception is turned off if OFF is selected (signal won't be automatically received at every morning if in this state).

➢ Press A button to confirm, then exit from setting and return to Timekeeping Mode

➢ In setting mode, if you do not perform any button within a minute, the watch will automatically exit from setting and return to Timekeeping Mode.

4.To turn on / off alarm

➢ In alarm mode, press C button to turn on / off Hourly Time Signal, indicator of Hourly Time Signal "🔔" appears on the screen shows it has been turned on. On the contrary, it has been turned off.

➢ Press D button to turn on / off Alarm and Snooze: Indicator of Alarm ' ||| ' appears on the screen shows it has been turned on. On the contrary, it has been turned off. Indicators of Alarm ' ||| ' and 'SNZ' appear on the screen shows both Alarm and Snooze have been turned on.

➢ When alarm is turned on, and the alarm time is reached, the alarm tone will sound with BB-BB for 20 seconds, and alarm indicator ' ||| ' will flash to display on the screen. Press any button to stop the alarm tone after it starts to sound.

➢ If snooze is turned on, snooze indicator 'SNZ' will flash continuously. Snooze tone will sound every 5 minutes, and sound for 5 times in total under the situation of no buttons operation.

➢ In the state of snooze, 'SNZ' will flash continuously, press D to stop flashing, which indicates Snooze function is off.
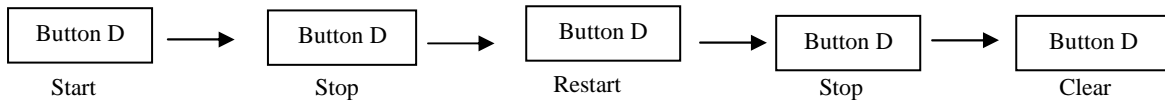
5. To set alarm time

➢ In alarm mode, hold down A button for some time, "Hours" will start to flash after "ADJ" flashes for 2 seconds, which indicates alarm time setting, then press B button, "minutes" will flash as below:

```
┌─────────┐   Button B    ┌─────────┐
│  Hours  │◄────────────►│ Minutes │
└─────────┘               └─────────┘
```

➢ Press D button to increase the values, hold down D button to fast increase the values.
➢ Press C button to decrease the values, hold down C button to fast decrease the values.
➢ Press A button to confirm, then exit from setting and return to Alarm Mode.
➢ In setting mode, if you do not perform any button within a minute, the watch will automatically exit from setting and return to Alarm Mode.
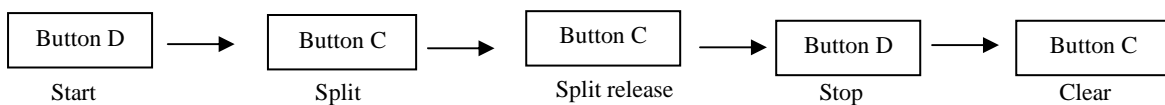
6. Stopwatch

➢ The maximum display range of stopwatch is 23 hours, 59 minutes, 59.99 seconds. Stopwatch will restart to count from "0" when reaches its maximum limit.
➢ 1/100 seconds can able be displayed when second is within 30 minutes, on the contrary, it won't display if second exceeds 30 minutes.
➢ To measure times with stopwatch: In stopwatch mode, press D button once to start counting, press D button once again to stop counting. Seconds reset to zero by pressing C button when stopwatch is stopped.
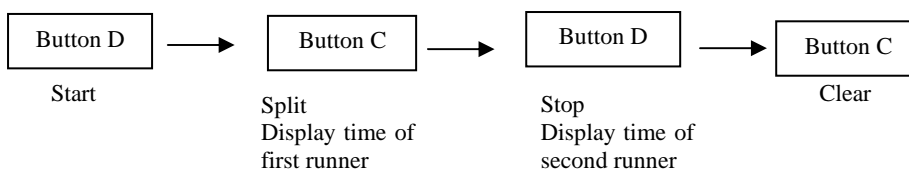
```
┌──────────┐    ┌──────────┐    ┌──────────┐    ┌──────────┐    ┌──────────┐
│ Button D │──► │ Button D │──► │ Button D │──► │ Button D │──► │ Button D │
└──────────┘    └──────────┘    └──────────┘    └──────────┘    └──────────┘
   Start           Stop           Restart          Stop            Clear
```

➢ To measure times with SPL(split time):In Stopwatch Mode, press D button once to start counting , press C button to enter split time, it displays the previous time, then press C again to exit from split time. Press D to stop counting and display the total time. Seconds resets to zero by pressing C.
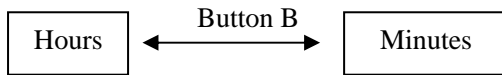
Split Time:

```
┌──────────┐    ┌──────────┐    ┌──────────┐    ┌──────────┐    ┌──────────┐
│ Button D │──► │ Button C │──► │ Button C │──► │ Button D │──► │ Button C │
└──────────┘    └──────────┘    └──────────┘    └──────────┘    └──────────┘
   Start           Split        Split release       Stop            Clear
```

Two Finishes

```
┌──────────┐    ┌──────────┐    ┌──────────┐    ┌──────────┐
│ Button D │──► │ Button C │──► │ Button D │──► │ Button C │
└──────────┘    └──────────┘    └──────────┘    └──────────┘
   Start           Split           Stop            Clear
              Display time of   Display time of
              first runner      second runner
```

➢ When stopwatch is counting, press B button to return to other display modes, stopwatch will continue to work at the background.

7. Countdown timer

➢ The display range of countdown time is 23 hours, 59 minutes, 59 seconds.

➢ In countdown timer mode, press D button to start / stop counting down, when countdown time reaches 00, the watch will sound with BB-BB for 20 seconds. Press any button to stop countdown timer tone after it starts to sound.

➢ When countdown timer is stopped, countdown time will automatically return to the initial setting counts by pressing C button.

➢ When countdown timer is stopped, if you do not perform any button within 60 seconds, the watch will automatically exit from Countdown Timer Mode, and then return to Timekeeping Mode.

➢ **To set countdown timer:** In countdown timer mode, hold down A button for 2 seconds, "Hours" will start to flash after "ADJ" flashes for 2 seconds, which indicates countdown timer setting, then press B button, "minutes" will flash as below:

```
                 Button B
┌─────────┐   ◄─────────►   ┌─────────┐
│  Hours  │                 │ Minutes │
└─────────┘                 └─────────┘
```

➢ Press D button to increase the values, hold down D button to fast increase the values,.

➢ Press C button to decrease the values, hold down C button to fast decrease the values,.

➢ Press A button to confirm, then exit from setting and return to Countdown Timer Mode.

➢ In setting mode, if you do not perform any button within a minute, the watch will automatically exit from setting and return to Countdown Timer Mode.

8. World time mode

➢ In world time mode, press D button to view the corresponding time of 24 time zones.

➢ Press C button to turn on / off daylight saving time, "DST" indicator will display on the screen when it is turned on, but if it is turned off, "DST" indicator will not appear on the screen.

➢ In world time mode, if you do not perform any button within 60 seconds, the watch will automatically exit from world time mode, and then return to normal time mode.

Attached: City Code Table

City code	City	GMT Differential	Other major cities in same time zone
MDY	Midway	-11	
HNL	Honolulu	-10	
ANC	Anchorage	-9	WWVB
LAX	Los Angeles	-8	WWVB
DEN	Denver	-7	WWVB
CHI	Chicago	-6	WWVB
NYC	New York	-5	WWVB
CCS	Caracas	-4	
RIO	Rio De Janeiro	-3	
REC	Recife	-2	
AZO	Azores	-1	
LON	London	0	msf-dcf
PAR	Paris	+1	dcf-msf
CAI	Cairo	+2	dcf
MOW	Moscow	+3	
DXB	Dubai	+4	
KHI	Karachi	+5	
DAC	Dacca	+6	
BKK	Bangkok	+7	
BJS	Beijing	+8	Jpn60
TYO	Tokyo	+9	Jpn60-jpn40
SEL	Seoul	+9	
SYD	Sydney	+10	
NOU	Noumea	+11	
AKL	Auckland	+12	

9. To receive RCC manually

➢ In Timekeeping Mode, hold down C button for 3 seconds to receive time signal manually, receiving indicator（ 📡 ）starts to flash. Signal strength indicator （📶） appears if the signal is strong. If signal reception is successful, there will display receiving indicator, otherwise, it will not display.

➢ If signal is weak or no signal, it will stop receiving automatically in 10 minutes.

➢ When the watch is receiving the calibration signal, hold down C button for 3 seconds to exit signal reception mode, then return to time mode.

➢ The watch first tries to pick up the signal it lasts successfully received (40 KHz or 60 KHz). If that fails, it automatically tries the another signal (40 KHz or 60 KHz) .

Note: When you hold down C button for some time, if the indicator of 'ERR' displays on the screen that means mistake occurred. At this time, please enter into setting mode to adjust the time zone to be 'LON', 'PAR', 'CAI'. After exiting the setting mode, the watch will enter into 'REC' signal receiving mode by holding down C button again for some time.

10. To receive RCC automatically

➢ The movement will turn on frequency (40 kHz or 60 kHz) automatically to receive calibration signal at 3:00 a.m. everyday, if failed to receive, frequency will be turned on automatically to receive calibration signal at 4:00 a.m. again, if failed, it will be turned on automatically to receive radio signal at 5:00 again, and if failed again, it will stop receiving on that day, and will not start to receive until the next day at 3:00 a.m.. If received successfully at 3:00 a.m., it will not receive at 4:00 a.m. and 5:00 a.m.

➢ The watch first tries to pick up the signal it lasts successfully received (40 KHz or 60 KHz). If that fails, it automatically tries the another signal.

➢ When the watch is receiving the calibration signal, receiving indicator (👤) on the screen will flash. If there comes with signal, the signal strength indicator （ 📶 ） will appear. But if signal reception is unsuccessful, the receiving indicator will not display on the screen.

➢ **Signal reception indicator**

No signal (receiving indicator will flash)	👤
Signal is too weak (receiving indicator will flash)	📶
Signal is a little weak (receiving indicator will flash)	📶
Signal is good (receiving indicator will flash)	📶
Signal reception is successful(receiving indicator will not flash))	（ 📶 📶📶 ）
Signal reception is unsuccessful(receiving indicator will not flash))	👤

C. Important!

1. If the frequency is turned on to automatically receive calibration signal, the default time to receive the time signal is 3:00 a.m.

2. When radio-controlled signal is turned on, the watch will automatically receive signal every 24 hours, which is used for calibrating the time.

3. Time calibration signal reception takes five or ten minutes, if reception is unsuccessful within 10 minutes, the watch will automatically stop receiving.

4. To make sure better signal, we advise to place your watch near the window when receiving

5. In order to save the battery power and prolong the battery life, please turn off auto reception when the watch does not need the signal to calibrate the time.

6. In Timekeeping Setting Mode, time signal cannot be received if the time zones selected that does not support time calibration reception. To hold down C button for some time, if the indicator of 'ERR' displays on the screen that means mistake occurred. At this time, if you want to make the watch receives the time signal, please enter into Timekeeping Setting Mode to adjust the time zone to be 'LON', 'PAR', 'CAI'. After exiting the setting mode, the watch will enter into 'REC' signal receiving mode by holding down C button again for some time.

7. The time signal reception will be automatically turned off if it fails to receive within 7 days It will not be turned on until entering time setting to perform auto signal receive or manual signal receive.

8. In setting, stopwatch, and countdown timer modes, the watch cannot perform auto signal receive and manual signal receive

9. The time signal reception will be automatically turned on after power-on or resetting.

10. Instruction of Receiving Indicator

➢ After the time calibration signal reception is successful, the receiving indicator will display in the time zones where the signal can be receivable. While in other time zones, it won't display.

➢ After the time calibration signal reception is successful, the receiving indicator will display on the screen over on the right, it can continuously display on the screen for 24 hours.

➢ After the time calibration signal reception is successful, the receiving indicator will automatically disappear when you set any setting item among hour, minute, second, year, month, or date.

D. Specifications

➢ Module dimension ： Φ 27.2mm
➢ Module thickness (buzzer inclusive) ： 8.50mm
➢ Working temperature range ： -10℃~+60℃
➢ Working voltage ： 3.0V
➢ Battery code and capacity ： CR1632(Capacity:125m Ah)
➢ Time accuracy ： ±30 sec/month
➢ Static average driving current ： ≤3.29u A (Static maximum driving current: 4.5 u A)
➢ Alarm average driving current ： ≤2.37m A (Alarm maximum driving current: 7.0 m A)
➢ Average current of EL backlight ： ≤7.96m A (Maximum current of EL backlight: 10m A)
➢ Average current of RCC reception ： ≤47.67 u A (Maximum current of RCC reception: 80.0u A)
➢ Sensitivity of RCC reception(only movement)： ≤52dbuv/m
➢ Battery life ： ≥24 months (Japan battery)

According these standards to calculate battery life: EL backlight illuminates 4 times (12 seconds) per day. Alarm tone sounds once (60 seconds) per day. RCC reception once (5 minutes) per day.

	Prepared	Checked	Approved
Name	李觉		宋检望
Date	13/04/23	13/04/23	13/04/23