

## YSZ-4 Four electronic clock instruction

YSZ-4 four electronic clock, it takes AT89C2051 as its core, a total of 16 electronic components to come true the two channels of the alarm clock, (8:00-20:00) on time alarm, accurate adjustment, and other functions.

### 1> Rationale

The whole system by MCU minimum system, key input circuit, display circuit, buzzer circuit and power supply parts.

1. MCU minimum system: including the U1 (AT89C2051), C1, R1 for power on reset circuit. Clock circuit is composed of C2, C3 and Y1.

2. The pressed key input circuit is composed of S1, S2, short press the button once a loud buzzer rang, long press the button once two loud buzzer rang.

3. The display circuit is 4bits common cathode and on PR1 Resistors Packs.

4. Buzzer circuit is composed of Q1, R2 and LS1, short press the button once a loud buzzer rang, long press the button once two loud buzzer rang.

5. J1 is 5v power supply input terminal, C4 filtering.

### 2> Operation instruction

It will display 12:59 when Power-on while is normal interface("hours:minutes"). The both channels of alarm clock are opened. At the same time, the first alarm clock has been set at 13:01. the second alarm clock has been set at 13:02.

After power on, short press S2. The display of digital tube will switch between "hours:minutes" and "minutes:seconds"; Long press S1 to enter the system Settings menu. there are A, B, C, D, E, F, G, H, I submenu. Short press S1 submenu plus increase by degrees, finally back to the normal interface

#### A Sub menu : Correction for hours

Display data will add 1 after press S2. after adjusted the A Submenu, then short press S2 to save adjustment and quit A submenu, enter B submenu

#### B Sub menu : Correction for minutes

Display data will add 1 after press S2. after adjusted the B Submenu, then short press S2 to save adjustment and quit B submenu, enter C submenu

#### C Sub menu: on time alarm switch

The default state is ON (on-time-alarm is open from 8:00 to 20:00)

It will switch between ON and OFF (on-time-alarm is closed) when press S2. Short press S2 to save adjustment and quit C submenu, enter D submenu

#### D Submenu: The first alarm-clock switch

The default state is ON (the first alarm-clock is opened)

It will switch between ON and OFF (first-alarm-clock is closed) when press S2

If set to ON, short press S1 to save and quit then enter E submenu;

If set to OFF, short press S1 to save and quit then enter G submenu;

**E Sub menu:The first alarm clock set for hours**

Display data will add 1 after press S2.after adjusted the E Submenu,then short press S2 to save adjuston and quit E submenu,enter F sbumenu

**F Sub menu:The first alarm clock set for minutes**

Display data will add 1 after press S2.after adjusted the F Submenu,then short press S2 to save adjuston and quit F submenu,enter G sbumenu

**G Submenu:The Second alarm-clock switch**

The default state is ON (the second alarm-clock is opened)

It will switch between ON and OFF(second-alarm-clock is closed) when press S2 °

If set to ON, short press S1 to save and quit then enter H submenu;

If set to OFF, short press S1 to save and quit then enter normal interface;

**H Sub menu:The second alarm clock set for hours**

Display data will add 1 after press S2.after adjusted the F Submenu,then short press S2 to save adjuston and quit H submenu,enter I sbumenu

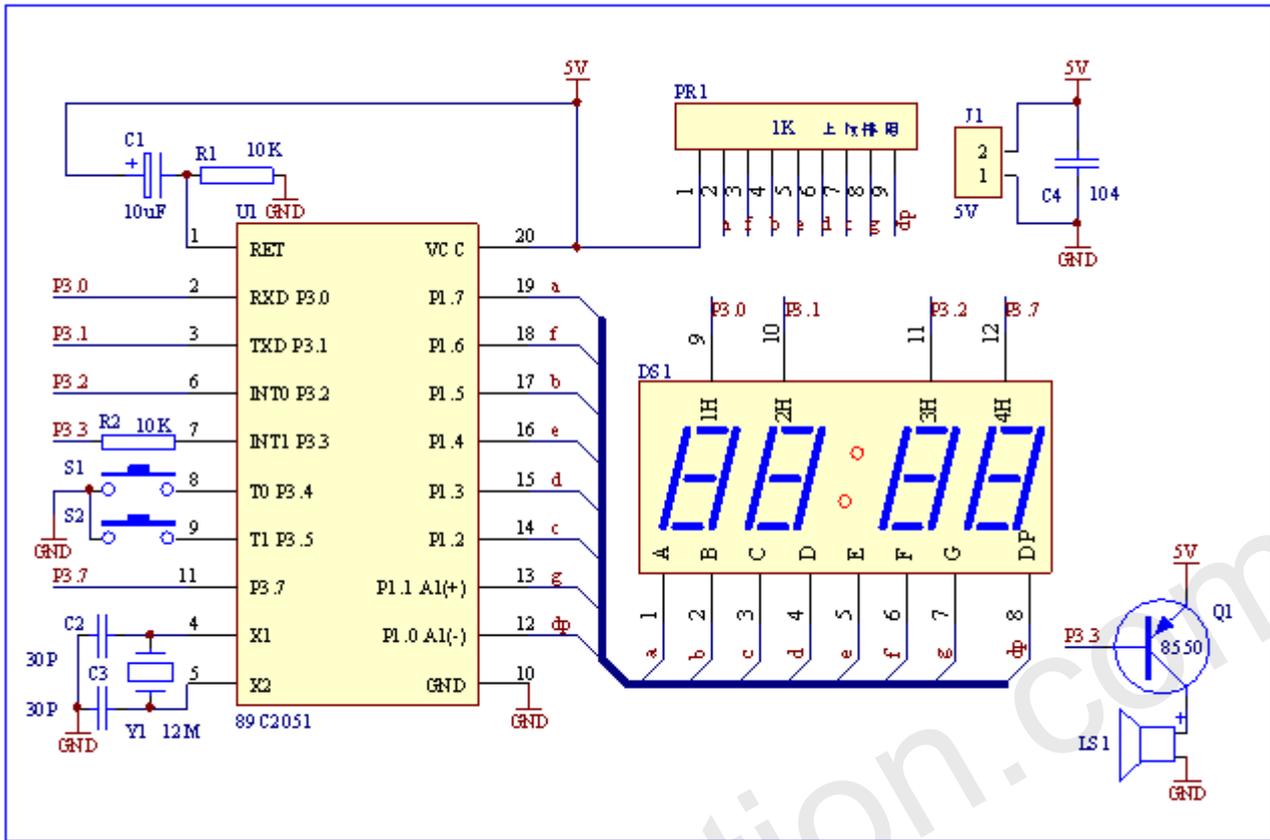
**I Sub menu:The second alarm clock set for hours**

Display data will add 1 after press S2.after adjusted the I Submenu,then short press S2 to save adjuston and quit H submenu, then enter normal interface.

**Second correction:**

Short press S2 in the normal interface,then enter "minutes : seconds" interface .Long press S2,make the second zero.Then short press S2 twice enter normal interface

**3>Schematic circuit diagram**



Note: there is direction for PR1 Resisters Packs , there is one side of the word in the direction of the MUC.Pay an attention!!!

#### 4>Component list

num ber	NEME	Type/Specif ication	Identifier	num ber	NEME	Type/Specificatio n	Identifier
01	Resistanc e	10K	R1	10	<b>Tact switch</b>	6*6*5	S1
02		10K	R2	11		6*6*5	S2
03	Capacita nce	30P	C2	12	IC Socket	20PIN	U1
04		30P	C3	13	MCU	AT89C2051	U1
05		104P	C4	14	Buzzer	5V active	LS1
06		10uF/25V	C1	15	Digital tube	4Bit red	DS1
07	Resistanc e Packs	1K	PR1	16	DC socket	3.5mm	J1
08	Crystal Oscillato r	12MHz	Y1	17	PCB	52*42mm	1
09	Transiste r	8550	Q1	18	Power Line	USB to 3.5mm	1