

C51 4 Bits Electronic Clock DIY Kit – VNGARD920198



General Description

AT89C2051 and 15 more electronic components are soldered, on PCB, for assembly of clock with two channels of the alarm, time chime (only between 08:00-20:00), accurate time adjustment and some other functions.

The whole system composed of key input circuit, display circuit, buzzer circuit and power supply parts.

The main System includes the U1 (AT89C2051), C1, and R1 for time display and "power on" setting circuit.

The Clock circuit is composed of C2, C3 and Y1.

The tactile switches S1 and S2 key the input circuit.

The display circuit include 4 bits common cathode and PR1 Resistors Packs.

The buzzer circuit composed of Q1, R2 and LS1. Momentary press either buttons once and loud buzzer will sound.

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

Read instructions before first Power On. Operating

instructions

On each Power-On (connection to 5 Volts source) you will see a regular display ("hours:minutes") and it will be 12:59.



After a minute, the display will show 13:00 and you will hear series of beeps to tell you that time setting is required.

Later on, if you did not set the time, you will hear a series of beeps on the second and third change of minutes, as a reminder of the time setup, but it stop after that.

The Chime and both Alarm Clock channels are open (ON). At the same time, the first alarm clock has been set at 13:01, and the second alarm clock has been set at 13:02.

Momentary press S2, after power on, the digital display will switch between "hours:minutes" and "minutes:seconds".

Long press on S1 will enter the system settings menu to A, B, C, D, E, F, G, H, I submenus.

Momentary press of S1 will change the submenus, step by steps according the alphabetic order, and finally bring you back to the normal H:M display.



A Submenu: Setup hours



Each momentary pressing of S2 will increase the display by 1 (hour). After setting the hours, then momentary press S1 to save the adjustment and enter submenu B. **B Sub menu**

(Display like 8): Setup minutes



Each momentary pressing of S2 will increase the display by 1 (minute). After setting the minutes, then momentary press S1 to save the adjustment and enter submenu C. **C Sub menu: Chime (on the hour alarm) switch**



The default state is ON (Note: Chime alarm is functioning only between 8:00 to 20:00)
Momentary pressing of S2 will switch between ON (Chime is active) and OFF (Chime is closed).

Momentary press S1 to save adjustment, quit C submenu, and enter submenu D. **D (Display like 0) Submenu: The first alarm-clock switch**



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

Pressing S2 will switch between ON and OFF (first-alarm-clock is closed).



If set to ON, momentary press S1 to save, quit and then enter submenu E.

If set to OFF, momentary press S1 to save, quit and then enter submenu G. **E**

Sub menu: The first alarm clock set for hours



Pressing S2 will increase the display by 1 hour. After setting the Alarm hours, momentary press S1 to save adjustment, quit and enter submenu F. **F Sub menu: The first alarm clock set for minutes**



Pressing S2 will increase the display by 1 minute. After setting the Alarm minutes, momentary press S1 to save adjustment, quit and enter submenu G.

G Submenu: The Second alarm-clock switch



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

Pressing S2 will switch between ON and OFF (second-alarm-clock is closed)



If set to ON, momentary press S1 to save, quit and then enter submenu H.

If set to OFF, momentary press S1 to save, quit and then you will be in normal interface; **H**

Sub menu: The second alarm clock set for hours



Pressing S2 will increase the display by 1 hour. After setting the Alarm hours, momentary press S1 to save adjustment, quit and enter submenu I. **I Sub menu: The second alarm**

clock set for minutes

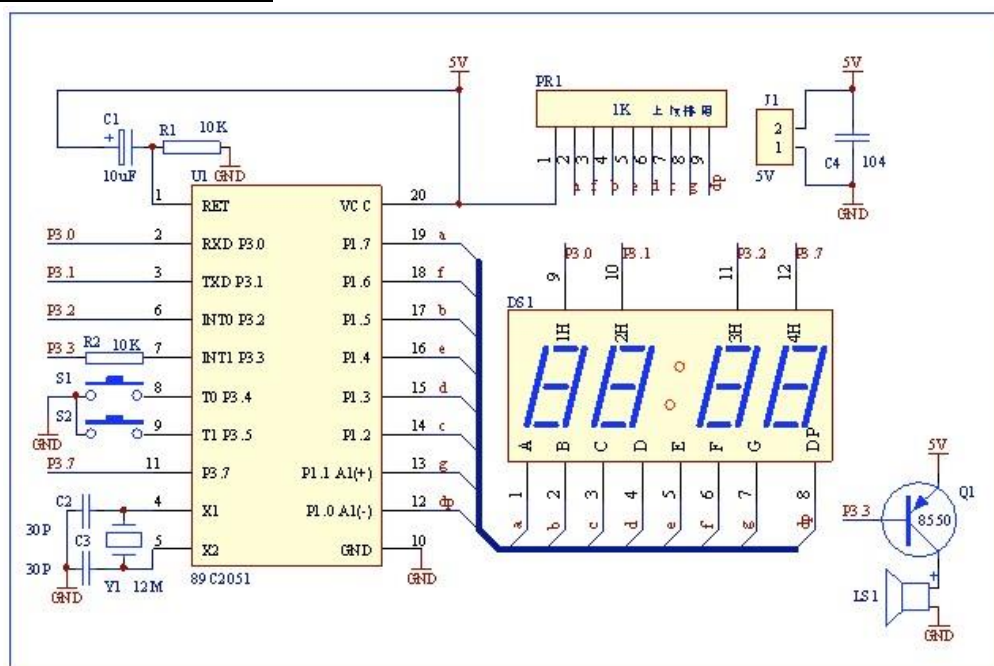


Pressing S2 will increase the display by 1 minute. After setting the Alarm minutes, momentary press S1 to save adjustment, quit and enter the normal display. **Seconds (time) reset:**



Momentary press S2 in the normal interface, to enter "minutes:seconds" interface .Long press, on S2, set the second to zero. Then momentary press S2 again to enter normal interface

Schematic circuit diagram



Note: there is direction for PR1 Resistors-Pack; there is one side of the word in the direction of the IC. Pay attention!!!

Parts List

No.	Type	Value	Designation	No.	Type	Value	Designation
1	Resistor	10K	R1	10	Tact Switch	6*6*5	S1
2	Resistor	10K	R2	11	Tact Switch	6*6*5	S2
3	Capacitor	30P	C2	12	IC Socket	20PIN	U1

4	Capacitor	30P	C3	13	IC	AT89C2051	U1
5	Capacitor	104P	C4	14	Buzzer	5V oper. voltage	LS1
6	Capacitor	10uF, 25V	C1	15	Digital Display	4Bit Red	DS1
7	Resistors Pack	10 x 1K	PR1	16	DC Socket	3.5mm	J1
8	Crystal	12MHz	Y1	17	PCB	52*42mm	
9	Transistor	8550	Q1				