POWER_SUPPLY

VBAT

SW1

U1
LT1117-5.0

IN OUT
GND

5V

U3
LT1117-3.3

IN OUT
GND

3.3V

CN1
Alkaline
9V
550mAh

C2
10uF x 16V

C3
10uF x 16V

MICROCONTROLLER

3.3V

U6
ATMEGA328P-AU

4*2	VCC	PB0	12 → GPIO_LED
18	AVCC	PB1	13 → GPIO_BUZZER
20	AREF	PB2	14 → GPIO_CHG_STATUS
		PC0	23 → ADC_C4_EXPLOSIVE_1
		PC1	24 → ADC_C4_EXPLOSIVE_2
		PC2	25 → ADC_C4_EXPLOSIVE_3
3*3	GND	PC3	26
		PC4	27 → LCD_I2C_SDA
		PC5	28 → LCD_I2C_SCL
7	PB6	PD0	30 → KEYPAD_ROW_1
		PD1	31
		PD2	32 → KEYPAD_ROW_3
		PD3	1 → KEYPAD_ROW_4
8	PB7	PD4	2 → KEYPAD_COL_1
		PD5	9 → KEYPAD_COL_2
		PD6	10 → KEYPAD_COL_3
		PD7	11 → KEYPAD_ROW_2

C14 100nF
C17 100nF
C15 100nF
C16 100nF
Y1 16 MHz

3.3V

CN2
ICSP

2	1	MCU_ICSP_MISO
4	3	MCU_ICSP_SCLK
6	5	MCU_ICSP_RESET

MCU_ICSP_MOSI
MCU_ICSP_MOSI

PB4 16
PB5 17
PC6/RESET 29
PB3 15
ADC6 19
ADC7 22

RED_LED

3.3V

LED4
RED

GPIO_LED

R3
100R (5%)

Q3
SQ2310

R5
10k (5%)

BUZZER

VBAT

LS1
3V

GPIO_BUZZER

R4
100R (5%)

Q5
SQ2310

R6
10k (5%)

LCD_DISPLAY

5V

DS1
16x2 LCD Display

VDD
V0
VSS

RV1

RS R/W E DB0 DB1 DB2 DB3 DB4 DB5 DB6 DB7

5V

A
K

Q1
BC817

R18
1k (5%)
LCD_LED_BACKLIGHT

3.3V 3.3V 3.3V

U4
PCF8574DW

16	VCC	P0 P1 P2		P4 P5 P6 P7	
8	GND			INT	13
15	SDA			A0	1
14	SCL			A1	2
				A2	3
				P3	7

C1 100nF

R22 10k (5%)
R21 10k (5%)

LCD_I2C_SDA
LCD_I2C_SCL

3.3V 3.3V 3.3V 3.3V 3.3V

R20 10k (5%)
R25 10k (5%)
R24 10k (5%)
R23 10k (5%)
R1 10k (5%)

LCD_LED_BACKLIGHT

KEYPAD

KEYPAD_ROW_1 R1 1 2 3
KEYPAD_ROW_2 R2 4 5 6
KEYPAD_ROW_3 R3 7 8 9
KEYPAD_ROW_4 R4 * 0 #

C1 C2 C3

KEYPAD_COL_1
KEYPAD_COL_2
KEYPAD_COL_3

C4_SHELLS_DETECTION

3.3V

R14 22k (5%) YELLOW WIRE CN5-2
R15 47k (5%) BLACK WIRE CN4-2
R16 100k (5%) RED WIRE CN4-1

ADC_C4_EXPLOSIVE_1 R17 1k (5%) 0.30V
ADC_C4_EXPLOSIVE_2 R27 1k (5%) 0.57V
ADC_C4_EXPLOSIVE_3 R28 1k (5%) 1.00V

R2 10k (5%)
R12 10k (5%)
R13 10k (5%)

C4 SHELL C4 SHELL C4 SHELL