

USER MANUAL

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Project Description & Objective :-

Designing a system for Microcontroller to control a helicopter via infrared signals & locate its current locations.

The specification of environment & helicopter are as follows :-

- Area covered : 50x50 square meters
- Variant Speed: 1m/s, 2m/s, 3m/s and 4m/s.
- location representation : [x, y, z] coordinate of helicopter in area.
- Initial Location: [25, 25, 0].

Wiring :-

Below is the information for the wiring of the Microcontroller.

AVR Pins		Input/Output Device Pins	
Port Group	Pin	Port Group	Pin
PORT F	PF0	LCD DATA	D0
PORT F	PF1	LCD DATA	D1
PORT F	PF2	LCD DATA	D2
PORT F	PF3	LCD DATA	D3
PORT F	PF4	LCD DATA	D4
PORT F	PF5	LCD DATA	D5
PORT F	PF6	LCD DATA	D6
PORT F	PF7	LCD DATA	D7
PORT K	PK8	INPUTS	POT
PORT K	PK9	INPUTS	LDR
PORT K	PK10	AUDIO	MiO
PORT E	PE5	LCD CTRL	BL
PORT E	PE3	AUDIO	Ain
PORT E	PE2	MOTOR	Mot
PORT D	TDX2	MOTOR	Op0
PORT D	RDX3	INPUTS	PB1
PORT D	RDX4	INPUTS	PB0

PORT A	PA2	-	-
PORT A	PA3	MOTOR	LED
PORT A	PA4	LCD CTRL	BE
PORT A	PA5	LCD CTRL	RW
PORT A	PA6	LCD CTRL	E
PORT A	PA7	LCD CTRL	RS
PORT C	PC0	LED BAR	LED2
PORT C	PC1	LED BAR	LED3
PORT C	PC2	LED BAR	LED4
PORT C	PC3	LED BAR	LED5
PORT C	PC4	LED BAR	LED6
PORT C	PC5	LED BAR	LED7
PORT C	PC6	LED BAR	LED8
PORT C	PC7	LED BAR	LED9
PORT G	PG0	-	-
PORT G	PG1	AUDIO	ASD
PORT G	PG2	LED BAR	LED0
PORT G	PG3	LED BAR	LED1
PORT L	PL0	KEYPAD	C3
PORT L	PL1	KEYPAD	C2
PORT L	PL2	KEYPAD	C1
PORT L	PL3	KEYPAD	C0
PORT L	PL4	KEYPAD	R3
PORT L	PL5	KEYPAD	R2
PORT L	PL6	KEYPAD	R1
PORT L	PL7	KEYPAD	R0
P11	+5V (any)	MOTOR	OpE

Button Actions :-

1 UP	2 FORWARD	3 DOWN	A
4 LEFT	5 BACKWARD	6 RIGHT	B
7	8	9	C SPEED UP
* HOWER	0	# START/STOP	D SPEED DOW

LCD RESPONSE :-

- Initially, LCD displays 'START'.
- During the Flight :

position	direction	speed
[x,y,z]	U	x m/s

- After landing

distance	25 m
duration	3 sec.

- After Crashing :
 - "Opps ! Crashed"