

Appendix –a

The program

```
#include<stdio.h>
#include<conio.h>
#include<dos.h>
/* This program is written by ADEL */
main()
{
/* initialisation */
int x;
intcolorcode=0;

screen1:
/* title for the thesis */
textmode(1);
gotoxy(5,2);
textcolor(WHITE);
textbackground(colorcode);
cprintf("\n ADEL ALI ");
delay(2000);
gotoxy(5,6);
cprintf("\n SUDAN UNIVERSITY- CETS ");
gotoxy(2,10);
cprintf("\nSpectrum monitoring");
gotoxy(5,14);
cprintf("\n start operation ");
struct date d;
getdate(&d);
printf("\n\n %d / %d / %d", d.da_day, d.da_mon,d.da_year);
delay(3000);
textmode(1);
colorcode = colorcode+1;
if (colorcode == 3) goto screen3;
textcolor(WHITE);
textbackground(colorcode);
clrscr();
goto screen1;
```

```
screen3:
/* check the status of the DTMF decoder */
clrscr();
textmode(1);
gotoxy(5,2);
textcolor(WHITE);
textbackground(GREEN);
printf("\n WAITING FOR A FREQUENCY ");
```

```
if (kbhit()) goto finish;
x = inportb(0x379);
x = x & 0xf0;
x = x | 0x80;
```

```
printf("\n\n %d ", x);
delay(1000);
/*goto finish;*/
```

```
if ( x == 144) goto screen4;
if ( x == 160) goto screen5;
if ( x == 176) goto screen6;
if ( x == 192) goto screen7;
if ( x == 208) goto screen8;
if ( x == 224) goto screen9;
if ( x == 240) goto screen10;
if ( x == 128) goto screen11;
/*if ( x == 0x90) goto screen12;
if ( x == 0x00) goto screen13; */
delay(5000);
goto screen3;
```

```
screen4:
/* licenced */
clrscr();
textmode(1);
gotoxy(5,2);
```

```
textcolor(WHITE+BLINK);
textbackground(GREEN);
cprintf("\n LICENCED ");
delay(10000);
goto screen3;
```

```
screen5:
/* licenced */
clrscr();
textmode(1);
gotoxy(5,2);
textcolor(WHITE+BLINK);
textbackground(GREEN);
cprintf("\n LICENCED ");
delay(10000);
goto screen3;
```

```
screen6:
/* licenced */
clrscr();
textmode(1);
gotoxy(5,2);
textcolor(WHITE+BLINK);
textbackground(GREEN);
cprintf("\n LICENCED ");
delay(10000);
goto screen3;
```

```
screen7:
/* licenced */
clrscr();
textmode(1);
gotoxy(5,2);
textcolor(WHITE+BLINK);
textbackground(GREEN);
cprintf("\n LICENCED ");
delay(10000);
```

```
goto screen3;
```

```
screen8:  
/* not */  
clrscr();  
textmode(1);  
gotoxy(5,2);  
textcolor(WHITE);  
textbackground(GREEN);  
cprintf("\n NOT XXXXXXXX ");  
delay(10000);  
goto screen3;
```

```
screen9:  
/* not */  
clrscr();  
textmode(1);  
gotoxy(5,2);  
textcolor(WHITE);  
textbackground(GREEN);  
cprintf("\n NOT XXXXXXXX ");  
delay(10000);  
goto screen3;
```

```
screen10:  
/* not */  
clrscr();  
textmode(1);  
gotoxy(5,2);  
textcolor(WHITE);  
textbackground(GREEN);  
cprintf("\n NOT XXXXXX ");  
delay(10000);  
goto screen3;
```

```
screen11:  
/* not */  
clrscr();
```

```
textmode(1);
gotoxy(5,2);
textcolor(WHITE);
textbackground(GREEN);
printf("\n NOT XXXXXX ");
delay(10000);
goto screen3;
```

```
screen12:
/* not */
clrscr();
textmode(1);
gotoxy(5,2);
textcolor(WHITE);
textbackground(GREEN);
printf("\n NOT XXXXXX ");
delay(10000);
goto screen3;
```

```
screen13:
/* not */
clrscr();
textmode(1);
gotoxy(5,2);
textcolor(WHITE);
textbackground(GREEN);
printf("\n NOT XXXXXX ");
delay(10000);
goto screen3;
```

```
finish:
getch();
return(0);
}
```