```
/*****************************************************************************/
/*                                                                           */
/*                               SCOPEDEF.H                                  */
/*                          General Definitions                              */
/*                              Include File                                 */
/*                       Digital Oscilloscope Project                        */
/*                                EE/CS 52                                   */
/*                                                                           */
/*****************************************************************************/

/*
   This file contains the general definitions for the Digital Oscilloscope
   project.  This includes constant and structure definitions along with the
   function declarations for the assembly language functions.


   Revision History:
      3/8/94   Glen George       Initial revision.
      3/13/94  Glen George       Updated comments.
      3/17/97  Glen George       Removed KEYCODE_UNUSED (no longer used).
      5/3/06   Glen George       Added conditional definitions for handling
                                 different architectures.
      5/9/06   Glen George       Updated declaration of start_sample() to
                                 match the new specification.
      5/27/08  Glen George       Added check for __nios__ definition to also
                                 indicate the compilation is for an Altera
                       NIOS CPU.
      6/03/14  Santiago Navonne  Added cursor text area, and NO_TRACE value.
*/



#ifndef  __SCOPEDEF_H__
    #define  __SCOPEDEF_H__


/* library include files */
  /* none */

/* local include files */
#include  "interfac.h"
#include  "lcdout.h"




/* constants */

/* general constants */
#define  FALSE       0
#define  TRUE        !FALSE
#define  NULL        (void *) 0

/* display size (in characters) */
#define  LCD_WIDTH   (SIZE_X / HORIZ_SIZE)
#define  LCD_HEIGHT  (SIZE_Y / VERT_SIZE)

/* cursor area */
#define  CURSOR_STR_X      5
#define  CURSOR_STR_Y      5
#define  CURSOR_STR_W      100
#define  CURSOR_STR_H      7



/* macros */

/* let __nios__ also mean a NIOS compilation */
#ifdef  __nios__
  #define  NIOS         /* use the standard NIOS defintion */
#endif

/* add the definitions necessary for the Altera NIOS chip */
#ifdef  NIOS
  #define  FLAT_MEMORY      /* use the flat memory model */
```

```
#endif


/* if a flat memory model don't need far pointers */
#ifdef  FLAT_MEMORY
  #define  far
#endif




/* structures, unions, and typedefs */

/* program states */
enum status  {  MENU_ON,    /* menu is displayed with the cursor in it */
        MENU_OFF,   /* menu is not displayed - no cursor */
        NUM_STATES  /* number of states */
         };

/* key codes */
enum keycode  {  KEYCODE_MENU,      /* <Menu>     */
             KEYCODE_UP,        /* <Up>       */
             KEYCODE_DOWN,      /* <Down>     */
             KEYCODE_LEFT,      /* <Left>     */
             KEYCODE_RIGHT,     /* <Right>    */
             KEYCODE_ILLEGAL,   /* other keys */
         NUM_KEYCODES       /* number of key codes */
              };




/* function declarations */

/* keypad functions */
unsigned char  key_available(void);     /* key is available */
int            getkey(void);        /* get a key */

/* display functions  */
void  clear_display(void);               /* clear the display */
void  plot_pixel(unsigned int, unsigned int, int);    /* output a pixel */

/* sampling parameter functions */
int   set_sample_rate(long int);    /* set the sample rate */
void  set_trigger(int, int);        /* set trigger level and slope */
void  set_delay(long int);      /* set the trigger delay time */

/* sampling functions */
void                start_sample(int);  /* capture a sample */
unsigned char *sample_done(void);   /* sample captured status */


#endif
```