



Floating

Menu

Reference

Design

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Update List:

Rev	Change	Description	Reason for change	Done By	Date
1.0				Lior .W	27 Sept. 2004
1.1	Add usItemSize to TcFloatingMenuItemStruct, Change the order of elements in TcFloatingMenuItemStruct, Fix the functions call example (add &).			Lior .W	28 Sept. 2004

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1 Purpose

Describe TransChip API design to support a floating menu feature. The floating menu is essentially a collection of graphic images, also referred to as icons that build up a GUI. The term floating is given to this feature because it is intended to be displayed while running the preview in the background.

2 Definitions/ Terms

DSC – Digital Still Camera.

OSD – On Screen Display.

Floating Menu – DSC menu displayed though OSD while preview is running.

API – Application Program Interface.

BB – Base Band.

GUI – Graphical User Interface.

3 Applicable Documents

TC574x Programmers Reference.

4 Constrains

1. All Icons on the floating menu are limited to use 1 palette of 15 colors.
2. The floating menu will use the “frame” OSD region and as a result if a frame was used in the preview it would have to be disabled before loading the floating menu.
3. Only overlay or transparent pixels are supported. Semi-transparency or alpha-transparent is not supported.
4. Width of a menu item will be a multiple of 4 pixels. (If it is a vertical system (where the sensor is rotated 90 Deg.) then rule applies to height.)

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5 Expected floating menu support



6 Floating menu API

List of type `TcFloatingMenuItemStruct` (database) holds the information needed to construct various menus combinations:

```
typedef struct
{
    CoordStruct    pos;
    CoordStruct    size;
    const uint8    *pFloatingMenuItem;
    uint16         usItemSize;
} TcFloatingMenuItemStruct;
```

- `int TCosdEnableFMitem(TcFloatingMenuItemStruct *pFMitem);`

Places a menu item on the frame buffer directly written into the DSC memory and affects the preview immediately.

- `int TCosdClearFMitem(TcFloatingMenuItemStruct *pFMitem);`

Clears a menu item on the frame buffer directly written into the DSC memory and affects the preview immediately.

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7 Example

The floating menu database will be a list of floating menu items (type TcFloatingMenuItemStruct) that will hold all information needed to construct various menus combinations. The below example implements an horizontal system (camera is not rotated) and the preview size is 128x120.

For example:

```
#include "FM\verMenuSideBar.h"
#include "FM\horMenuBar1_1.h"
#include "FM\horMenuBar1_2.h"
#include "FM\horMenuBar1_3.h"
#include "FM\horMenuBar1_4.h"
#include "FM\horMenuBar2_1.h"
#include "FM\horMenuBar2_2.h"
#include "FM\horMenuBar2_3.h"
#include "FM\horMenuBar2_4.h"
#include "FM\horMenuBar3_1.h"
#include "FM\horMenuBar3_2.h"
#include "FM\horMenuBar3_3.h"
#include "FM\horMenuBar3_4.h"
#include "FM\horMenuBar4_1.h"
#include "FM\horMenuBar4_2.h"
#include "FM\horMenuBar4_3.h"
#include "FM\horMenuBar4_4.h"

TcFloatingMenuItemStruct floatingMenuItemsList[] = {
    {{0,0},{20,120},verMenuSideBar,sizeof(verMenuSideBar)},
    {{20,20},{108,14},horMenuBar1_1,sizeof(horMenuBar1_1)},
    {{20,20},{108,14},horMenuBar1_2,sizeof(horMenuBar1_2)},
    {{20,20},{108,14},horMenuBar1_3,sizeof(horMenuBar1_3)},
    {{20,20},{108,14},horMenuBar1_4,sizeof(horMenuBar1_4)},
    {{20,40},{108,14},horMenuBar2_1,sizeof(horMenuBar2_1)},
    {{20,40},{108,14},horMenuBar2_2,sizeof(horMenuBar2_2)},
    {{20,40},{108,14},horMenuBar2_3,sizeof(horMenuBar2_3)},
    {{20,40},{108,14},horMenuBar2_4,sizeof(horMenuBar2_4)},
    {{20,80},{108,14},horMenuBar3_1,sizeof(horMenuBar3_1)},
    {{20,80},{108,14},horMenuBar3_2,sizeof(horMenuBar3_2)},
    {{20,80},{108,14},horMenuBar3_3,sizeof(horMenuBar3_3)},
    {{20,80},{108,14},horMenuBar3_4,sizeof(horMenuBar3_4)},
    {{20,100},{108,14},horMenuBar4_1,sizeof(horMenuBar4_1)},
    {{20,100},{108,14},horMenuBar4_2,sizeof(horMenuBar4_2)},
    {{20,100},{108,14},horMenuBar4_3,sizeof(horMenuBar4_3)},
    {{20,100},{108,14},horMenuBar4_4,sizeof(horMenuBar4_4)},
};
```

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A menu is formed by placing the floating menu items together on the frame region.

For example we can construct a database that will hold 1 vertical side bar:



and a few horizontal bars:



.

.

.

Each element from `floatingMenuItemsList` holds the position of an item (x,y) its size (w,h) and a pointer to the compressed menu item (the compressed menu item is essentially an header file that is produced by the database builder using BMP2TC.exe application).

When the menu is first loaded, the application will load an empty frame (frame index 0) that will hold the palette used for the floating menu (this palette will be given by the database builder using BMP2TC.exe application.)

Then, the base menu structure will be loaded. For example:

Load vertical side bar and horizontal effect 1 bar. (2 items loaded).

The API to load an item is:

```
TCosdEnableFMitem(&floatingMenuItemsList[0]);
TCosdEnableFMitem(&floatingMenuItemsList[9]); // index 9 points to horMenuBar3_1
(assuming M = horMenuBar1_x, T = horMenuBar2_x, E = horMenuBar3_x...)
```

The function will take immediate impact over the preview and will result in displaying the requested menu items:



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Important notice:

In order to start using floating menu the application must:

1. Init the OSD by TCosdInit. (If it was initiated there is no need to init again.)
2. Load and enable the empty frame by:
 - a. TCosdLoadFrame(0);
 - b. TCosdEnableFrame(TRUE);
3. Make sure that the floating menu items palette is used for the empty frame:

For example:

```
TcFrameStruct framesList[FRM_MAX_FRAME] = {
    {{0,0},{(uint8*)emptyFrame,(uint32*)FM_pal,sizeof(emptyFrame),FALSE}},
    {{0,0},{(uint8*)frame1,(uint32*)frame1_pal,sizeof(frame1),FALSE}},
    {{0,0},{(uint8*)frame2,(uint32*)frame2_pal,sizeof(frame2),FALSE}},
    {{0,0},{(uint8*)frame3,(uint32*)frame3_pal,sizeof(frame3),FALSE}},
    {{0,0},{(uint8*)frame4,(uint32*)frame4_pal,sizeof(frame4),FALSE}},
    {{0,0},{(uint8*)frame5,(uint32*)frame5_pal,sizeof(frame5),FALSE}},
};
```

Replacing menu item with another item that is located on the same position and has the same size:

When the item is replaced as a whole with another item (must be 2 items that have the same size), for example user pressed left key and menu needs to change the horizontal bar to Effect 2: Then the application only needs to load the new item:

```
// index 10 points to horMenuBar3_2
TCosdEnableFMitem(&floatingMenuItemsList[10]);
```

Moving menu item down:

Essentially moving a menu item down involves clearing the area of the old menu item and painting the new item at its own location. For such a move (e.g. when the user pressed down) we need to call 2 API functions as follows:

```
TCosdClearFMitem(&floatingMenuItemsList[9]);
// index 13 points to horMenuBar4_1
TCosdEnableFMitem(&floatingMenuItemsList[13]);
```



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