

## Touch Screen Finger Follow

The touch-screen demonstration has the following behaviour:

When the application starts, a large red cross is displayed on the LCD screen. When a press is detected, the colour of the cross is changed to green, and the cross follows the user's finger. On release, the colour of the cross returns to red.

To achieve this functionality the application is broken down to three threads:

1. **Position Keeper:** Effectively this thread allows state to be safely shared between the LCD driver thread and the main program loop. This thread stores the colour and position of the cross. It takes updates to this shared state from the main program loop and responds to requests for data from the LCD driver.
2. **Main program loop:** This thread is paused waiting for the PENIRQ line from the touch screen digitiser to go low, indicating the screen is pressed. When this event is fired, it sends a command (via a channel) to the "Position Keeper" to update the colour of the cross, then reads the position on the press and issues another command to the "position keeper" to update the location of the cross. This thread also lights associated "core" LEDs dependant on the position read. Once done the colour of the displayed cross is reset to red.
3. **LCD Driver:** This thread is responsible for providing the physical interface to the screen. It requests an update for the position/colour of the cross once per frame. This thread uses timers to produce the appropriate control signal and horizontal/vertical blanking delays.

