

## Dual Axis Level Sensor

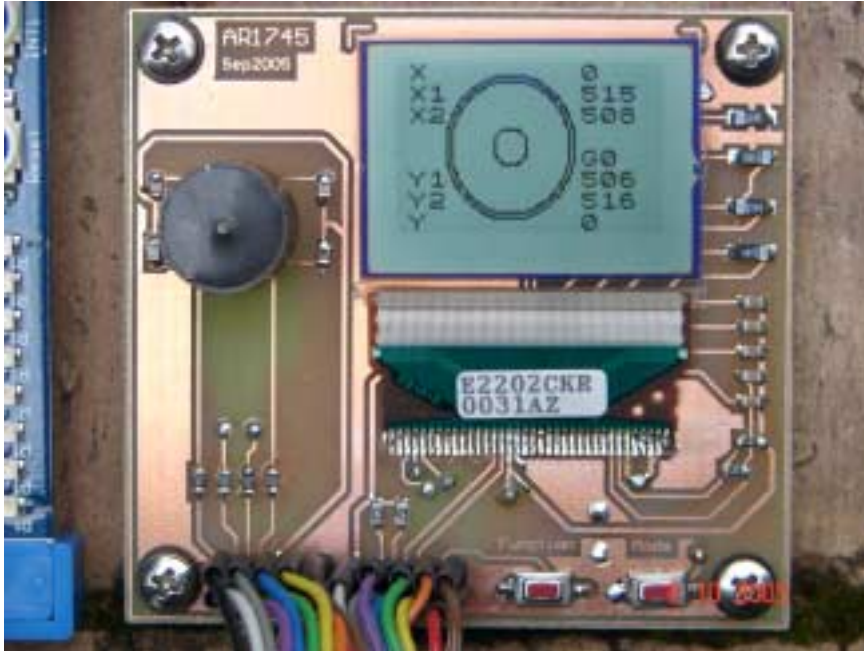
Entry AR1745 Sep 2005

Target LPC2138x ARM controller

### Introduction

How many times have you tried to adjust something for level with a spanner and not be able to see how your doing; instead, relying on iterative adjustment. A pool table has four adjustable feet for such adjustment, but fiddling around with the spanner and trying to get the table level is a huge pain.

This could solve the issue.



### Concept

I saw the AOSI electronic tilt sensors on the web a long time ago but never got around to using them. Mainly because it's all well and good driving them and showing some numbers but without graphics to give a visual indication of the angle status it all pretty boring.

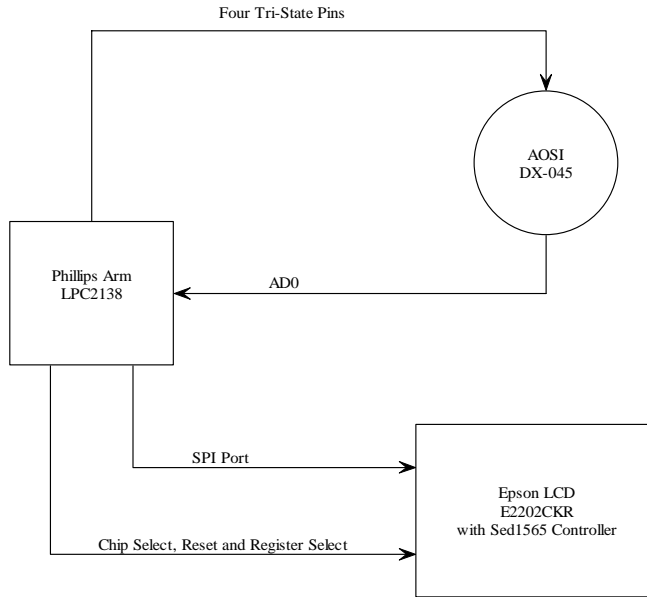
The dots started to come together when I found a source of low cost Epson mobile phone LCD's. Life still hadn't been made easy because I had to ferret around for quite a while to land on firstly what the controller in these screens used and secondly for the pin out. All the bits fell in place when the Arm competition came along. Here was a processor that was small, had enough onboard ram to do some reasonable graphics and plenty of flash that not only could I do the graphics but I could add sound.

I could have angular information displayed, a visual indication of the current position, and audio to use the unit without even looking at it.

Although this unit hasn't been packaged to what could be an end product, all the functions are there.

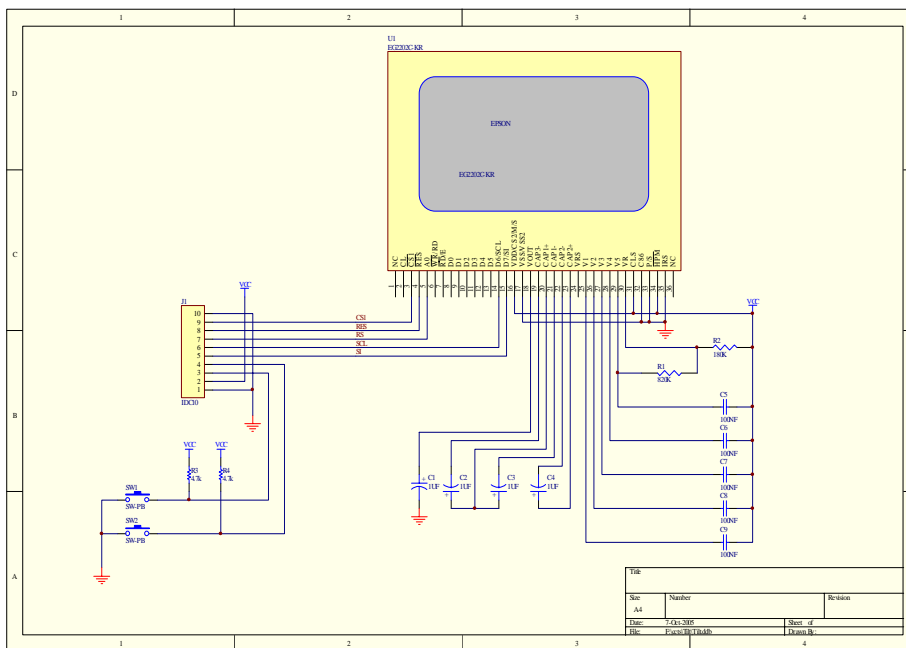
## Block Diagram

### AOSI Dual Axis Tilt Sensor coupled with Epson Mobile Phone Display

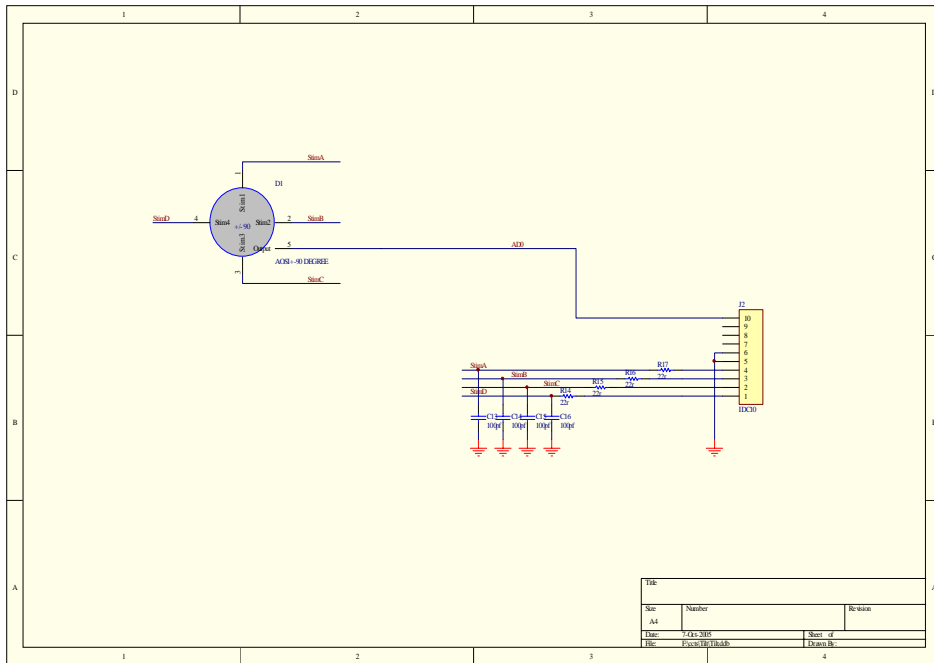


## Design

### LCD



## Analogue



## Summary

All my objectives were met. The unit works well at finding level and giving a number of feedback methods of current position. The unit forms the basis for a lot of other applications. Self levelling platform, builder level, pinball and pool table levelling and any number of industrial applications.

The LCD and graphics package could form the basis of a broad range of different types of display driving and I look forward to exploring this further.