



Custom Design Services

The Problem

You have a great idea for a new product or want to reduce the cost of an existing product but find yourself -

- Short of time
- Short of engineers
- Budget is too tight to do it 'in house'

The Solution

Cambridge Microprocessor Systems Custom Design Services.

Our engineers have been working in the field of electronic systems design for many years and have a wealth of experience and expertise that you can rely on. Whether it is a control system, a data logger, an instrument or a PLC that you require we will be able to assist you.

We offer a comprehensive design service which includes custom hardware, bespoke software and custom build. You will be surprised how little a custom design costs.

Ensure that your product hits the market on time and on budget.

Low Cost, Fast Turn round Design



PROton PR-25

Following the release of our low cost PROton range of embedded controllers we can now quickly add additional peripheral 'modules' to a standard embedded controller footprint to enable extremely fast turn round on some prototype designs. Starting from as little as £300 we can now offer customised prototype circuit boards within 21 days of receiving your specification. As standard tested 'circuit modules' are being used software development can often be started before the prototypes are ready further shortening the time to market.

Hardware Design

Our hardware design engineers can either take your own circuit design and import this into our printed circuit board layout package. Or working from your specification and any sketches, produce a circuit or schematic diagram for your product.

Once the schematic diagram has been signed off this is used

Services Offered

- Circuit Design
- Printed Circuit Board Design
- Programmable Device Design
- Application Software
- Enclosure Design
- Prototype Manufacture
- Functional Testing
- Compliance Testing
- Full Production Services

to track your printed circuit board using either BoardMaker or DesignSpark layout tools. During the circuit layout phase a set of design rules are applied to each trace on the circuit board to ensure required clearances and track widths are observed. At the end of the circuit board layout the whole design is checked against the net list produced from the schematic diagram to ensure that each signal is correctly traced.

Printed circuit board designs can up to 40" square and contain up to 32 tracking layers, two silk screens, two solder resists and two paste masks, two glue masks all with sub micron accuracy (0.001 micron).

Prototype printed circuit boards are then produced to enable your product to be tested. We can perform full functional testing on the product and arrange for compliance testing if required.

Software

We can develop any software required to run on your product. We use the latest development tools from Freescale, Keil or IAR depending on the chosen controller at the core of your product.

Typically on micro controller based systems application

programs are written in C, compiled on a computer and downloaded to the target controller.

As well as writing for 'bare metal' products our engineers are familiar with working on a number of real time embedded operating systems including MQX, OS9 and MINOS.

Manufacturing

Once your product has been designed and tested we are able to get it manufactured for you. Whether it is just a circuit board that you want assembled or a complete enclosed unit we will be able to get your product manufactured either in our own factory or using approved contractors in the UK, Europe or far east.

Some Custom Projects



Networked Fluid Vending Controller

We were asked to design a system to control and monitor a fluid vending system.

Our solution was to design a networkable fluid controller. By networking a number of 'slave' units together we could produce an expandable and adaptable system to suit any installation.

Our design enabled each 'slave' unit to independently control and monitor eight valves and operator switches.

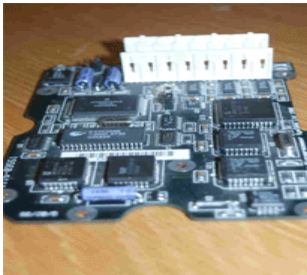
In an installation with up to 8 valves were being used a

Custom Design Services

single slave unit can operate as a stand alone system.

When used in 'network' mode, a master unit is located in the control room or management suite. This master unit communicates with each slave unit. It obtains reports, records events and displays the results. Alarm conditions can be set up to alert operators of unusual usage patterns. The system software communicates with the Management system to enable the control room or management suite to be able to monitor quantity of fluid dispensed from each valve and frequency of use of each valve.

By monitoring frequency of use limits can be set to restrict wastage and warn of unexpected patterns of usage.

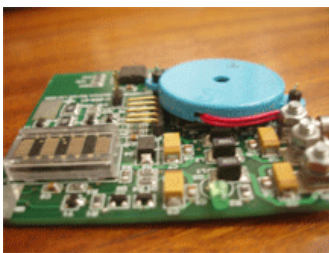


Avionics Project

Customisation of a standard product for a Radar monitoring application.

Having developed their application using our FlashModule Development system we were approached by a multi national avionics customer to modify our standard FlashModule

product so that it could be used in an aircraft. The design was required to be 'form - fit and function' compatible with their existing equipment. This required using customised connectors and a profiled printed circuit board to fit within their enclosure. Having completed the design and obtained all the required approvals we were involved in the manufacture of the production units.



Guard Patrol Unit

A security company approached us to design a system so that they could use to prove to their clients that Security Guards were performing regular site patrols during their shifts.

We came up with a small encapsulated hand held unit that the Security Guard would carry with them on their patrols. On their route would be a series of uniquely identifiable sensors. During their patrol the guard simply touches their hand held unit to each sensor, an audio signal indicates that the sensor has been read correctly. The time and sensor identifier are then logged into the hand held unit. When the security guard completes their shift they place the hand held unit into a cradle on a base station (see below). When the unit is placed in the cradle data is transferred from the hand held unit and sent to the Security companies servers to enable reports and billing information to be generated. While in the cradle the hand held unit is recharged ready for the next shift.

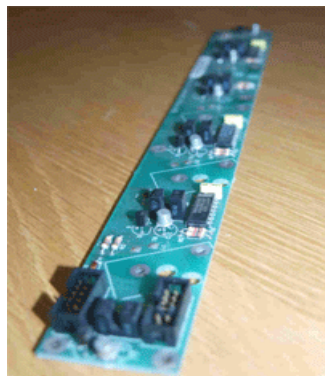
As part of the Guard Patrol Monitoring system this base station was also designed. The GSM/GPRS base station (shown below) is used to charge the hand held unit and

upload the recorded patrol information to a central data base using the GSM/GPRS network. This enabled automatic reports and billing to be generated.



GSM/GPRS Base Station

A customer who kept losing track of their keys approached us to provide a solution.



Key Cabinet Controller

We came up with a secure key cabinet controller to monitor the usage of a number of keys. The user would enter their credentials. Once the user was logged onto the system the cabinet would open to allow them to remove any keys that they were authorised to take. The system logs the keys to the particular user. When the keys are returned the system will log the return. If

someone else wants to take a key that is currently out of the cabinet they are able to get a report of who is in possession of the key that they require.

These are just a selection of the projects that we have worked on recently. Other customised projects that we have been involved in include -

- Corrosion monitoring
- Factory Automation
- Analysing welded joints for structural stability
- Calibration of aircraft flight deck instrumentation
- Networked alarm panels including fire, panic and intruder alarms
- Industrial Printer controllers
- Bar code printers
- Printer usage monitor and billing system
- Test and Calibration equipment
- etc, etc.

More Information?

To discuss your project with one of our Technical Sales Engineers please contact us using the details below.



Unit 17, Zone 'D', Chelmsford Road Industrial Estate
Great Dunmow, Essex, UK. CM6 1XG

Telephone +44 (0) 1371 606050

Fax +44 (0) 1371 606051

Email sales@cms.uk.com

Company Web site http://www.cms.uk.com

20140224_Custom

Questions? Call now to discuss your project.

+44 (0) 1371 606050