

Hardware Project Examples

Petrol dispenser grade/price display unit

A multinational manufacturer of petrol station forecourt equipment required the substantial re-engineering of a petrol pump price/grade display unit, capable of working over a wide range of temperatures and supply voltages.

Timestar carried out electronic design, printed circuit board layout and manufacture, assembly, test and delivery of 5 units. This included the development of microcontroller firmware for the Intel 87C51, able to cope with power loss without permitting invalid readings to be displayed.

RTU Plant Interface Testers

As part of a major programme for the changeover of the distribution network from one SCADA system to another, a regional electricity company, based in the south of England, required the design and supply of four portable testers.

The purpose of these was to simulate the behaviour of typical external plant (including analog inputs, digital inputs and digital outputs) connected to one of the remote terminal units (RTUs) of a SCADA system.

Timestar carried out the electronic and mechanical design, including the specification of the carrying case and the design of custom metalwork, and manufactured the four units required.

Active Head Electronics for multiple ultrasonic probes

An internationally known research and technology organisation based in the North West of England required the design and development of an intelligent electronic unit to provide an interface between a host PC and up to 16 ultrasonic probes.

The unit was required to operate in inaccessible locations (e.g. offshore) and therefore small size and low power were required, with a single coax cable being used to carry power, communications and the high frequency ultrasonic returns.

Working to a stringent delivery timescale, Timestar designed, developed and prototyped the unit, containing

- Microcontroller (Intel 87C51)
- Custom designed FSK modem circuit to handle communications with the remote host
- Timing and drive circuitry to excite the ultrasonic probes
- Ultra low noise multiplexer and amplifier to transmit the ultrasonic returns to the host computer.