



Gas Analyser

Emissions Monitoring

▶ “Captec have been an expert and responsive partner, working closely with our engineers to develop a universal solution that has been integrated in a number of products. The challenges were efficiently overcome, and we will continue to work with Captec as we develop the next generation of gas sensors.”

Product Manager

The solution is for an innovative technology company utilising quantum cascade lasers in a variety of gas sensing applications. A quantum cascade laser is a mid infrared light source that can be used to interrogate the spectral fingerprint of a wide variety of small molecules, enabling quantitative detection of atmospheric constituents such as methane and nitrous oxide, and pollutants including NOx and carbon monoxide.



Requirements & Issues

- ▶ Complex algorithms used to extract concentrations from spectral fingerprint data
- ▶ Very fast response required to track rapid changes in concentrations
- ▶ Data processing rates of >100 concentrations per second
- ▶ Up to 12 gas types measured simultaneously
- ▶ Measurement data communicated simultaneously over TCP/IP, RS232 and/or 4-20ma
- ▶ Multi-threaded application requiring powerful multi-core processor

The Solution

- ▶ A range of PC's including 2U rack mount, Desktop & embedded versions to allow integration with variants of application end user systems
- ▶ Different CPU's used for individual systems ranging from Intel Atom to Intel Q9400 Core 2 Quad CPU giving the required performance and longevity
- ▶ All components to full industrial specification to ensure reliable performance
- ▶ SSD used in place of traditional HDD to improve reliability



The Outcome

- ▶ Reliable, cost effective industrial and embedded PCs that meet requirements
- ▶ Deployment in over 100 gas sensors in a variety of applications around the world
- ▶ Solutions used in: Pollution & Air Quality Monitoring; Exhaust Gas Analysis; Process Control Applications



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