



# EMISSIONS MONITORING MULTI GAS ANALYSER

“ 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 NO<sub>x</sub> 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



**CAPTEC**

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