RAM2000™
Technology

RAM2000™ Technology describes the specialized FTIR hardware & patented analytical software incorporated in all of KASSAY's FTIR spectrometers to allow gas chemicals to be continuously monitored more accurately than conventional methods.

More than $10 million dollars was invested to develop RAM2000™ technology in partnership with the US government under the DARPA sponsored Technology Reinvestment Program (TRP).

Challenges Solved by RAM2000™ Technology

▪Spectral Noise▪

FTIR Challenge: FTIR detector circuits are prone pick up sources of mechanical and electrical noise.

RAM2000™ Solution: RAM2000™ circuits employ military technology. The ADC circuit is specially designed to highly filter and digitize signal in a linear mode. The pre-amplifier circuit delivers a signal that is amplified in a way to minimize the detector noise. Power supplies and cables are better shielded and grounded.

▪Thermal Stability▪

FTIR Challenge: FTIR signal strength will drift as a result of ambient temperature changes. Drift can cause "false positive" identifications, poor MDLs, or incorrect concentration values

RAM2000 Solution: RAM2000™ optical benches are sold with optional temperature stabilization to keep internal alignment consistent and eliminate voltage drift. VCSEL Lasers are additionally temperature stabilized.

▪Analytical Algorithms▪

FTIR Challenge: FTIR algorithms need to handle rapid changes in water vapor, CO2, or other atmospheric chemicals.

RAM2000 Solution: RAM2000 Software (RMMSoft) employs patented algorithms to 'lock' interferogram ZPD and micro-shift to know water peaks. An adaptive background filtering (ABF) algorithms aggressively handle concentration changes in atmospheric chemicals.

RAM2000 Awards

The **RAM2000™** design team received the Presidential Recognition Award for being one of only 133 projects completed on time, budget and within scope.

RMMSoft™ received the prestigious LISTnet award (Long Island Software Award) for powerful GUI interface to the RAM2000™ and SEI compliant development process.

RAM2000 Accreditations

The RAM2000™ open path monitor completed the USEPA's Environmental Technology Verification Program (ETV)*. A copy of the report and findings can be found at: http://www.epa.gov/etv/pubs/01_vr_ail.pdf

The RAM2000™ open path monitor used by the Pennsylvania Department of Environmental Protection (PADEP) Mobil lab went through the accreditation process according to NELAC standards. More information about the Nelac Institute can be found at: http://www.nelac-institute.org/

RAM2000™ open path monitor was approved in USDHS 'Guide for the Selection of Chemical Agent and Toxic Industrial Material Detection Equipment for Emergency First Responders, Vol. II as part of the SAVER* program. http://www.firstresponder.gov/saver/Pages/Savers.aspx?s=Saver
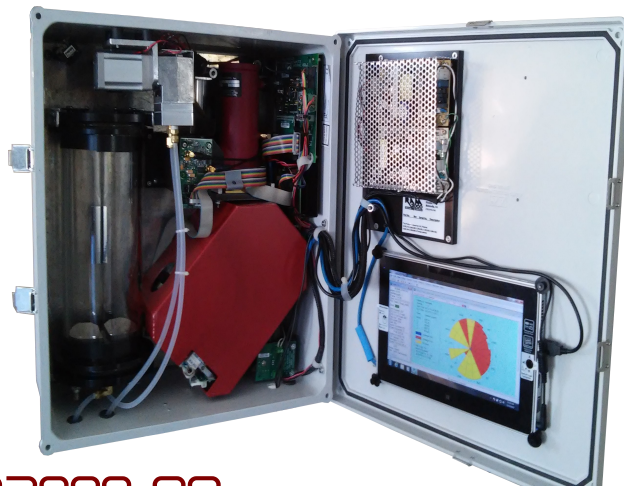
Products Based on RAM2000™ Technology

RAM2000-OP

RAM2000-OPEX

RAM2000-AA

RAM2000-MS

RAM2000-FS