C-MAC helps the EU Automotive industry clean up its act

Buckinghamshire, 23rd January 2008 – C-MAC MicroTechnology, a world leader in high-reliability electronic systems, modules and components for the Automotive, Aerospace, Industrial, Medical and Communications markets, today announced that its thick-film ceramic hybrid technology design and manufacturing services have enabled robust Exhaust Gas Recirculation (EGR) solutions to be developed which consistently meet the exacting standards required by automotive manufacturers. C-MAC's high temperature modular electronics solution is used in an EGR application for valve control, developed in partnership with customer Pierburg GmbH. EGR technology enables car manufacturers, such as Volvo Cars, to produce greener, more efficient vehicles through reduced exhaust gas emissions, increased engine performance and improvement in fuel consumption..

EGR technology utilises NOx (nitrogen oxides) reduction techniques used in both petrol and diesel engines. The module re-circulates a portion of the engine's exhaust gas back to the engine cylinders. By intermixing the incoming air with re-circulated exhaust gas, the mix is diluted, lowering the peak combustion temperatures and reducing the amount of excess oxygen. The EGR valve control system serves to limit the generation of NOx, primarily formed due to the presence of oxygen and high temperatures. C-MAC manufactures thick-film ceramic hybrid circuit modules which provide the sensing and control circuitry for the EGR valve system actuation and timing.

Ken Henderson, General Manager – Automotive, C-MAC, commented, "Over the past few years, new and stringent emission regulations in Europe and North America have been driving an increased uptake of exhaust gas recirculation (EGR) technology in the Automotive market. C-MAC is uniquely positioned to supply to this growing market as it is the first company to manufacture thick-film ceramic hybrid circuitry for this application, ensuring its

suitability for high reliability operation in the harsh, high temperature environments found in the engine compartment of the vehicle."

Notes for Editors:

Headed by Indro Mukerjee, **C-MAC MicroTechnology** is a world leader in the design and manufacture of high reliability microelectronics solutions for hard environments. The company's focus is primarily on the automotive, aerospace and defence electronics sectors as well as specialist industrial and medical applications. The head office is in Wooburn Green, UK, and the company has design and manufacturing facilities in the UK, Canada and Belgium and dedicated sales and customer support teams throughout Europe and the USA.

C-MAC MicroTechnology offers unrivalled expertise in the design and manufacture of advanced high reliability hybrid microelectronics systems. The company specialises in advanced thermal management, high power and high frequency electronic solutions, which are often required to operate in severe environments or extremely confined spaces. C-MAC's production sites operate to very high levels of quality including certification to ISO TS 16949 and MIL-PRF-38534. C-MAC's process technologies include thick-film printing on ceramic and other substrates, surface-mount hybrid circuits, DC/DC power modules, direct-attach flip-chip, low-temperature co-fired ceramic (LTCC), chip-on-board (COB), multi-chip module (MCM) assemblies and PCB assembly. These manufacturing resources are complemented by an integrated design-to-test service encompassing ASIC design as well as analogue, digital, RF, mixed-mode and thermal simulation. Through C-MAC's independently accredited test house facility, the company can carry out product qualification and material evaluation to internationally recognised standards.

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