



ASE Develops Packaging Solutions for *austriamicrosystems*' Secure Wireless Communication Device to be Implemented on future Mercedes high end models

Cost effective and low pin count QFN package applied in tiny electronic chips for advanced automotive functions

TAIPEI, Taiwan, Dec. 17, 2003 – Advanced Semiconductor Engineering Incorporated (ASE, TAIEX: 2311, NYSE: ASX), one of the world's largest semiconductor packaging and testing companies, announced today that international semiconductor supplier *austriamicrosystems*' new low-power radio transmitter/receiver ASIC has been packaged using ASE's Quad Flat No Lead (QFN) solution.

QFN is a leadframe-based package that is suitable for high speed and high frequency applications in low to medium pin count packages. This package demonstrates reduced electrical parasitics well suited for RF applications, lower thermal resistance, reduced physical dimensions and lighter weight.

The robust QFN package, successfully qualified at ASE's Korea facility, met the stringent requirements of *austriamicrosystems*' low power circuit, high frequency transmitter/receiver used to unlock and lock vehicle car doors in DaimlerChrysler's "Keyless Go" system. The "Keyless Go" system, introduced by DaimlerChrysler, allows keyless car access and enables the vehicle to verify if someone is authorized to enter the vehicle and allow the person to start the engine with just the push of a button. The *austriamicrosystems* ASIC will be applied in Mercedes' high-end models starting in 2004.

About ASE QFN Package

QFN is a leadframe-based package that has gained increasing popularity because of its cost effectiveness for high speed, high frequency applications in low to medium pin count packages. This package demonstrates reduced electrical parasitics, lower thermal resistance, reduced physical dimensions and is of lighter weight. Typically, a QFN package is able to accommodate up to a 50% reduction in package size compared to standard plastic leaded packages. Exposed die attach pads, shorter wire path and shorter lead length offer significant improvements in

thermal and electrical characteristics. Additionally, the exposed die pad used as ground pad is required to obtain stable RF performance in RF circuits. ASE QFN package family has been widely applied in telecommunication products (cellular phones and wireless LAN), portable consumer products (personal digital assistants, digital cameras) and any other low to medium lead count packages used in information appliances.

In the automotive field, ASE has expanded its QFN packages to various automotive electronic system applications including accelerator sensors, tire pressure monitors and remote keyless entry. Stringent standards in vehicle safety and comfort, as well as the development of smarter transportation features such as collision avoidance, brake-by-wire, adaptive cruise control and systems that combine GPS technology with wireless technology have encouraged semiconductor companies to design ICs that can enable these applications. To service these IC manufacturers, ASE is well equipped with its packaging and test technologies as well as its world class back end manufacturing facilities.

About *austriamicrosystems*

With headquarters near Graz, Austria, *austriamicrosystems* AG is one of the world's leading designers and manufacturers of highly integrated mixed signal ICs. *austriamicrosystems* combines more than 20 years of design capabilities, product and marketing know-how with a full service silicon foundry specialized in mixed signal, RF and HV applications. Operating worldwide with more than 800 employees, *austriamicrosystems* is organized in four strategic business units: Communications, Automotive, Industrial & Medical and Full Service Foundry.

Additional information can be found on <http://www.austriamicrosystems.com>

About ASE Group

The ASE Group is one of the world's largest providers of semiconductor manufacturing services. As a global leader geared towards meeting the industry's ever growing needs for faster, smaller and higher performance chips, the Group develops and offers a wide portfolio of technology and solutions including IC test program design, front-end engineering test, wafer probe, wafer bump, substrate design and supply, wafer level package, flip chip, system-in-package, final test and electronic manufacturing services through Universal Scientific Industrial Co Ltd, a member of the ASE Group. The Group generated sales revenues of \$2.24 billion in 2002 and employs over 24,000 people worldwide. For more information about the ASE Group, visit

<http://www.aseglobal.com>

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