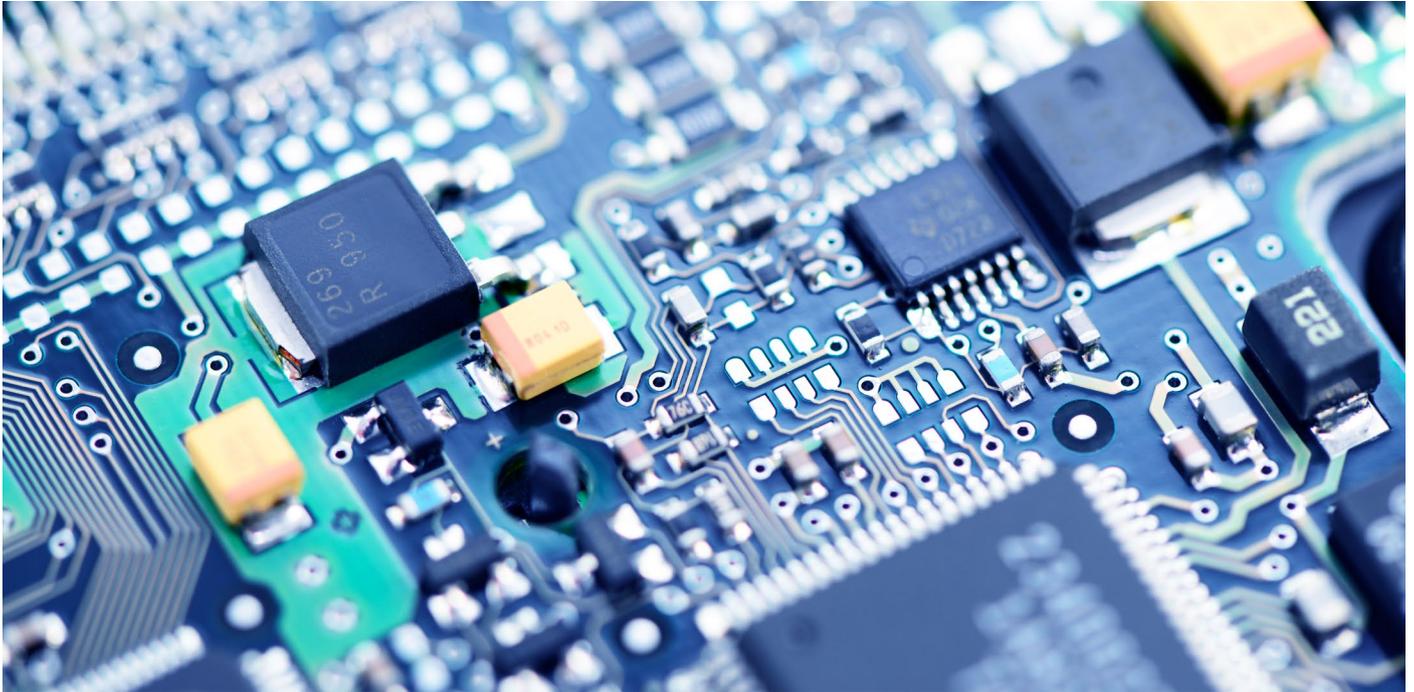


CONTROL AND ACQUISITION BOARD CAPABLE OF SIMULTANEOUSLY PERFORMING HIGH SPEED AND COMPLEX FEEDBACK OPERATIONS ACROSS MULTIPLE INPUT/OUTPUT CHANNELS WITH VERY HIGH ACCURACY



CONTEXT

Many automatic systems need to respond intelligently and efficiently to sensor signals. There is a current lack of solutions capable of giving high-speed response based on multiple complex decisions with the versatility to be adapted to new applications.

APPLICATIONS

Complex processes are typically performed automatically by devices through intelligently and efficiently reacting. They employ a variety of outputs to respond to multiple signals from sensors and other measurement systems. Sectors for which the speed of this complex response is a critical factor are:

- RESEARCH INSTRUMENTATION (IN PARTICULAR ATOMIC FORCE MICROSCOPES)
- ADVANCED MANUFACTURING
- MEDICAL DEVICES
- SAFETY SYSTEMS FOR VEHICLES (TRAINS, ETC.)
- CONTROL SYSTEMS FOR ELECTRICAL MACHINES
- OPTOELECTRONICS

TECHNOLOGY SUMMARY

This technology is a unique solution encompassing high-speed and intelligent response to multiple inputs with multiple outputs, something that cannot be achieved with existing single devices in the market.

BENEFITS

FAST: microsecond response.

MULTICHANNEL: acquires and reacts simultaneously to multiple stimuli.

VERSATILE: it allows the high-speed performance of complex processes by the host device.

FLEXIBLE: it allows the implementation of new functionalities for the final device in a simple manner and short-time.

VERY HIGH ACCURACY, both for signal acquisition and output response.

COMPATIBLE with an optional module for signal detection at very specific frequencies, enabling higher quality acquisition of signals.

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IP STATUS

Technical details not in the public domain.

TECHNOLOGY READINESS LEVEL AND TIME TO MARKET

Technology readiness level: 5-6

Time-to-market: 1 year

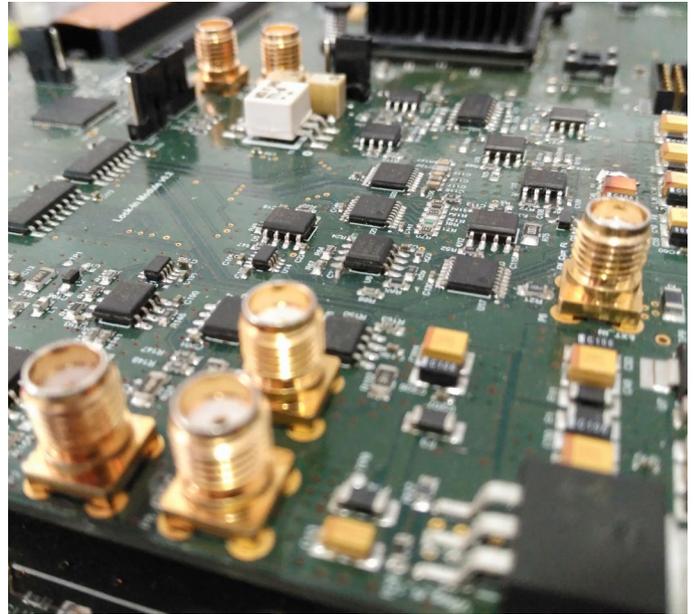
BUSINESS OPPORTUNITY

License, collaboration agreement, joint Venture.

ORGANIZATION PROFILE

The Spanish National Research Council (CSIC) is the largest public institution dedicated to research in Spain and the third largest in Europe. Its main objective is to develop and promote research that will bring about scientific and technological progress to society, and it is prepared to collaborate with Spanish and foreign entities in order to achieve this aim. CSIC plays an important role in scientific and technological policy, since its activity covers from basic research to the transfer of knowledge to the productive sector.

The Universidad Autónoma de Madrid (UAM) is the largest educational and scientific standalone university center in Spain. UAM has high profile research lines, prestigious research groups, national and international relationships with universities of excellence and participation in large research projects. All these make UAM, in close collaboration with other public R&D institutions a relevant player in science related research in Spain.



KEYWORDS

REAL-TIME CONTROL

ATOMIC FORCE MICROSCOPE (AFM)

SCANNING PROBE MICROSCOPE (SPM)

DIGITAL SIGNAL PROCESSOR (DSP)

FIELD PROGRAMMABLE GATE ARRAY (FPGA)

HIGH SPEED ACQUISITION

FAST FEEDBACK

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