

The Most Effective and Lowest Cost MEMS/SENSOR Test Solution

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The Challenge

The inertial MEMS / SENSOR market is growing rapidly and has its own unique requirements when it comes to testing of these devices.

Traditional ATE its size limitation is difficult to integrate into handler for rotating. The pattern-based ATEs become less efficient and more expensive in testing I2C/SPI interface with multi-sites (32 sites in parallel) and dynamic pattern.

The Solution

A PXI-based test SEMI system using PA32S modular instruments and a PXI Chassis is the best solution for MEMS/SENSOR testing. The **SATE** exhibits not only superior performance but also excellent capability for digital instrumentation. It combines high-performance pin electronics, **EIGHT** I2C/SPI masters, **EIGHT** 32-bit TMU, and supporting **Thirty Two** PMUs per board in a compact 3U PXI form factor.

Currently, MEMS / SENSOR products for consumer electronics come with the I2C/SPI interface. In order to optimize production efficiency, MEMS / SENSOR companies are looking for a new, low-cost ATE generation with the I2C/SPI interface and parallel-testing capability.

The **SATE** 32-site test solution includes:

- PXI Instruments:
OpenATE PA32S x 4 for I2C/SPI
OpenATE SMU32 for DPS
- Software Platform :
OpenATE MTS3
- Handler Interface:
GPIB / RS232
- PXI Chassis



The **SATE**, a PXI-based SEMI system with PA32S can provide users with the following benefits:

1. Compact Size, Low Cost

- Only one chassis can provide complete 32-site DC/Function testing
- Users can expand to 64 test sites as needed

2. Simplest ATE Test Software Platform

- MTS3 software platform is easy to connect and integrate with other handlers and rotators
- MTS3 C/C++ development environments are very common and popular for users
- MTS3 supports multi-site test functions. One test program can test any number of devices-under-test

3. Most Flexible Test Platform, One-stop operation

- To adjust test instruments to apply others MEMS productions
- One PXI-based standard platform can reduce investment and save cost
- Features multiple capabilities to support SENSOR device testing from engineering to production floor

4. Easy integration for handlers / rotators / shakers

- The size and weight of the smallest chassis can be considered to direct connection to handlers without additional cost or floor space for the Test Head Manipulator normally required for ATE

5. Applications

MEMS / SENSOR Device Testing

- Magnetic
- Gyroscope
- Accelerometer
- Pressure
- Thermometer
- Fingerprint Identification
- Microphone

OpenATE, an expert in IC tester instruments, can provide complete lowest-cost test solution boards for the semiconductor test market. A single test platform can be used in the development laboratory or production testing, to help users simplify their design and testing process.

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