The specification of a test system to perform wafer-level measurements on circuits such as amplifiers, mixers and filters can be challenging, especially when a single wafer can include multiple circuit types. The tests required to validate these structures are wide-ranging and complex, including S-parameters, DC-parameters, noise figure, gain compression and intermodulation distortion. Measurement and calibration accuracy is critical, especially where testing must be correlated between multiple locations.

To configure a system to meet these challenges you have to specify and source instrumentation, wafer probe stations, RF & DC probes and software from multiple suppliers and then integrate and prove these on-site before your first device can be tested. It can take weeks, or even months, before you can execute your first measurements with the confidence that there is data correlation and measurement accuracy between different locations.

FormFactor, with MeasureOne partner Keysight Technologies, can address these challenges directly by providing a fully integrated wafer-level measurement solution with guaranteed configuration, installation and support. FormFactor wafer-level probe stations, microwave and DC bias probes, and calibration tools combined with Keysight Technologies’ test instrumentation and measurement and analysis software allow you to perform comprehensive measurements on all structures.

Optimizing the configuration

A wafer-level measurement solution will incorporate FormFactor’s semi-automated wafer probe station for 200 mm or 300 mm with Infinity Probes®, WinCal XE™ calibration software and Impedance Standard Substrates for calibration, and a Keysight Technologies PNA or PNA-X microwave network analyzer, a N6705B DC power analyzer, and Keysight Technologies’ WaferPro Express (WaferPro-XP) measurement software platform.
Integration with measurement automation is critical to achieve the throughput and accuracy you need in your production and R&D environments. With WaferPro-XP you can setup and execute automated wafer-level measurements rapidly. WaferPro-XP’s interface and workflow are optimized for FormFactor semi-automated probe stations.

**Delivering a verified solution**

To ensure all of these elements work together to meet your application needs, FormFactor and Keysight Technologies will pre-validate the system configuration prior to delivery. FormFactor solutions experts will install and verify the system S-parameter and DC parametric performance, and Keysight Technologies solutions experts will verify optional application functionalities. Calibration is essential to ensure accurate and repeatable tests, and this can be particularly challenging in a wafer probing environment. FormFactor’s powerful WinCal XE software, when used with the Infinity Probes and Impedance Standard Substrates, enables an automated calibration with verified performance at the probe tip.

With a guaranteed wafer-level measurement solution from FormFactor and Keysight Technologies, you have accurate and repeatable testing, and achieve faster time to first measurement. For ongoing support, you have a single point of contact at FormFactor.

**System Components**

- FormFactor 200 mm or 300 mm semi-automated probe system, WinCal XE calibration software, Infinity Probes, and ISS calibration standards
- Keysight Technologies’ PNA or PNA-X, B1500A, WaferPro-XP, IC-CAP software, and DC Power Analyzer

For information on MeasureOne, call 1-800-550-3279 Toll-Free in USA or 503-601-1122 or go to [www.formfactor.com/test-expertise/measureone/program-overview/](http://www.formfactor.com/test-expertise/measureone/program-overview/)