Achieve accurate, reliable microwave measurement and fully automated calibration with multi-port fixturing solution

In order to make accurate and reliable microwave measurements, test engineers have to bridge the gap between the high quality connectors on the front panel of their test instruments and the real-world interface on their device-under-test (DUT). The electrical interface of a DUT is rarely fitted with high-quality, traceable connectors and is likely to have a larger number of ports than the instrument has test connections.

In this environment, the connection between the instrument and the DUT will exhibit non-negligible losses, group delay and dispersion. To compensate for these degradations the test configuration must be calibrated, at the DUT ports, at least once per day. Manual calibration can be time-consuming, error-prone and reduces the overall throughput of the test system.

The solution is to automate the calibration procedures, but in a way that considers the test fixturing and the error correction to be applied. ATE Systems has developed a solution that allows:

- Measurement and calibration solution for RF and microwave devices
- Automated in-situ calibration of single and multi-port devices
- Used with Agilent PNA, PNA-X network and PXA signal analyzers
- Calibration can be accomplished without removing the DUT
- Establishes reference plane at the DUT ports
- Used for S-parameter, scalar power, or noise measurements
- Reduces calibration time, eliminates manual error
- Calibration verified to TRL-level accuracy
- Achieves accurate and reliable RF/microwave measurements
Microwave Measurement and Calibration

This solution can be applied to S-parameter, scalar power, or noise measurements, allowing it to support any type of single or multi-function RF or microwave device. Software to control the system can be integrated into the network or signal analyzer.

The combination of ICM, FCMs and controller constitute a completely automated solution for in-situ calibration of single and multi-port devices. Once attached to the instrumentation, no calibration kit ever needs to be connected to the system to obtain error-corrected measurements. This means that the possibility of connecting the wrong standard or improperly torquing a standard is eliminated. A system configured in this way provides measurements that are verified to TRL-level accuracy.

As an automated solution the potential for manual error is minimized. Calibration routines can be executed rapidly without the need to change hardware connections, allowing more frequent calibrations to be performed without compromising system availability.

ATE Systems’ solution when used with Agilent’s network and signal analyzers automates your calibration procedures allowing you to achieve accurate and reliable measurements on single and multi-port RF and microwave devices.

To learn how this solution can address your specific needs please contact Agilent’s solutions partner, ATE Systems.

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ATE Systems
Solutions Partner

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ATE Systems is a technology innovator and developer of microwave, RF, and high-speed test systems.

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System Components

<table>
<thead>
<tr>
<th>Agilent Technologies</th>
<th>ATE Systems</th>
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<tbody>
<tr>
<td>N523xA</td>
<td>ICM</td>
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<td>N524xA</td>
<td>FCM</td>
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<td>Controller</td>
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<td>Instrument calibration module</td>
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<td>PNA-X microwave network analyzer</td>
<td>Fixture characterization module</td>
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<td>PXA signal analyzer</td>
<td>FCM controller and multiplexer</td>
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