Agilent AN 1200-2

Direct Characterization of Motion Control Systems

Application Note

Agilent Technologies 53310A Modulation Domain Analyzer

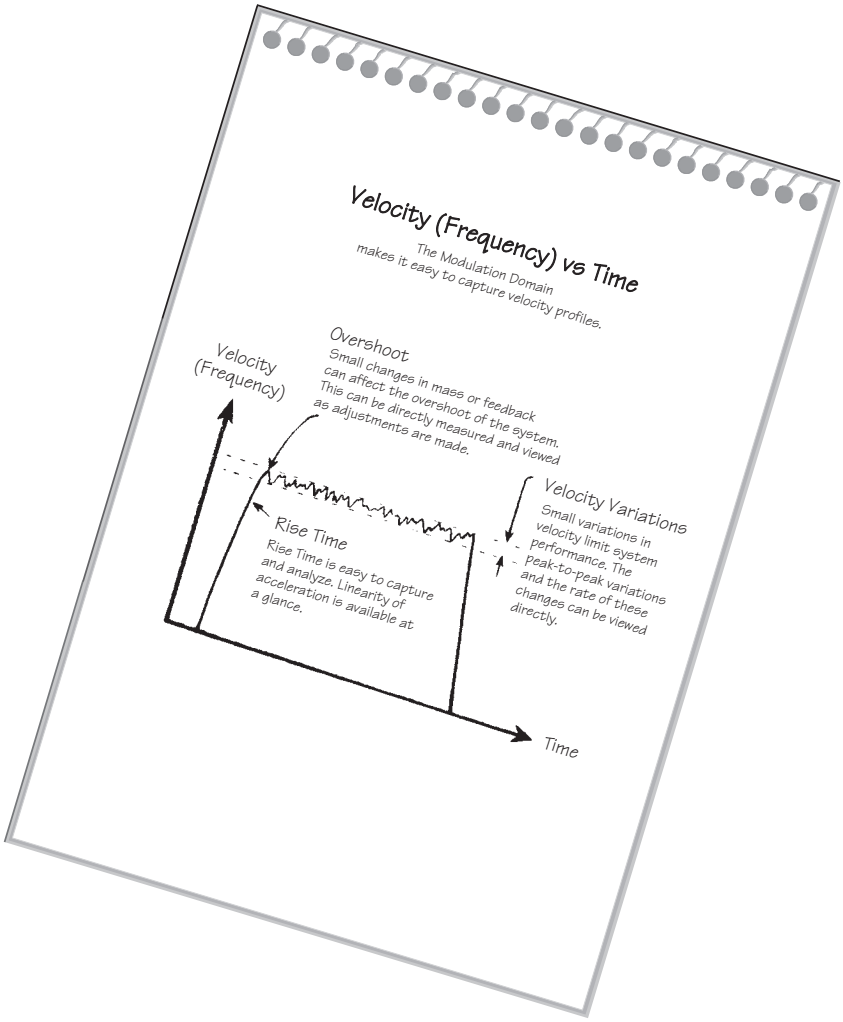
Easy Capture of Velocity Profiles

Situation

Motion control systems can be found in a vast range of products including mass storage devices, printers, plotters, robotics, precision positioning systems, industrial process control, and consumer products. As the need for higher-performance, lower-cost solutions continues, design challenges increase. As a result, servo designers need a quick and easy way to characterize their designs.

Problem

Evaluation of motion control systems is challenging. All too often, applications require specialized equipment and custom electronics to evaluate system performance. Graphical displays of velocity profile or step response are extremely useful for system characterization, but are difficult to obtain.



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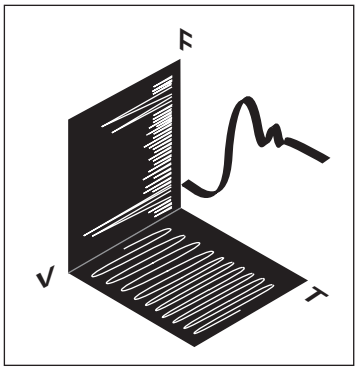
Solution
The Agilent Technologies 53310A Modulation Domain Analyzer makes it easy to capture and view velocity profiles without the need for an external controller. Powerful markers make it easy to evaluate performance parameters like rise time, overshoot, and velocity variations. System changes or adjustments also can be quickly verified.

Related Applications
Motion Control Systems in:

- Printers
- Plotters
- Laser printers
- Copy machines
- Fax machines
- Robotics
- Precision positioning systems
- Disc Drives
- Tape drives
- Gear trains

The Modulation Domain gives you a new way to view your complex signals
Better ways to analyze your complex signals don't come along often. Now Agilent brings you the Modulation Domain—a way of looking at frequency or time interval measurements that directly and clearly reveals both intentional and unintentional modulation.

For frequency analysis, it's the missing piece of the puzzle. The Time Domain shows you amplitude (voltage) vs. time. The Frequency Domain gives you amplitude vs. frequency. The Modulation Domain plots frequency vs. time—an intuitive and insightful way of examining your signal's dynamic frequency modulation.



For timing measurements, the Modulation Domain's view of time interval vs. time allows you to both see and quantify timing jitter directly—taking you one step beyond the Time Domain's qualitative view.

By internet, phone, or fax, get assistance with all your test and measurement needs.

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