

LTS-2000 Linear Test System

COMPUTERIZED TEST SYSTEM FOR LINEAR DEVICES

Easy to Set Up and Use; No Programming Skills Required

Tests Op Amps, A/D and D/A Converters, Regulators, References

by Fred Pouliot and Al Ryan

For more than fifteen years, Analog Devices has been a leading manufacturer of high-precision linear circuits. Besides a superior ability to conceive, design, manufacture, and market such products, a key factor in maintaining our leadership has been the continuing—and growing—capability to create test techniques and equipment. We have attacked and solved many of the problems that occur in high-speed, high-accuracy testing, and have even applied our knowledge and experience to the successful automatic trimming of ICs on the wafer.

In the LTS-2000, these skills are applied to the solution of a related problem faced by users: how to test precision linear products manufactured by ourselves and others. The LTS-2000 is a flexible, easy-to-use, benchtop test system which reflects both our testing competence and our successful design and manufacture of measurement-and-control subsystems.*

With the LTS-2000, you can test virtually any component to the manufacturer's own specifications. The growing list includes DACs, ADCs, and linear amplifiers—including op amps, voltage and current regulators, voltage comparators, followers, and similar devices. Future system capabilities are planned to embrace multipliers, dividers, log amps, CMOS switches, and a user-configurable universal family board for use with the BASIC-programmable LTS-2010 in user-proprietary testing.

Much more powerful than a simple tester, the LTS-2000 can be used for basic go/no-go testing, component selection and grading, engineering analysis, qualification testing, and as a diagnostic tool for component evaluation.

Its power and versatility are easy to command through sophisticated software (see page 6). With the prepared test program, the operator just loads the system, inserts the device, and presses the *start test* switch. The LTS-2000 does all the rest. To write your own program is almost as easy, and no programming experience is required: Just fill in the blanks via the keypad, in response to prompts displayed on the System Console (see page 4), with information from the device data sheet. When all the test parameters have been entered, the program is written to the disk and becomes part of your test library. You can change test parameters, reorder tests, and add or delete tests easily and quickly with the system's full editing capability.†

The LTS-2000 Linear Test System comprises the System Console, Family Board Assemblies, Socket Assemblies, and Socket P.C. Boards (see page 8). The *system console* includes a 16-bit microcomputer, a Measurement Section (which provides the control function and performs the final measurements for all devices), a floppy-disk drive, a 20-column thermal strip printer, a 40-character dot-matrix display, a keypad, and function switches, plus ports for RS-232 (2), IEEE-488, and a handler.

The *family-board module*, providing the special functions necessary to test a class of devices (e.g., ADCs, DACs, op amps),



is a drawer-like module that slides directly into the System Console. A *socket assembly* is a plugin module which provides the mechanical interface between the Family Board and the DUT. Plugged into the Socket Assembly is the *socket p.c. board*, which contains a socket and any required associated circuitry (e.g., for compensation) for a specific device type.

Other available facilities include a software-controlled automatic-handler interface, an integral statistical analysis package, an NBS-traceable system reference voltage, and test measurement resolutions up to 16 bits. All of this is available at one-quarter of the "big-system" price. For example, complete systems that include a family board and everything needed to test op amps are available for well under \$30,000. ▣

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