

*Electronics  
for the  
Musical Imagination*



CURTIS ELECTROMUSIC SPECIALTIES, INC.

# CURTIS ELECTROMUSIC SPECIALTIES

## IC Specialists Serving the Music Industry

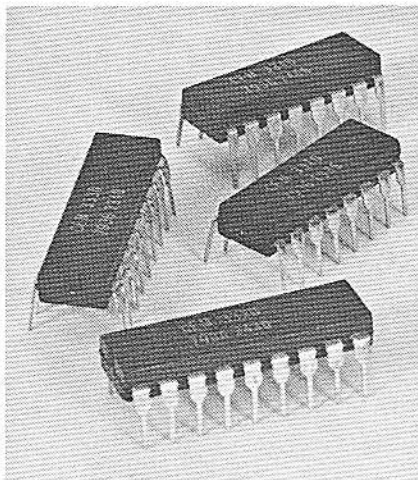
Curtis Electromusic Specialties Inc. is a California corporation dedicated to providing specialized integrated circuits of highest quality to the manufacturers of electronic musical instruments and audio and signal processing equipment.

Founded in 1976, the company began by providing various instrument manufacturers with custom IC design services. Out of this experience, we recognized a growing need for a standard line of IC's like those we were already developing at a custom level.

Today, our IC products provide uncompromised performance, more features, greater reliability and consistency at a lower cost than any others on the market.

For those applications which are not as easily fulfilled by our standard line, our proprietary technology is still available for custom IC design. Whether your application is analog or digital, we can put it on a semi-custom or full custom chip. All we need is the device definition and specifications—and all this at a surprisingly reasonable cost.

Whether you choose our standard line or a custom design, we not only provide you with all the necessary engineering support to help you design the devices into your products, but we stay with you throughout production, ensuring trouble free manufacturing of your products.



### Our IC Product Line:

**The CEM 3310 Voltage Controlled Envelope Generator**

**The CEM 3320 Voltage Controlled Four-Pole Filter**

**The CEM 3330 Dual Voltage Controlled Amplifier**

**The CEM 3340 Voltage Controlled Oscillator**

## Dependability: Assured by our Experienced Engineering

The Curtis Electromusic Specialties design team is comprised of some of the best talent in the IC industry—with experience encompassing industrial, automotive, and consumer, as well as sound and music IC's. This expertise—as documented in numerous papers and presentations to the audio industry—has allowed us to develop novel circuit design approaches that not only overcome the deficiencies of previous "chips", but do so in a smaller chip size and thus with a lower price tag.

**Curtis Electromusic provides applications engineering as an added service to customers. Doug Curtis, president of Curtis Electromusic Specialties (right), has designed numerous electronic music systems, enjoys playing them, and understands the performance needs of the industry.**

## Dependability: The Heart of our Design Philosophy

As important as our design qualifications is our ability to develop circuits which may be manufactured without problems. Unlike devices which are often designed using only the nominal parameter values of the integrated components, our devices are designed with consideration of the wide component tolerances found in IC processing.

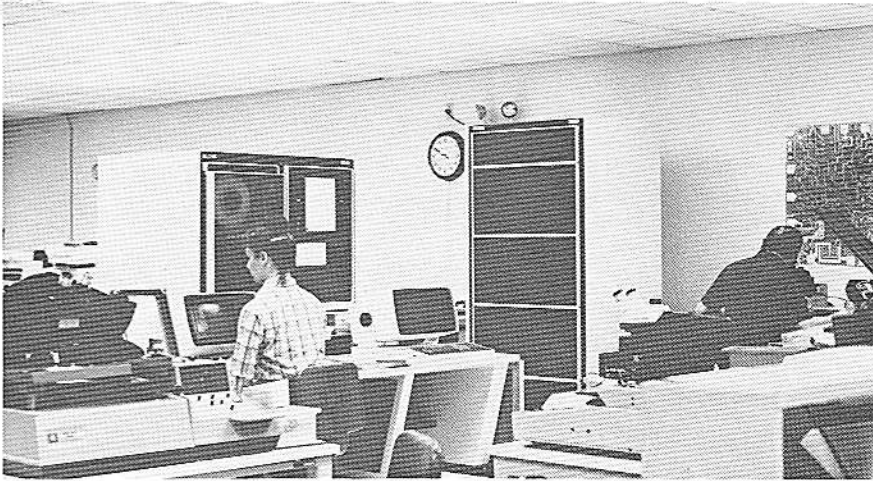
Extensive computer worst-case analysis has ensured that the designs will perform to the specifications with any combination of component parameters which might occur. Often we add more on-chip components to make our products impervious to component tolerances. Thus, while other ICs may falter due to the occurrence of wide component variations, our products perform with consistency from lot to lot.

So the parts you receive tomorrow will have the same top performance as the parts you receive today.

## Dependability: Assured by Rigorous and Thorough Testing

Before being shipped, each and every device is tested at least twice, once when it is in wafer form, and again after it has been assembled in its dual-in-package. The testing is performed by an automatic computer controlled tester, which subjects each device to 50-100 functional and parametric DC tests.

Our Quality Assurance program places randomly selected devices in an actual circuit configuration. Here they are subjected to a series of tests, again by computer, which are different from the previous testing and directly relevant to actual circuit applications. Probably the most important of these are the listening tests, where the computer automatically provides A-B comparison between a known good device and the Device Under Test.



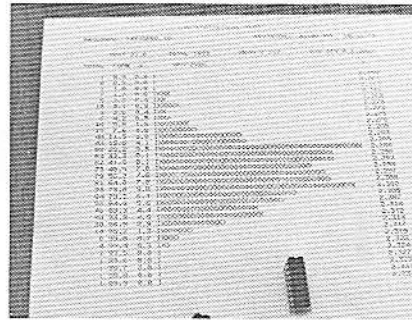
## Dependability: Monitoring the Manufacturing Process

And as a final guarantee of no problems occurring in production, we closely monitor the manufacturing process. Computer printouts are periodically made of the statistical distributions of each tested parameter and compared with previous printouts on previous production lots. In addition, samples of each production lot are kept in our archives along with their testing information. These procedures allow us to look for trends in the manufacturing and correct them before they may cause a problem.

**The imagination itself is the only limit to the musical possibilities that the musician seeks. We are dedicated to provide products which truly serve musical instrument manufacturers, and the musical imagination.**



**The LTX Computer-Controlled Tester subjects each device to between 50 and 100 test which determine whether each component within the chip is performing to design specifications.**



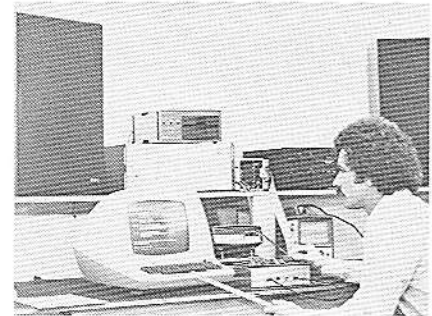
**Manufacturability is part of a good design. Computer printouts, such as this one, of the statistical distributions of various parameters allow us to monitor the manufacturing process.**

## Dependability: Delivery & Guarantees

Continuous supply of our devices is ensured by use of more than one source to manufacture the ICs. We only employ reliable, well-established manufacturers, with a history of competency and steady growth.

As well, these sources are selected from different areas and varied industry sectors to ensure collapse of some resource does not affect all. Delivery from CES can, therefore, be counted on.

And once the parts have been delivered, you can rely on our Guarantee: Should any part fail to meet any specifications within a 2-year period from delivery, when used under normal operating conditions, it may be returned for replacement or credit.



**Before each part is shipped, extensive Quality Assurance testing assures that we are meeting our own high standards. The benefit of our thoroughness to you is parts you can depend on.**

## Electronics for the Musical Imagination

CES is dedicated to serving the needs of the music and audio community in their quest for better, practical approaches to creative, products. We pride ourselves in listening to the manufacturers dreams for future products, so that we may continue to develop and provide the quality electronic components which ultimately serve the unbounded imagination of the musician himself.



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