

## Kurzweil 4000 Intelligent Scanning Systems

Introducing Kurzweil's new option  
for entering both text and line art  
in a single pass:

### ART/SCAN

#### The Problem:

Until now, scanners were only capable of providing you with either text or graphics from a page, never both. Though this two step operation was an improvement over manual entry, it required more equipment, manpower, time and organization to insure that the text could be re-linked to the graphics.

#### The Solution:

ArtScan from Kurzweil provides you with both. Finally, you can simultaneously capture text and graphics in one pass. The text can then be edited and paginated on your electronic publishing systems with your edited graphics re-inserted.

ArtScan provides you with:

- one system for both tasks
- one operator for both tasks
- filename integrity for easier retrieval
- fast and organized throughput for your scanning needs.

ArtScan can enter, in one pass, artwork consisting of line art typically found in:

- technical documentation
- flow charts
- business and statistical graphics
- general illustrations
- installation and repair manuals
- parts lists
- logos and trade symbols

**Kurzweil Computer Products**  
A Xerox Company

**FOR THE PAST THREE YEARS**, vendors to the commercial and inplant publishing industry have been struggling to provide products that meet increasing expectations for performance and capabilities in electronic publishing systems. Many of those vendors have turned to the P.C. along with their own software designed to handle the various needs of creating and publishing documents.

For every system solution provided, P.C. or otherwise, a more sophisticated set of requirements has emerged as users have become more sophisticated in their understanding of system capabilities and their own throughput bottlenecks. The process will continue.

In recent years, the focus of automation in the publishing industry has been an in-plant technical publishing. While we can argue about the market size and characteristics, there is little argument that conventional publishing methods have been hard pressed to meet the demands of today's technical publishing environment.

Nowhere is the need more critical for timely publication of large volumes of accurate technical information than in the electronics industry. Documentation must be available at the time of product introduction. A delay of months can mean the loss of competitive advantages or even outright failure. These products cannot be sold, delivered, or used without manuals.

To be effective, an ETP system must be able to accept the vast variety of information in many forms as input, quickly and cheaply. Flexibility in many forms as input, quickly and accurately can sometimes reduce the potential benefit of an ETP system. Users have looked to optical character recognition (OCR) as a means to overcome this problem. The role of OCR in converting printed material to electronic form has been limited. But that role is changing most evident in an outgrowth of OCR technology, called Intelligent Character Recognition or ICR. ICR combines optical scanning with artificial intelligence software, enabling character recognition which is increasingly less restricted in its capabilities.

**B. Transient Applications**

In applications such as A/D and D/A converters and pulse amplifiers, the transient response of the wideband amplifier is generally more important than the gain bandwidth characteristic described above. Slewing rate, overload recovery and settling time are the specifications which determine the transient response.

When applying the high frequency amplifier, it is important to understand how amplifier performance is affected by component selection as well as impedance levels used around the amplifier.

**Settling Time**

The time and frequency response of a linear, bilateral net-work or amplifier are related by well known mathematics. For example, the step response for a well behaved, linear, 60db/octave amplifier with a closed loop bandwidth of 100 is shown in Figure 5.

**Figure 5. Step Response for Linear 60dB/Octave**

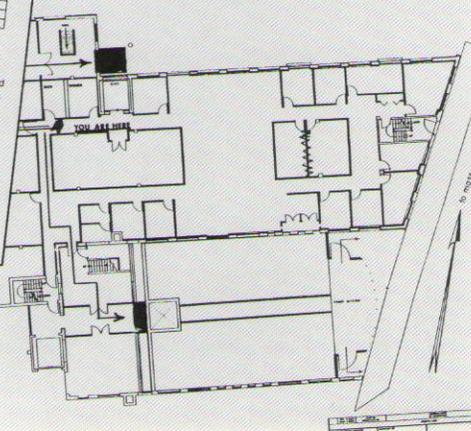
To a first approximation, the curve in Figure 5 relates settling time to closed loop bandwidth. Settling time is defined as the time elapsed when a perfect step input to the time when output has entered and remained within a band symmetrical about the final value. The time therefore includes the time required to slew from the initial value, recover from overload, and settle to a given error in the

**Figure 6. Typical Settling Time Characteristics**

However, the approximation soon breaks down since settling time is determined by a combination of amplifier character-

**Figure 7B. Output Settling Time vs. Out**

1<sup>ST</sup> FLOOR



## ART/SCAN

### Operation:

As with text scanning, you begin by giving a name to the file(s) you will create from scanning. The system automatically names the graphics file after you give a name to the text file ensuring ease of retrieval of associated files at output. Graphics files are given a filename extension of .SI for easy reference when viewing the file directory on the 4000.

Place the document with the graphics on a tablet. With the electronic stylus, mark off the top and bottom corners of the graphics area and touch the graphics box on the tablet. Do the same with any text area which needs to be read and output as an editable file.

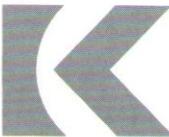
Place the document on the scanner face down. The scanner will automatically read both the text and graphics areas on the page and store them as separate files. Just as in text only scanning, the operator can still be training the system on any special characters or fonts, etc., to provide highest possible accuracy on the text scanning.

Just as you are provided with a wide variety of choices with text output formats, you have a choice of graphics output formats. Simply choose the one which is appropriate to your system and communicate the file to your electronic publishing system.

Files can be output as:  
 Bit-mapped (raster image)  
 CCITT Group 3 compressed  
 .RES files (for Xerox Viewpoint)  
 Selectable resolution up to 364 s.p.i.

### Availability:

ArtScan is a product enhancement to the Kurzweil Model 4000 Intelligent Scanner. It is available on any new Model 4000 as well as a field upgrade to presently installed Kurzweil Model 4000 Intelligent Scanners.

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