Overview of Guzik Products

The Guzik Technical Enterprise family of products consists of electro-mechanical mechanisms, measurement electronics and a variety of software packages for testing and evaluating key components and assemblies used in disk drives attached to personal computers. An IBM PC/XT, PC/AT or compatible computer system is used as the equipment controller. The products are used by manufacturing, quality control and engineering personnel.

The family of products consists of the RWA-201B, RWA-221, RWA-301 and the future RWA-401. These are electronics for the measurement of analog signals common to magnetic storage devices. Mechanical products consist of the S-211 spinstand and S-311 spinstand.

By combining these basic products, available options and software, a family of test systems exist. These consist of Disk Certifier, Head Tester, Burnish/Glide Tester, HDA Tester/Formatter and Disk Drive Tester.

Burnish/Glide Tester Description

The Guzik Technical Enterprise Burnish/Glide Tester consists of software, Hit Detector PCB, computer interface PCB, IBM PC/AT or compatible computer and Dual Head Loader for S-211 or S-311 spinstands.

It is designed to perform cleaning and certification of the magnetic disk surface for the presence of debris or bumps. Through the use of the dual head loader mechanism, the machine has the same functional performance and throughput as a dual carriage machine. It offers the advantage of smaller size and lower cost.

RWA-221 Description

The RWA-221 Guzik Technical Enterprises Read Write Analyzer is an integrated tool for the design, analysis and testing of magnetic storage devices and their components. It can be configured for testing disks and heads on a spinstand, drives, head/disk assemblies(HDA's) and head stacks.

With high precision, it performs all traditional measurements such as resolution, PW50, signal-to-noise ratio, overwrite, track average amplitude(TAA) and modulation. To measure the timing accuracy of a recording system, the RWA-221 performs Phase Margin(Bit Shift) Analysis by means of a programmable frequency data separator, accurate to better than 0.5 nanosecond, and a phase margin detector with calibrated window settings, accurate to better than 0.5 nanosecond.

The RWA-221 is controlled by menu driven software from an IBM PC/AT or compatible computer. Many software application packages are available to extend the use of the product into all areas of magnetic recording.

PRELIMINARY

9/29/88

Features

Track Average Amplitude

Resolution

Signal-to-Noise

Positive and Negative Modulation

Asymmetry

Overwrite

Missing Pulse and Extra Pulse

Pulse Width

Phase Margin(Bit Shift) Analysis

Programmable Write Current

Variable Frequency to 25 Mbit/second

Ability to use drives Servo Clock as the frequency source

Result Logging to Disk and/or Printer

Standards(Multiple Correction Factors)

Grading System

Remote Communications and Control for Robotic Integration

Customer Specified Plug-In Filters

Large Variety of Spinstand and Drive Interfaces

Production and Engineering Software

Support for Variety of Preamplifiers

Built-in Calibrator for Bit Shift Analyzer

16 bit Software Pattern Generator

Detector Thesholds Track Read Envelope

Programmable Peak Detector Time Constant

Software for Head, Disk, HDA and Head Stack Testing

Digital Output Signals for Oscilloscope Connection

Operator Specifiable Curve Fitting and Extrapolation

Programmable Positive and Negative Erase Currents

Extensive Graphics Displays

Single Programmable Measurement Gate Suitable for Wedge Servo Skipping

Specification

Analog Channel

Band Width:	10Khz to 40 Mhz
System Noise:	Less than -55db
Non-Linearity:	Second harmonic less than 1%
Programmable Attenuator:	36db(6db/step)
Filter Matrix:	4 customer specified filters
Preamplifier:	Customer specified
Write Current:	Programmable, 0 to 64 ma(zero to peak)
Programmable Frequency Synthesizer:	.5 Mbit/second to 25 Mbit/second

Parametric Measurement Accuracy

TAA:	+/- 1.5%
Modulation:	+/- 2.0%

Resolution: +/- 3.0%

Signal-to-Noise Ratio: +/- 0.5db

Crest Factor: +/- 2.0%

Overwrite: +/- 0.3db

Asymmetry: +/- 0.5%

Pulse Width: +/- 2.0%

Surface Testing

Missing Pulse: +/- 2%, 0% to 100% threshold(normalized to 2F envelope)

Extra Pulse: +/- 2%, 0% to 50% threshold(normalized to 2F envelope)

Digital Test

Data Separator: +/- 0.5 nanosecond (max) of Data Window, .5 Mbit/second to 25 Mbit/second

Bit Shift Analyzer with Internal
Calibrator:

Consistent window error less than
0.5 Nanosecond

Jitter less than 100 Picoseconds
RMS

Repeatability < / = 0.1 nanosecond

Pattern Generator:

Any 2 byte repeatable MFM pattern

Simulated 2/7 code (3:1 ratio) by
use of switch and special data
pattern