

# APPLICATION NOTE

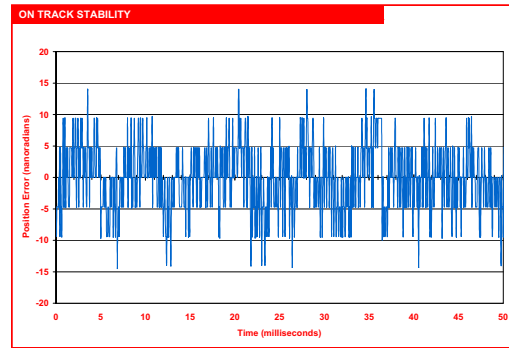
## HOW A "PLUG AND PLAY" MICRO POSITIONING SYSTEM CAN DRAMATICALLY IMPROVE SERVOTRACK AND MEDIA WRITING PRODUCTION LINES



MicroE Systems' high performance servotrack writer positioning system includes a PA-2000 series micro-positioner, MC2000 motion control board and a SA2000 servo amplifier for fast, seamless integration.

As HDD manufacturers responded to the growing demand for higher capacity, lower cost per Mbyte storage devices, they have had to dramatically improve their servotrack writer (STW) and media writing technology. Two choices were available: develop the necessary head positioning technology in house and risk missing the market or incorporate MicroE Systems' "plug and play" positioning systems into their production lines. A number of factors demonstrate the viability of the chosen approach.

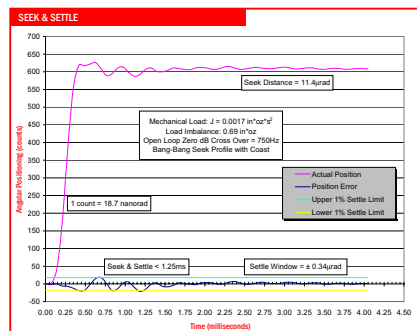
The PA 2000 series positioning system is based on proven technology and is already at the heart of many servotrack writer production lines today. Capable of ultra-high resolution, high speed and high



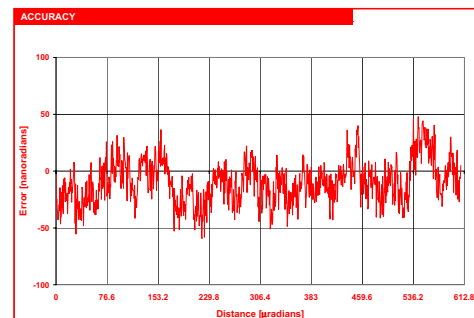
On-track stability is less than 7.5 nanoradians rms

accuracy, they enable STWs to produce today's high capacity hard drives with track densities to 80k tpi, as well as future generation drives with track densities greater than 100k tpi.

The result of intense engineering research, the PA-2000 series positioners employ a cost effective, highly reliable diffractive optical technology. Former positioners were based on expensive, environmentally sensitive Michelson interferometers. The advantages of the MicroE positioner include smaller size, easy integration, as well as plug and play compatibility with the motion control board and the servo amplifier. This is an important consideration as production downtime is unacceptable and rapid time to market is essential.



Seek and settle time less than 2 ms within 1% of track



Intra fringe accuracy is less than 35 nanoseconds rms

- Ultra-high resolution: 4.68 nanoradians
- Compact size saves precious space
- Robust design requires minimal maintenance

- High fidelity sinusoidal signal: 72 db S/N at 10 KHz
- Non-contact sensing for maximum life
- Head positioning accuracy: 35 nanoradians rms

www.microesys.com  
info@microesys.com  
T. [800] 355-4047

WORLD HEADQUARTERS  
8 Erie Drive  
Natick, MA 01760  
T. [508] 903-5000  
F. [508] 903-5005

CALIFORNIA  
T. [408] 358-6615  
F. [408] 358-6613

JAPAN  
T. +81 03 5363-0825  
F. +81 03 5363-0826

SINGAPORE  
T. +65 844 8468  
F. +65 844 8498

CENTER FOR SERVO  
WRITER EXCELLENCE  
T. [303] 665-9870  
F. [303] 665-3741