

# GUZIK PRODUCT BULLETIN

## **2Gbit/s** **Read-Write** **Analyzer** **RWA-2002**



**2Gbit/sec Maximum Data Rate**

**1GHz Analog Bandwidth for  
All Parametric Measurements**

**Pattern Generator with 1psec  
Resolution of Bit Precompensation\***

**PRML Chip Integration up to 4Gbit/s**

**Servo Writing and Processing**

\* US Patent 6,760,171 B2



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# RWA 2002 Performance Specifications:

## Pattern Generator

- **Minimum bit cell:** 500psec
- **Absolute position accuracy for any transition:** 5psec (typ), 10psec (max)
- **Precompensation resolution for any transition:** 1psec
- **Jitter at 2Gbit/sec:**
  - Random Pattern, RMS: 2psec
  - Repetitive Pattern, RMS: 2psec
- **Frequency resolution:** better than 1Hz
- **Frequency stability:**  $\pm 2.5$ ppm up to 75°C,  $\pm 1$ ppm/year
- **Random pattern maximum length:** up to 2Mbit

## PRML Chip Integration

- **Data Rate:** up to 4Gbit/s (limited by available commercial PRML chips)
- **PRML chips:** Chips from various manufacturers are supported. New PRML chips can be integrated upon request.
- **Channel Optimization**
- **Wide range of PRML Tests**

## Analog Channel

- **Bandwidth:** more than 1GHz at -3dB
- **Flatness:**  $\pm 0.2$ dB up to 1GHz
- **Group delay:**  $\pm 100$ psec up to 1GHz
- **Non-linear distortion:** better than 1% (entire bandwidth, nominal level)
- **Minimum pulse width (PW) to be measured:** 330psec
- **Parametric measurement accuracy (entire bandwidth):**
  - TAA:  $\pm 0.5$ dB\*
  - Pulse width: 3% or 20psec whichever is greater\*
  - SNR:  $\pm 0.5$ dB
  - Modulation:  $\pm 2\%$ \*
  - Crest factor:  $\pm 2\%$
  - Overwrite:  $\pm 0.2$ dB

\* Measurements conditions: sinewave signal without noise.

Specifications are subject to change without notice.

# RWA 2002 Physical Specifications:

## Physical

- **Size:** 22.1" x 17.6" x 10.8"
- **Weight:** 46 lbs.
- **Power:** 110 VAC ( $\pm 10\%$ , 50/60 Hz, 4A approximately)  
230 VAC ( $\pm 10\%$ , 50/60 Hz, 3A approximately)

## RWA 2002 Options:

OPTION	PERFORMANCE
Spectrum Analyzer SA-960	Frequency domain tests to 960MHz
Universal Preamplicifier 10	8Gbit/s write data speed, DC to 4GHz analog bandwidth
MR7 Read/Write Amplifier for GMR and TMR heads	4Gbit/s write data speed, 3GHz analog bandwidth
Universal Preamplicifier 8	2Gbit/s write data speed, 1.8GHz analog bandwidth
MR5 Read/Write Amplifier for GMR heads	2Gbit/s write data speed, 1.5GHz analog bandwidth
MR5L Low-Impedance Read/Write Amplifier for TMR heads	2Gbit/s write data speed, 2GHz analog bandwidth
Programmable Octave Filters	1-2GHz, 0.5-1GHz, 0.25-0.5GHz, 0.125-0.25GHz, 0.05-0.125GHz, and 0.05-0.02GHz
Programmable Octave Differentiators	1-2GHz, 0.5-1GHz, 0.25-0.5GHz, 0.125-0.25GHz, 0.05-0.125GHz, and 0.05-0.02GHz
Guzik Servo for Guzik and Non Guzik Spinstands	Guzik Servo Revision 4, Servo writing up to 1,024 sectors, 50 kHz servo sampling rate
Chip Adapter Interface CAI-4000	Up to 4 Gbit/sec data rate