

Desktop CD Quality Control

# QA-201



## DESCRIPTION

The QA-201 is a compact, easy to use, and highly accurate means of measuring jitter on CD's. It will analyze CD, CD-R, and CD-RW discs of all formats at 2X or 1X speed. This industrial-grade player also measures and displays error rates and provides a means for making other pit geometry measurements like I11, I3, and asymmetry, using an oscilloscope. Includes all features of QA-101.

You can now expand your test testing capability to include precision jitter and effect length measurement at a very modest cost, and without modifying your existing equipment.

QA-201 jitter and effect length measurements match Philips measurements better than other systems.

QA-201 is extremely easy to use – Just run the Windows software and start the player.

All results can be printed as color charts.

The CDM12 pickup used by QA-201 meets all Red / Yellow / Orange Book specs for measuring jitter; others do not!

## Affordable Precision

# Jitter Measurement

**new** From the  
Inventors of  
Desktop Quality  
Control

The Clover Systems QA-201 is an affordable and easy to use PC-based time interval measurement system that makes Jitter and Effect Length measurements according to Philips Orange, Yellow, and Red Book standards. It measures both jitter and length deviation for all sizes of pits and lands (3T – 11T). It also measures error rates and can be used to make pit geometry measurements.

## Features

- Measures jitter and effect length according to Orange Book Standard
- Measures pit and land jitter for all nine effect sizes
- Displays deviation from ideal pit & land lengths
- Histograms of pit and land lengths
- Bargraphs of pit and land jitter, plus length error
- Better than one nanosecond resolution
- Measures mean lengths of all pits & lands
- HF & TRK output jacks for pit geometry measurements
- Heavy-duty 3½" high rack-mountable steel chassis
- Money back Guarantee

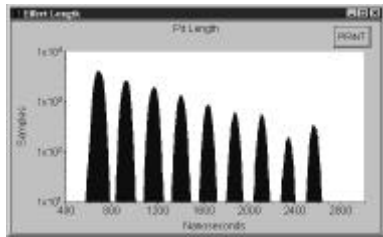


26241 Enterprise Court • Lake Forest, CA 92630  
PHONE: +1 949.598.0700 • FAX: +1 949.598.0800

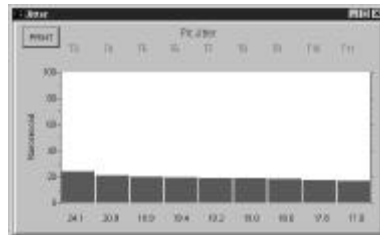
[www.cloversystems.com](http://www.cloversystems.com)

# Why Measure Jitter?

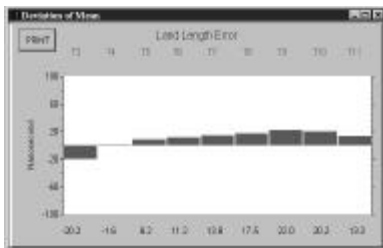
- Jitter is a measure of the random variation in pit and land lengths. Jitter is important because the CD information is carried in the edges of the pits. A transition between pit and land (either pit to land or land to pit) is a one, and everything else is a zero. Since the data is self-clocked at a constant rate, if the edges of the pits are not in the correct places, errors will be generated. If a transition between pit and land comes as little as 115 ns early or late, an error will result. A standard deviation of less than 35 ns will result in only about 1% probability of generating errors. Many types of disc defects will affect the jitter, making this a sensitive test of disc quality. Pit distortion, crosstalk from adjacent tracks, intersymbol interference, pit wall steepness, low signal-to-noise ratio, and LBR (or CD-R burner) instability can all cause jitter on the disc.
- CD-Recordable Duplication - CD-R discs behave differently than molded discs. Even though other measurements and error rates may be satisfactory, jitter may be unacceptable. In addition, jitter is a good test of media/writer compatibility, and can detect failing writers.
- Process control – Jitter and length deviation are important for controlling the manufacturing process. CD Replicators can measure jitter, length deviation, and error rates on the production line without tying up valuable resources.



- Histograms of 3T – 11T pit and land lengths give you a graphical representation of the lengths of all pits and lands. You can get a good idea of the disc quality from the widths of the lobes. When lobes overlap, errors will be generated.



- The jitter bargraph shows the standard deviation (jitter) for each pit and land length.
- The length deviation graph shows the deviation of the pit and land lengths from their ideal values.



The operator's manual fully explains how to interpret the data, and make measurements related to pit geometry. A thorough analysis of disc performance is possible.

# Specifications

- Dimensions: 17" x 12" x 3.5" - Rack mounting hardware optional
- System Requirements: Windows PC with '486 or higher CPU, one unused full length ISA slot, one available COM port, and Windows 95/98/ME/NT/2000
- Outputs: AES/EBU Digital Audio, HF, TRK, RS-232/485 Serial interface, Printer, analog audio outputs, TTL EFM.
- Power consumption: 25 watts (90-260 VAC 50/60 Hz)
- Dimensions: 17" x 12" x 3.5" - Rack mounting hardware optional
- Weight: 16 lbs.
- Holographic lightpath
- N/A = 0.45
- $\lambda = 780 \text{ nm} \pm 10 \text{ nm}$
- Polarization = perpendicular to track

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26241 ENTERPRISE COURT  
LAKE FOREST, CA 92630  
PHONE: +1 949.598.0700  
FAX: +1 949.598.0800

E-MAIL: info@cloversystems.com

[www.cloversystems.com](http://www.cloversystems.com)

# Warranty

- All Clover Systems products are sold with a 30-day money back guarantee, and one-year warranty against defects.

All specifications subject to change without notice.