

# Digital Processing Jitter Meter

- TIA Digital Processing Combined with Metered Display Handles DVD, CD and CD-R/RW
- High-Speed, Accurate Simultaneous RF Data Level Jitter
- Measures Jitter at 3T Through 11T + 14T
- Jitter Readings in % Clock Frequency and Sigma
- Measurements at Rise, Fall and Both Data Edges
- Response up to Double Speed
- High Sensitivity - Accurate Readings at 50 mV or More
- 50Ω and 10MΩ Inputs Allow the Use of 10:1 Probe to Minimize Circuit Loading
- Go/NO-GO Judgements Against Preset Entries
- Easy Settings and Memory Storage
- Auto Slicer Conforms to DVD Documentation
- Inhibit Input Suspends Tests Due to Malfunctions
- RS-232C Standard
- Remote Control of Panel Functions



LE-1870

The LE1870 makes use of digital processing to provide fast, accurate and repeatable R&D, production and QC measurements in DVD, CD and CD-R/RW applications. Setup is easy and GO/NO-GO judgements speed routine inspections. Option equalizers facilitate testing via direct pickup connections.

## key specifications

### INPUT SECTION

EFM Signal  
Input Couple: AC  
Measurement Voltage Range  
50 mV to 5 V p-p  
Input Impedance  
1 MΩ / 50Ω  
Bandwidth  
50 MHz ≤ -3 dB  
Slice Level  
Variable (± 2.5 V)  
Auto (Asymmetry On)  
Maximum Input Voltage  
± 5 V  
Inhibit In  
Input Impedance  
100 kΩ  
Input Signal  
0 -5 V (Measurement inhibit at 5 V)  
Maximum Input Voltage  
-0.7 V - +5.7 V

### JITTER MEASUREMENT SECTION

Corresponding Speed  
DVD standard speed (27 MHz ± 10%),  
Double speed (54 MHz ± 10%)  
CD standard, 2, 4, 6, 8, 10, 12 times speed  
(EFM CLOCK: 4.3218 MHz to  
51.8616 MHz)  
Measurement Mode  
DVD All T: DATA to CLOCK  
DVD 3 T: PULSE WIDTH  
CD 3 T: PULSE WIDTH  
Scale  
Data to Check Measurement  
ns, % (Automatic conversion)  
3T Pulse Width  
ns  
Accuracy  
Meter Display  
± 4% of full scale ± 0.15 ns  
Digital Display  
± 4%, ± 0.15 ns  
Polarity  
Data  
+, -, BOTH  
Clock: -  
Indication  
SIGMA  
Measurement Time Constant Variable  
0.4 s to 5 s

### LEVEL MEASUREMENT SECTION

Measurement Method  
Peak to peak level of RF (DATA) signal  
Range  
Input Impedance (50Ω)  
50 mV to 5 V p-p  
Input Impedance (1 MΩ)  
0.5 V to 9.999 V p-p  
(conversion value for 10:1 probe)  
Display Method  
Digital  
Accuracy  
± 5%

### CLOCK FREQUENCY MEASUREMENT SECTION

Measurement Range  
27 MHz ± 10%, 54 MHz ± 10%  
Measurement Accuracy  
± 0.5%

### CLOCK REPRODUCING SECTION

Reproduce standard clock from input  
EFM plus signal  
Corresponding Speed  
DVD standard speed (27 MHz ± 10%)  
DVD 2 times speed (54 MHz ± 10%)

### JUDGEMENT SECTION

Compares set standard and measurement  
value of level and jitter to determine  
GO/NO-GO and output results  
GO/NO-GO LED  
Meter (Jitter measurement) judgement  
RF Level/Jitter LED  
Digital display (Jitter and level  
measurement) judgement  
Dedicated Remote Terminal  
Jitter measurement, Level measurement  
judgement

### OUTPUT SECTION

Monitor Output  
Output Signal  
Input signal or the signal through the  
equalizer  
Output Impedance  
50Ω  
Digital Output  
Output Signal  
EFM DATA signal, EFM CLOCK signal  
Output Impedance  
50Ω  
DC Output  
Jitter

### DATA to CLOCK

DVD: 0.05 V/% or 0.125 V/ns  
3T Pulse Width  
DVD: 0.1 V/ns  
CD x1: 0.025 V/ns  
x2: 0.05 V/ns  
x4, x6: 0.1 V/ns  
x8 to 12: 0.25 V/ns  
Level  
0.4 V/V p-p

### REMOTE CONTROL SECTION

Designated Remote Terminal  
Judgement output and panel setting  
RS-232C

Control, Data output

### ENVIRONMENTAL CONDITIONS

Operating Temperature  
0 to 40° C, 30 to 85% RH  
(without condensation)  
Spec Guaranteed Temperature  
10 to 30° C, 30 to 85% RH  
(without condensation)  
Storage Temperature  
0 to 50° C  
Operating Environment  
Indoor Use  
Altitude  
Up to 2000 m  
Overvoltage Category  
II  
Pollution Degree  
2

### POWER REQUIREMENTS

90 to 240 V ac, 50/60 Hz  
Max. 35 W, 50 VA max.

### PHYSICAL

Size (W x H x D)  
8<sup>3</sup>/<sub>8</sub> x 5<sup>1</sup>/<sub>4</sub> x 11<sup>3</sup>/<sub>4</sub> in.,  
213 x 132 x 300 mm  
Weight  
10 lbs., 4.7 kg

Accessories

Spare Fuse  
Power Cord  
Instruction Manual

### AVAILABLE OPTIONS

OP70 - CD-R/RW Measurement  
OP72 - GPIB  
OP74 - Fixed Equalizer  
OP75 - Variable Equalizer  
OP76 - Variable Equalizer