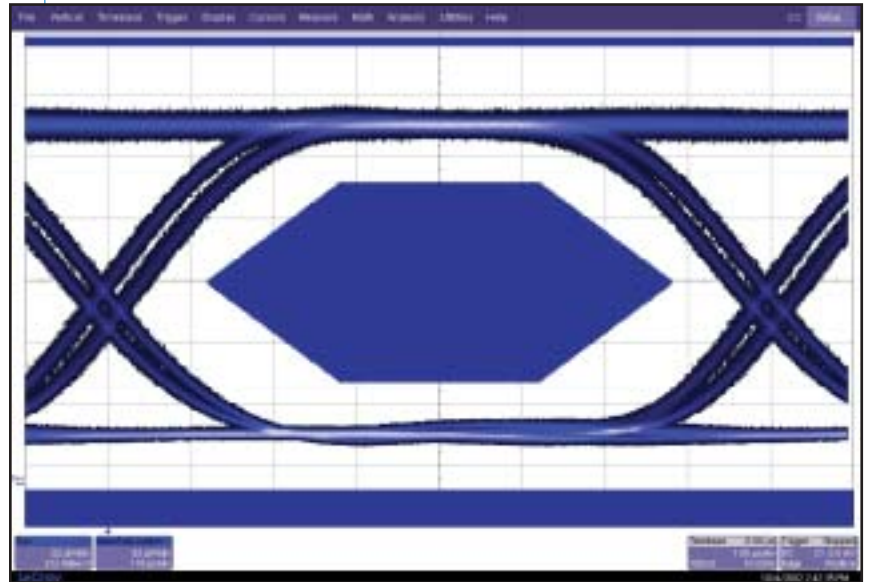


# Serial Data Mask Software

## SDM

### LEADING FEATURES

- **Software clock recovery eliminates trigger jitter**
- **Measure data rates up to 3.5 Gb/s**
- **Automatic mask alignment**
- **Adjustable mask margins**
- **Creation of user-defined masks**



Eye pattern of FC1063 optical signal

The SDM serial data mask package for LeCroy WaveMaster oscilloscopes adds eye pattern mask testing capability to the instrument. The user selects compliance masks from a comprehensive list of standards and the eye pattern is tested against this mask. User-defined masks are also possible by simply editing the included Microsoft™ Access2000™ data base file. The eye pattern is automatically aligned with the compliance mask.

The SDM package measures eye patterns by acquiring a long record of waveform data from the data stream under test. Once in the oscilloscope's memory, a software algorithm computes a reference clock from the signal data which tracks the long-term variations

in the data rate in the same way as a "golden" PLL does in hardware. The loop bandwidth of this software golden PLL is adjustable as a ratio of the measured bit rate. This ratio is variable from 1/20 to 1/10,000. Mask violations are counted and indicated by red circles in the display. The mask margins are adjustable both vertically and horizontally.

All of the data for the eye pattern are collected in a single acquisition thus completely eliminating any trigger jitter from the measurement.

## SDM – Serial Data Mask Software Technical Specifications

### Software Clock Recovery

**PLL bandwidth:** .05 to  $10^{-5}$  of the data rate

**Jitter:** 1 ps RMS typical (based on the WaveMaster sampling clock stability)

**Data rates:** Less than 3.5 Gb/s

### Standard Masks

#### SONET/SDH

OC1/STM0  
OC3/STM1  
OC12/STM4  
OC48/STM16

#### Ethernet IEEE Std. 802.3 and ANSI X3.263-1995

1000 base-SX short wave optical  
1000 base-LX long wave optical

#### Fibre Channel electrical

FC133E, FC266E, FC531E, FC1063E

#### Fibre Channel optical

FC1063

#### IEEE1394b (draft)

S400 Optical  
S400b T1  
S400b T2  
S800 Optical  
S800b T1  
S800b T2  
S1600 Optical  
S1600b T1  
S1600b T2

#### Serial ATA (draft)

G1, G1 Rx, G1 Tx  
G2, G2 Rx, G2 Tx

#### DVI (rev. 1.0)

Transmit normalized,  
Receiver Low/high

#### Infiniband (draft)

2.5 Gb/s Optical  
2.5 Gb/s Electrical

### Recommended Accessory

The OE455 and OE425 optical-to-electrical converters operate over the 500–870 nm and 950–1630 nm wavelength ranges respectively. When used with the WaveMaster oscilloscope, they form an optical reference receiver on any channel for data rates up to 2.5 Gb/s.



## Sales and Service Throughout the World

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### Ordering Information

Serial eye mask testing package

### Product Code

SDM

# LeCroy