

## MUX100G

### 100 Gbps 4:1 Multiplexer



**Compact 4:1 Multiplexer with Maximum Output Data Rate of 100 Gbps**

**Differential Outputs with 400 mV Single-Ended Output Swing**

**Integrated Delay For Timing Control of Input Data Signals**

**Divided Clock Outputs with Adjustable Delay**

### Brief Description

The Sympuls MUX100G is a 4:1 multiplexer that operates at data rates up to 100 Gbps. The four parallel 25 Gbps data input signals are converted to a serial output data stream of 100 Gbps. A clock signal of half the frequency of the output data rate is needed for operation. All data and clock inputs are single-ended and DC-coupled.

A divided clock signal is generated internally and available at the clock outputs for driving the input pattern generator or as trigger signal. If the clock output signal is used for driving the input pattern generator the adjustable delay allows to control the timing of the input data.

## Block Diagram

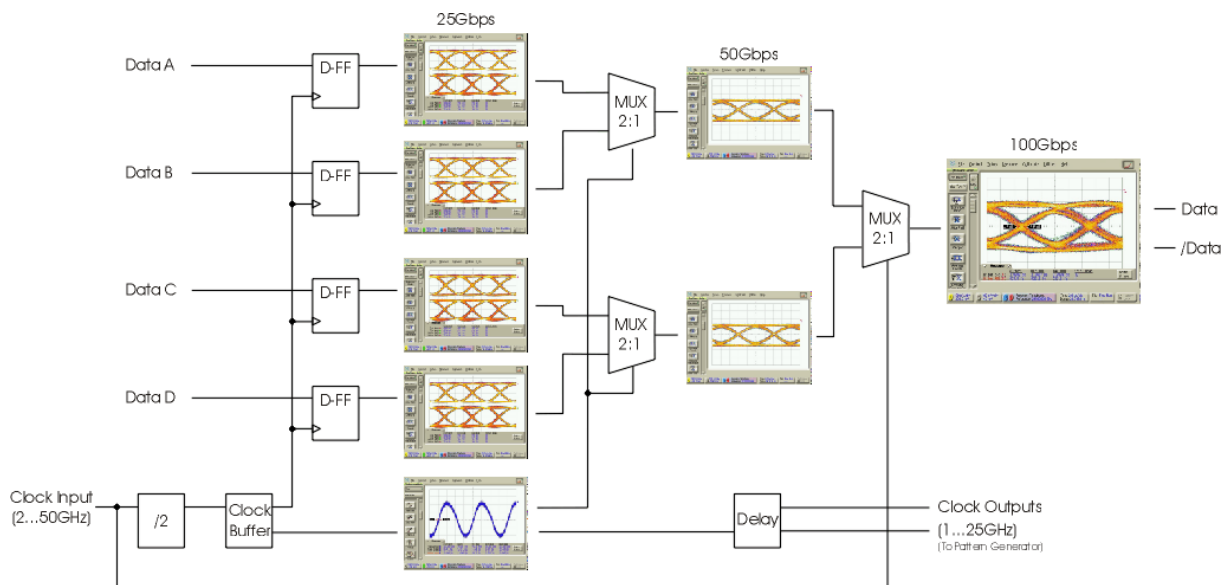


Figure 1: Block Diagram

## Technical Data

100 Gbps 4:1 Multiplexer	
Data Rate	4 Gbps ... 100 Gbps, gap free
Clock Input	2 GHz ... 50 GHz, Clock Input Frequency = (Data Rate)/2, $U_i = 0,5 \dots 1 V_{pp}$ , $Z_i = 50 \Omega$ , $ r  < 0,2$ , AC-coupled, 50 $\Omega$ 2.4 mm
Data Inputs	4 Single-Ended Data Inputs (A, B, C, D), 1 Gbps ... 25 Gbps, $U_i = 0.4 \dots 1 V_{pp}$ , $Z_i = 50 \Omega$ , $ r  < 0,2$ DC-Coupled, 50 $\Omega$ 2.92 mm (K)
Data Outputs	Data and /Data, 0.4 $V_{pp}$ Single-Ended, DC-Coupled, 50 $\Omega$ 1.85 mm (V), Rise-/Fall-Times (20 %/80 %) < 5 ps Jitter (rms) < 750 fs
Clock Outputs	Data Rate/4 and /Data Rate/4, 0.5 $V_{pp} \pm 0.1 V$ , AC-Coupled, 50 $\Omega$ 2.92mm (K)
Power Supply	External -5 V Power Supply
Dimensions	Aluminium Case, W x H x D = 115 mm x 48 mm x 175 mm

## Output Signals

All oscillograms taken using Agilent 86100B sampling oscilloscope with sampling module 86118A (70 GHz cut-off frequency).

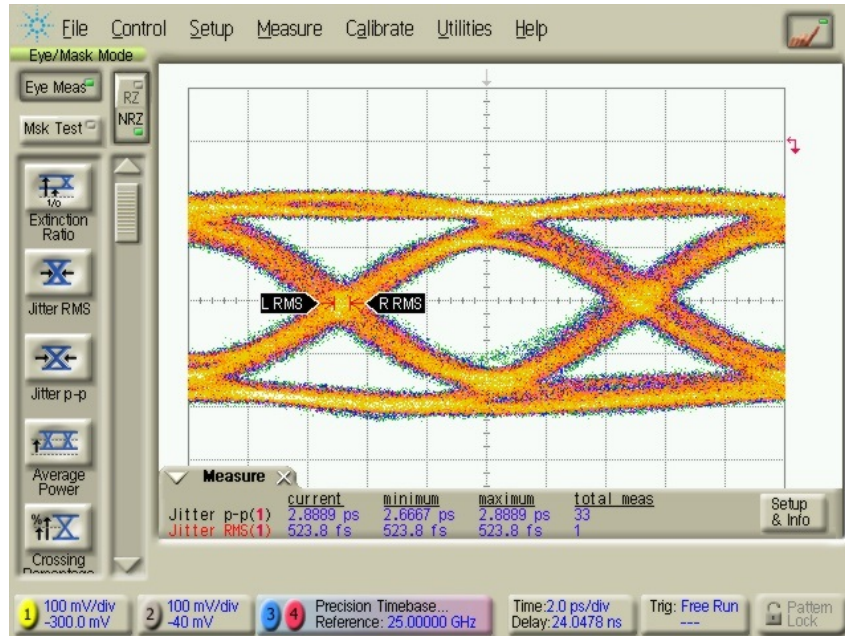


Figure 2: 100 Gbps Output Eye

## Ordering Information

SYMPULS GmbH

Römerstr. 39  
D-52064 Aachen

Phone: +49 241 35334

Fax: +49 241 35335

Email: [mail@sympuls-aachen.de](mailto:mail@sympuls-aachen.de)

Internet: [www.sympuls-aachen.de](http://www.sympuls-aachen.de)

Included in delivery:

- 100GBit/s 4:1 Multiplexer
- -5 V Power Supply
- User Manual, USB Cable Set
- CD-ROM with Device Drivers and Operating Software

**The instrument is produced by SYMPULS in Germany.  
We offer a reliable service and 24 month warranty.**