

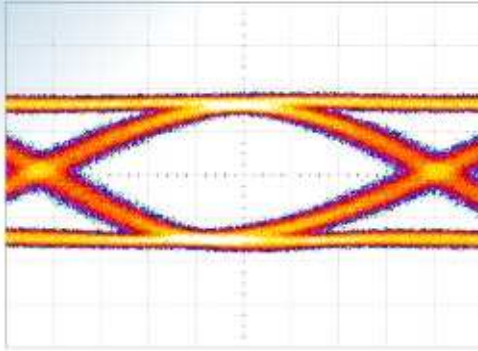


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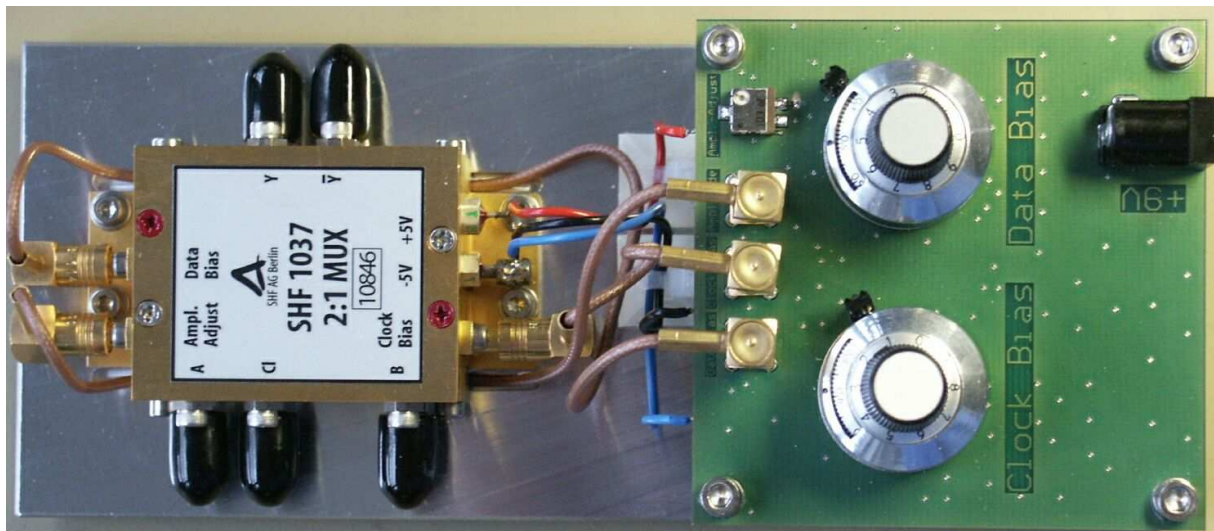
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# Datasheet

## SHF 1037 MUX

### 25 Gbps 2:1 Multiplexer Module



**SHF Communication Technologies AG**  
the bandwidth company





## Description

The SHF 1037 MUX is a 2:1 multiplexer which operates at data rates up to 25 Gbps for use in broadband test setups and telecom transmission systems. Two single ended data channels are accepted by the multiplexer at a nominal input data rate of 12.5 Gbps and combined into a 25 Gbps differential serial data stream. A single ended clock signal with a frequency of half the output data rate (nominally 12.5 GHz), drives the SHF 1037 MUX. All outputs are DC-coupled ground referenced CML signals with on-chip 50  $\Omega$  terminations. The data and clock inputs are AC-coupled and also include 50  $\Omega$  terminations.

The multiplexer is supplied as standard with a mains power adaptor and is mounted on an assembly with two potentiometers. This takes care of the power supply and allows the clock bias and data bias settings to be adjusted.

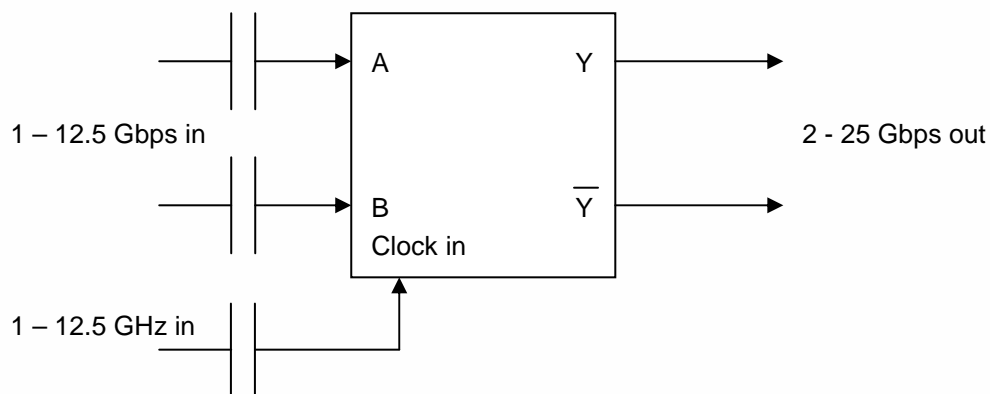
## Features

- GaAs FET technology
- Supports output data rates from 2 Gbps up to 25 Gbps
- Single ended AC-coupled inputs 500...1000 mV<sub>pp</sub>
- DC coupled complementary outputs

## Applications

- Broadband test setups
- Telecom transmission systems prototyping

## Block diagram



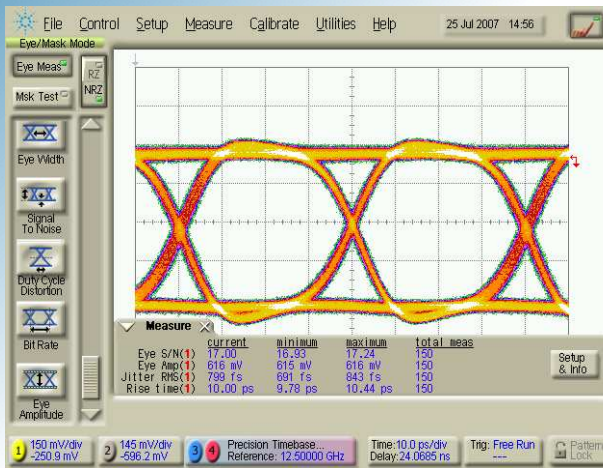


## Preliminary specifications – SHF 1037

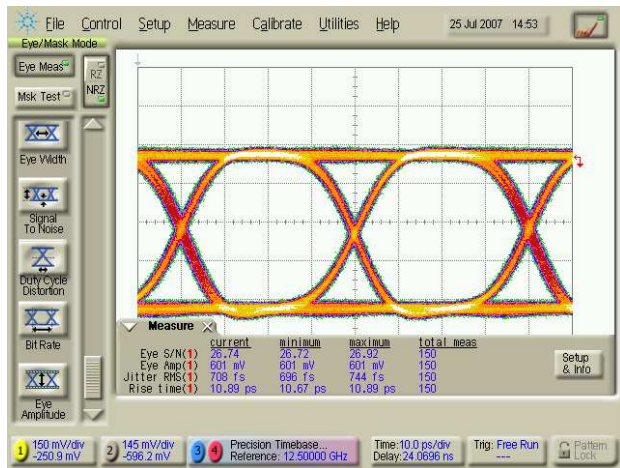
Parameter	Unit	Min.	Typ.	Max.	Conditions
<b>Input parameters (AC coupled)</b>					
Data rate	Gbps	1		12.5	
Eye amplitude	mV	500		1000	
Return loss	dB		t.b.d.		
<b>Output parameters (DC coupled)</b>					
Data bit rate	Gbps	2		25	
Voltage high level	mV		0		
Voltage low level	mV	-300		-600	
Eye amplitude	mV	300		600	
Rise time	ps		t.b.d.		20...80%, at 25 Gbps
Fall time	ps		t.b.d.		20...80%, at 25 Gbps
RMS jitter	fs			800	at 25 Gbps, indicated on oscilloscope
Return loss	dB		-10		
<b>Clock parameters</b>					
Input frequency	GHz	1		12.5	
Input level	mV <sub>pp</sub>	500		1000	
Input return loss	dB		t.b.d.		
<b>Power requirements</b>					
Negative supply voltage	V		9V		power supply included
Negative supply current	mA		t.b.d.		
Total power dissipation	W		t.b.d.		



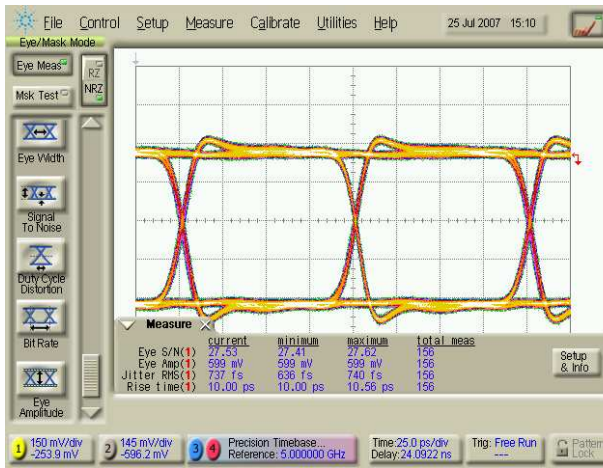
# Output waveforms



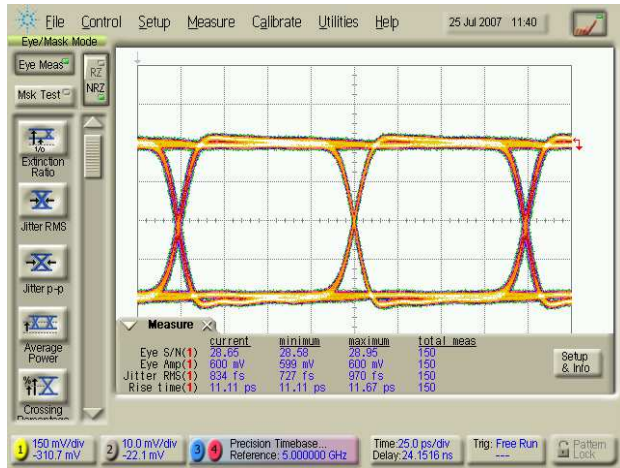
25 Gbps non-inverted output



25 Gbps inverted output



10 Gbps non-inverted output

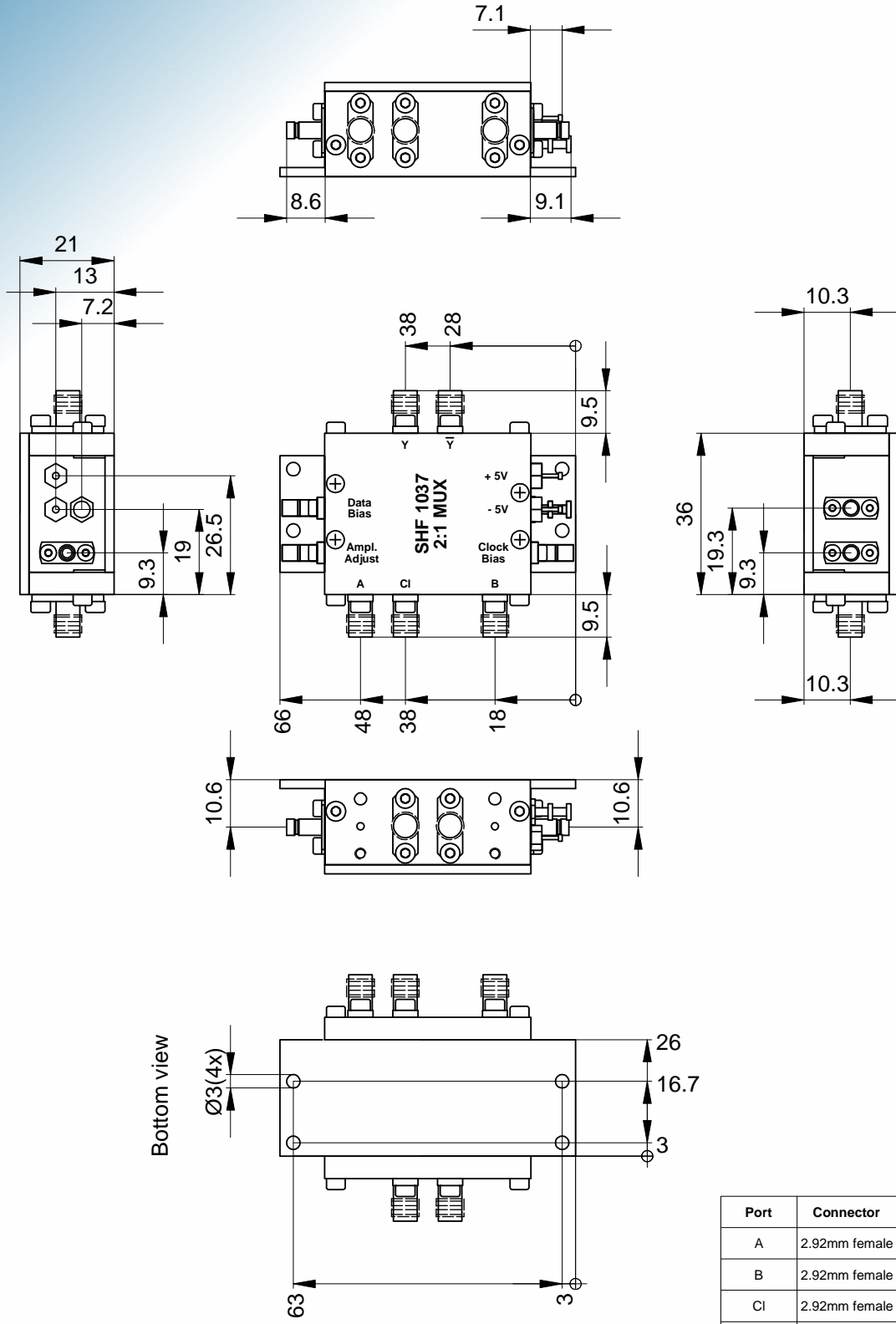


10 Gbps inverted output

Measured using Agilent DCA 86100A, sampling module 86118A [70 GHz], precision timebase module 86107A, + 50GHz cable assembly (0.5m) + 10 dB attenuator



# Module outline



Port	Connector
A	2.92mm female
B	2.92mm female
CI	2.92mm female
Y	2.92mm female
$\bar{Y}$	2.92mm female

Please ensure that adequate cooling of the multiplexer is guaranteed. We recommend a heat sink with a thermal resistance of approx. 3 K/W

All dimensions in mm