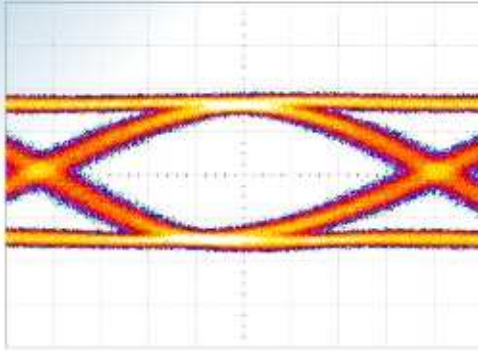


# SHF Communication Technologies AG

Wilhelm-von-Siemens-Str. 23 • Aufgang D • 12277 Berlin – Marienfelde • Germany

Phone ++49 30 / 772 05 10 • Fax ++49 30 / 753 10 78

E-Mail: [sales@shf.biz](mailto:sales@shf.biz) • Web: <http://www.shf.biz>



## Datasheet

### SHF 430 DFF

### 50 Gbps D-type Flip-Flop Module





## Description

The SHF 430 DFF is a D-type flip-flop module capable of broadband operation up to 50 Gbps.

## Features

- Broadband operation up to 50 Gbps
- 450 mV single ended output signal swing
- Low power consumption
- Fast rise time
- Single power supply

## Applications

- SONET OC-768 and SDH STM-256
- Broadband test and measurement equipment

## Specifications

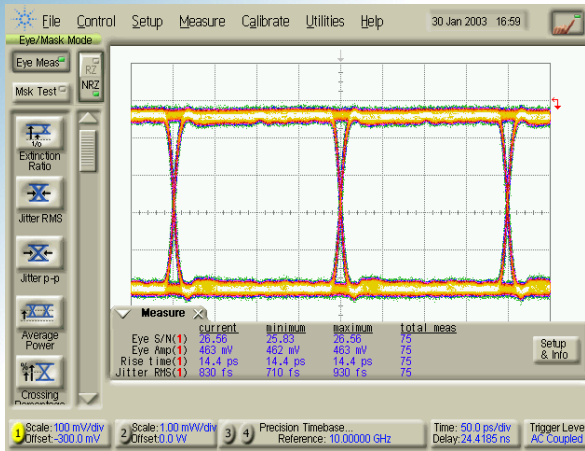
Parameter	Symbol	Unit	Min	Typ	Max	Conditions
<b>Electrical</b>						
Data rate		Gbps	2		50	10 <sup>-12</sup> BER, NRZ format
Data input voltage	D <sub>in</sub>	mV	300		1000	
Input return loss	S <sub>11</sub>	dB			10	<25 GHz
Clock frequency		GHz	2		50	
Clock input voltage	CLK <sub>in</sub>	mV	500		1000	
Data output voltage	D <sub>out</sub>	mV	350	450		single ended
Rise/fall time	t <sub>r</sub> /t <sub>f</sub>	ps		9		20...80%
Random jitter	J <sub>r</sub>	fs		500	600	RMS
Output return loss	S <sub>22</sub>	dB			10	<25 GHz
Data bias adjust		V	-5	-2.5	0	
<b>Operating conditions</b>						
Power supply	V <sub>ee</sub>	V	-6	-5	-4.5	
Case temperature	T <sub>case</sub>	°C	10		50	
Power consumption		mW		850		
Dimensions		mm				66x36x21 plus connectors

Input connectors: V (1.85 mm) female, AC coupled  
 Output connectors: V (1.85 mm) female, DC coupled

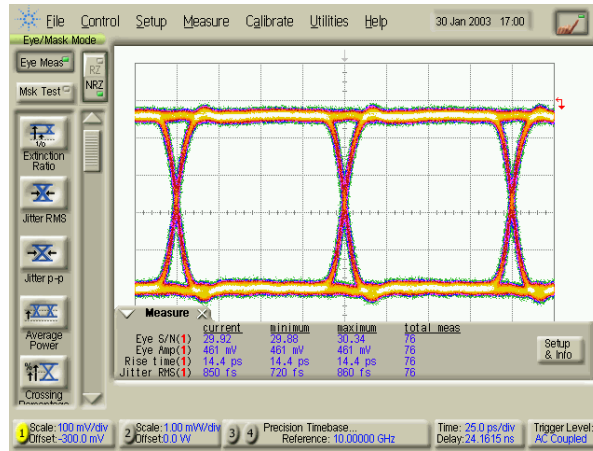


# Output waveforms

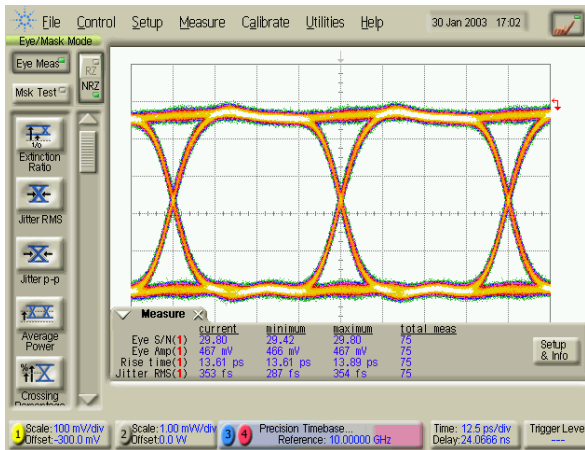
Measured using Agilent DCA 86100B, sampling module 86116A [63 GHz], precision timebase module 86107A (20 and 40 Gbps), 0.5 m microwave cable assembly, 10 dB attenuator, Rise Time measurement 10%/90%



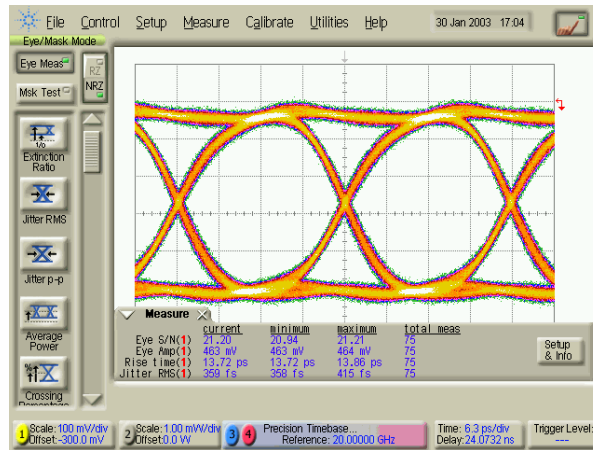
Bit rate = 5 Gbps



Bit rate = 10 Gbps

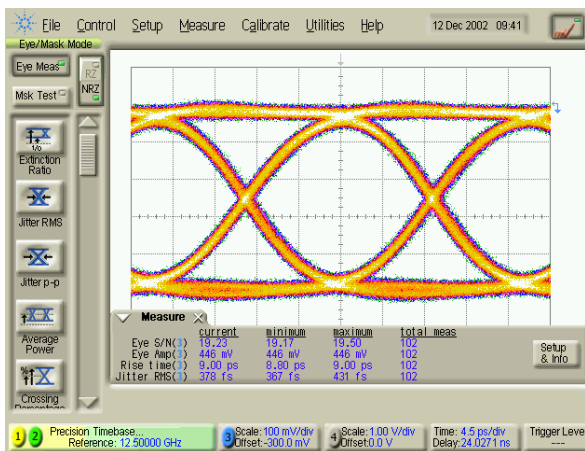


Bit rate = 20 Gbps



Bit rate = 40 Gbps

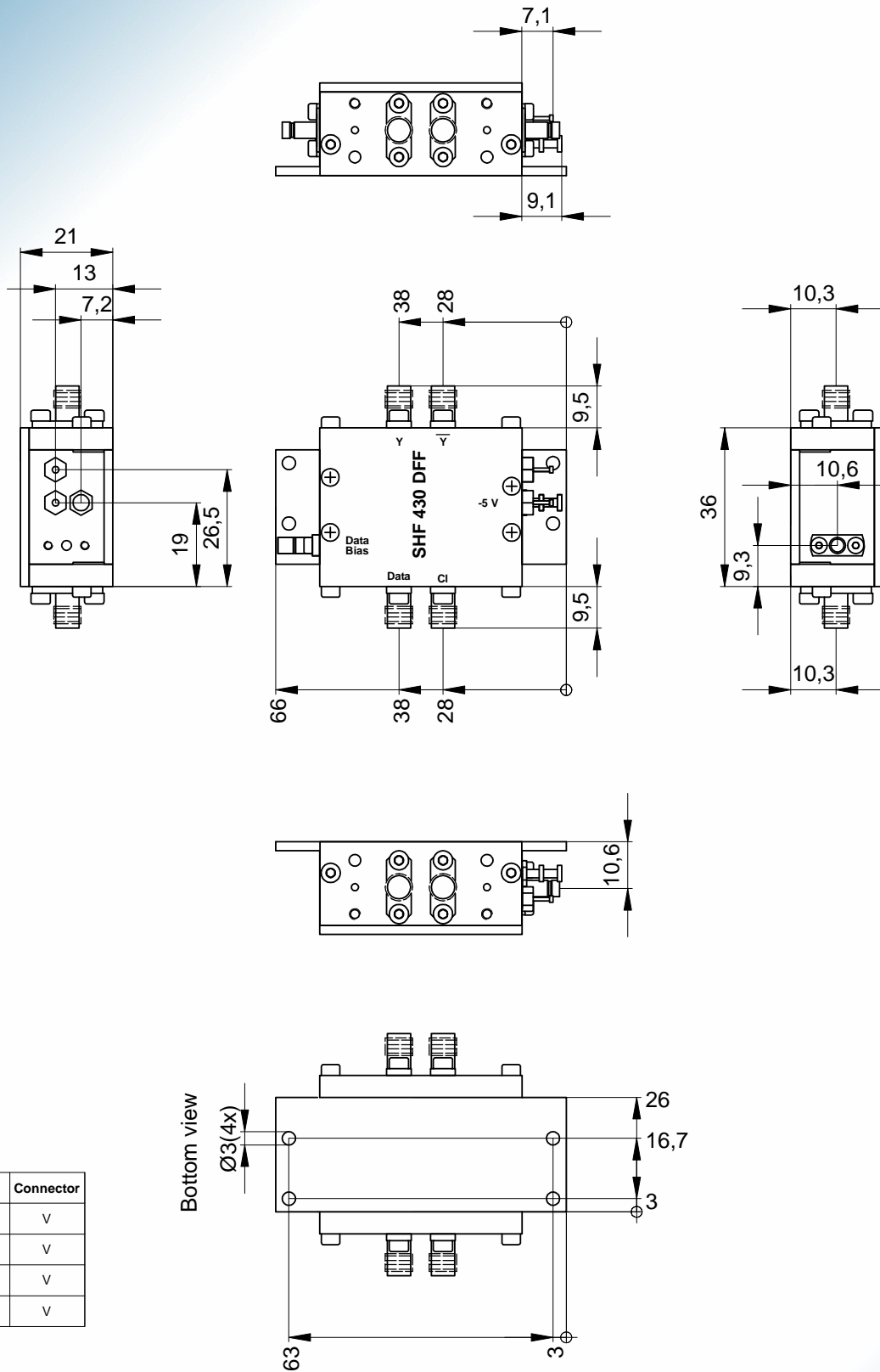
Measured using Agilent DCA 86100B, sampling module 86118A [70 GHz], precision timebase module 86107A, 0.5 m microwave cable assembly, 10 dB attenuator, Rise Time measurement 20%/80%



Bit rate = 50 Gbps



# Module outline



All dimensions in mm