

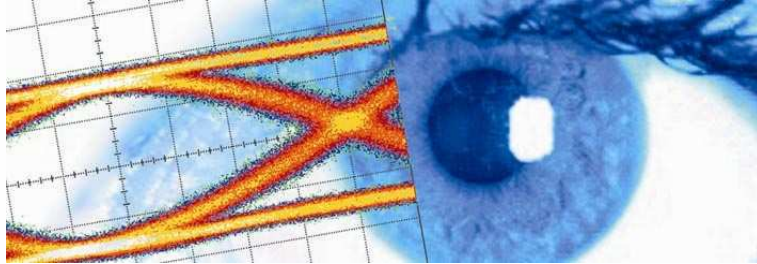


## SHF Communication Technologies AG

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

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

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



# SHF Clock Recovery Product Overview





## Description

To provide our customers with a complete solution for all applications in optical transmission research from one source, SHF offers a family of clock recovery instruments.

The clock recovery instruments complete our product range of high speed BER test systems, optical transmitters and receivers. The performance of SHF clock recovery solutions is proven for NRZ, RZ and CS-RZ signals in ASK and DPSK, for Duobinary data streams and for loop experiments.

Clock recovery plug-ins to be hosted in an SHF mainframe are available as well as a compact stand alone bench-top instruments. Both have the same capabilities, features and specifications. In addition to the pure electrical instrument, we are offering clock recoveries with an optical front end.

## 40 Gbps Clock Recoveries

### General Features

- Gap free operating bit rate range from 39.5 to 44.5 Gbps
- Clock output frequency at  $\frac{1}{2}$  and  $\frac{1}{4}$  of the nominal input data bit rate
- Full clock output available as option
- Clock Output level 500 mV<sub>pp</sub> typ, RMS jitter 500 fs typ
- Excellent input sensitivity of 50 mV
- 3 built-in reference frequency oscillators for 39.813, 42.65 & 43.018 Gbps
- External reference signal required for user specific bit rate within the band at bitrate/64
- Locking range of  $\pm 4$  MHz
- Maximum dead zone (absence of data) 8  $\mu$ s
- Built-in auto-reset feature. No training sequence required
- All features computer controlled

### Form Factors

SHF 41210 B



- Pure electrical clock recovery with an optional independent optical receiver
- Field replaceable plug-in for SHF mainframes
- Available as
  - Clock recovery only
  - ASK receiver only
  - Clock recovery & receiver

SHF 11120 C



- Pure electrical bench-top clock recovery
- Local or remote operation via Ethernet-connection to a PC (SHF BERT Control Center)

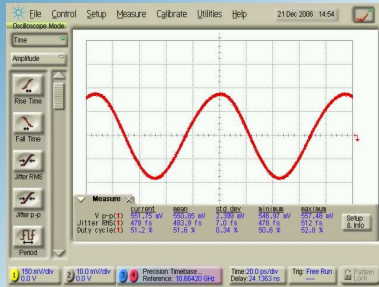
SHF 11121 A



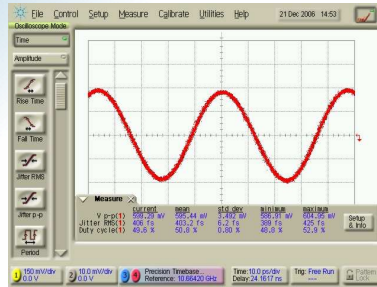
- Bench-top clock recovery with optical front end
- Optical input is put through with a minimum of attenuation. A small portion of the optical signal is tapped and used to recover the clock.
- Ideal complement for high speed DCAs with an optical sampling input and electrical triggering.
- Local or remote operation via Ethernet-connection to a PC (SHF BERT Control Center)



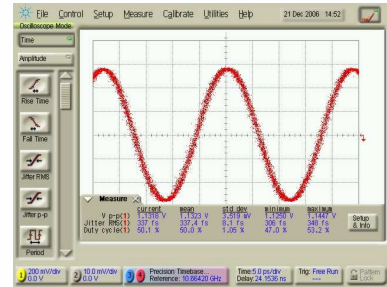
## Typical Output Signals



Clk/4 Out @ 10.684 GHz



Clk/2 Out @ 21.328 GHz



Clk Out @ 42.656 GHz

## 28 & 25 Gbps Clock Recoveries

### General Features

- Gap free operating bit rate range 19 to 26 Gbps (option CR25) or 25 to 32 Gbps (option CR28)
- Clock output frequency at full, 1/2 and 1/4 of the nominal input data bit rate
- Internal reference clock for the whole bit rate range
- All features computer controlled

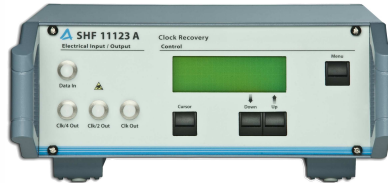
### Form Factors

#### SHF 41211 A / SHF 41211 C



- Pure electrical clock recovery with an optional independent optical receiver
- Field replaceable plug-in for SHF mainframes
- Available as
  - Clock recovery only
  - ASK receiver only
  - Clock recovery & receiver
- **SHF 41211A:**  
Optical receiver with a single ended output
- **SHF 41211C:**  
Optical receiver with a differential output

#### SHF 11123 A



- Pure electrical bench-top clock recovery
- Local or remote operation via Ethernet-connection to a PC (SHF BERT Control Center)

#### SHF 11124 A



- Bench-top clock recovery with optical front end
- Optical input is put through with a minimum of attenuation. A small portion of the optical signal is tapped and used to recover the clock.
- Ideal complement for high speed DCAs with an optical sampling input and electrical triggering
- Local or remote operation via Ethernet-connection to a PC (SHF BERT Control Center)



The SHF 10000 Series bit error rate test platform received the 2008 Best Practices Award from Frost & Sullivan for an outstanding product line strategy. SHF is proud of being recognized with this prestigious award for systems designed for engineers by engineers.

## SHF Communication Technologies AG

Wilhelm-von-Siemens-Str. 23D  
12277 Berlin  
Germany

Phone: ++49 30 / 772 05 10

Fax: ++49 30 / 753 10 78

E-Mail: [sales@shf.de](mailto:sales@shf.de)

Web: <http://www.shf.de>