Semight INSTRUMENTS

56Gbaud Clock Recovery Unit

CR6256 Datasheet V1.15

Excellent performance desktop clock recovery unit for either optical or electrical high-speed signals test;

Clock recovery from 24.33~56.25 Gbaud PAM4/NRZ signal;

Support both Single-mode and Multi-mode;

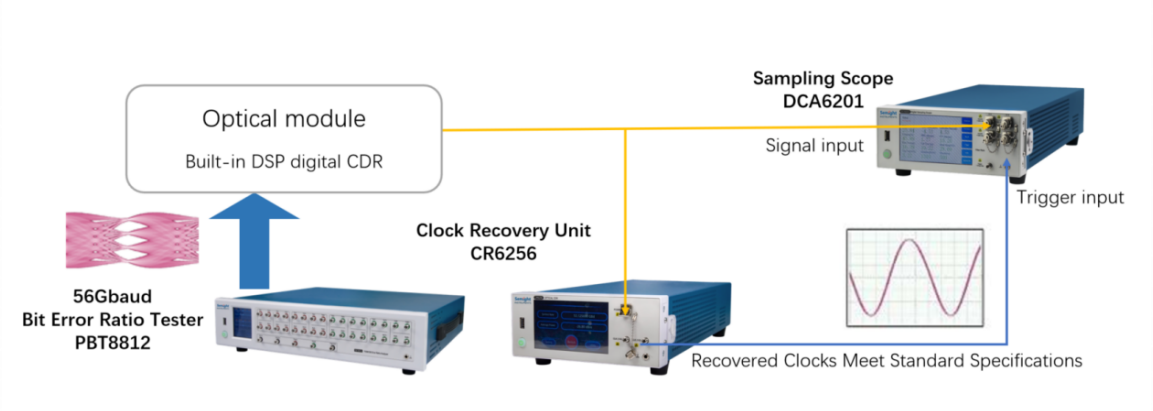
Auto / Semi-Auto signal locking;

Content

1 Product Description

Semight CR6256 is a compact, cost-effective and efficient desktop high-speed signal clock recovery unit, which supports either Non-Return-to-Zero (NRZ) or Pulse Amplitude Modulation 4-level (PAM4) signals clock recovery at 24.33-56.25Gbaud. It is widely used in 400G/800G optical transceiver and Interface test and measurement.

Benefiting from its high sensitivity, low intrinsic jitter, and excellent measurement accuracy, the CR6256 is able to recover clocks from closed-eye signals.



Optical transceiver with built-in DSP/CDR requires the use of a clock recovery unit (4×56 Gbaud or8×56 Gbaud PAM4)

2 Key Features and Advantages

Flexible Configuration

- Single-Mode and Multi-Mode in one unit;
- Support both optical and electrical signal clock recovery (optional);

Wide Range

Supports NRZ/PAM4 signal clock extraction at 24.33~56.25 Gbaud;

Excellent Performance

- Fast locking speed under auto/semi-auto mode;
- Ultra Low random jitter;

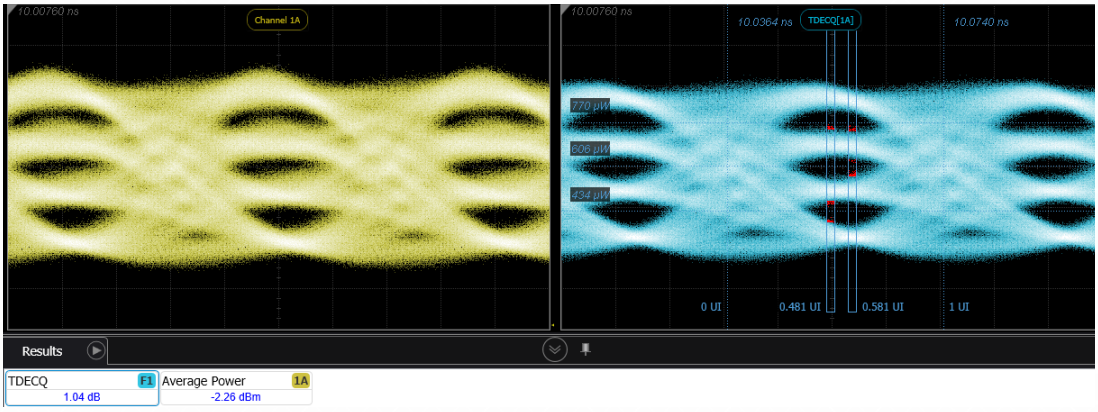


Figure 2 53.125 Gbaud Eye Diagram (TDECQ=1.51 dB)

High Sensitivity

Very conducive to silicon photonic application with ultra-low input optical power;

Wide Application

Complies with IEEE 802.3 Ethernet, PON, Fiber Channel, and OIF standards for 100G/200G/400G/800G and 25G/50G PON optical transceivers testing;

Easy to Use

With either touch lcd screen or flexible remote-control solution, the CR6256 can work with sampling oscilloscopes easily and quickly.

3 Technical Specification

Technical Specification

Item	Description
Data Rate Input Range	24.33024 ~ 28.9 Gbaud; 49.7664 ~ 56.25 Gbaud;
Modulation	NRZ/PAM4
Optical Interface	FC/UPC
Electrical Interface	2.92 mm female，50 Ω
Optical Input Power Range	-12 ~ +5 dBm
Optical Sensitivity	-10 dBm @ 53.125 Gbaud PAM4/850 nm; -12 dBm @ 53.125 Gbaud PAM4/1310 nm; -12 dBm @ 26.5625 Gbaud PAM4;
Wavelength Range	800 ~ 1650 nm
Factory Calibrated Wavelength[1]	850/1310 ±10 nm
Recovery Clock Divide Ratio	1/2，1/4，1/8，1/16
Recovered Clock Amplitude	300 mVpp
Recovered Clock Random Jitter	≤230 fs
Clock Output Characteristic Impedance	50 Ω
Loop Bandwidth	*4 MHz (typical)*

[1] ±10 nm refers to the Calibration Light Source wavelength error

General Specification

Item	Description
Use	Indoor
Operating	Temperature: 0℃ to +40℃ Humidity: 30% to 80% @non-condensing
Storage	Temperature: -30℃ to 70℃ Humidity: 10% to 90%@non-condensing
Altitude	Operating: 0 m to 2000 m, Storage: 0 m to 4600 m
Line Power	Voltage Range: 100-240 VAC, Frequency Range: 50/60 Hz Maximum Power: 250 W
Calibration Period	2 Years
Dimensions (Length*Width*Height, mm)	450*212*105 (With handles and feet)
Weight	4.9 kg (10.8lb) (Typical)

4 Ordering Information

Options

Option Type	Code	Description
Signal Type (choose one)	SM	Single Mode Only
	MM	Single Mode and Multi-Mode in one unit
	E01	Electrical Clock Recovery

Hardware Option	H02	Support Dual Clock Recovery Outputs
Software Option	Autolock	Automatic locking mode
Service Option (choose one)	R3C	Extended warranty and service plan - 36 months
	R5C	Extended warranty and service plan - 60 months

5 Warranty Terms

No.	Item	Description	Period
1	Mainframe Warranty Period	Free of Charge during the warranty period (excluding static electricity or human damage)	12 months
2	Calibration Period	Return to the factory for calibration or bring the calibration system for on-site calibration	24 months

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