

CR6256

56Gbaud Clock Recovery Unit

Version 1.12

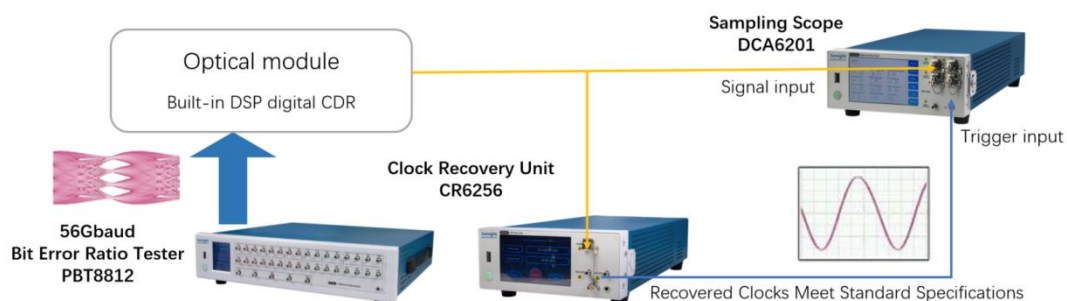


Product Description

Semright Instruments CR6256 is a compact, cost-effective desktop high-speed signal clock recovery unit, which supports to derive a clock from either non-return-to-zero (NRZ) or pulse amplitude modulation 4-level (PAM4) signals and is very suitable for measurement of various high-speed communication standard rate optical transmitters.

CR6256 offers wide data rate range of up to 56Gbaud, which is ideal for either 100GBASE DR1/FR1 or 400GBASE DR4/FR4/LR4 Transceivers test.

The product is characterized by low cost, simple operation and easy-to-use functions. CR6256 provide high sensitivity and low intrinsic jitter performance that ensures optimal measurement accuracy.

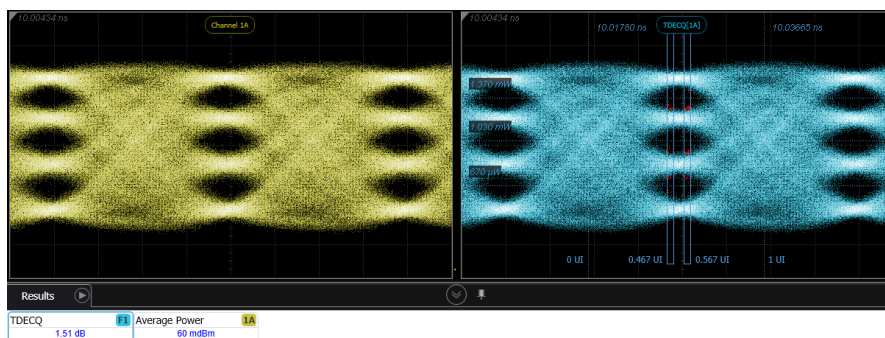


Optical modules with built-in digital DSP CDR must use clock recovery unit to extract the clock
(4×56 Gbaud or 8×56 Gbaud PAM4)

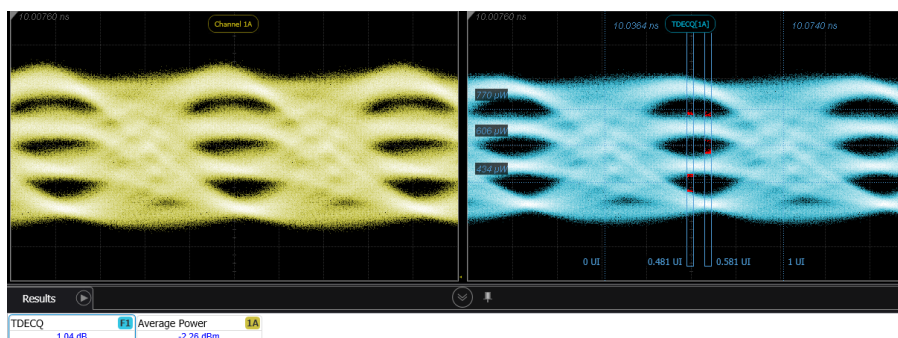
Key Features

- Flexible configuration: Single-Mode and Multi-Mode in one box; support both optical and electrical clock recovery(optional); support Built-in optical splitter (optional);

- Broad bandwidth: support clock extraction from NRZ / PAM4 signal at 24.8832~32.5 Gbaud or 49.7664~56 Gbaud;
- Excellent performance: fast locking, full/semi-auto locking mode; very low random jitter;
- High sensitivity: very ideal for the low optical power application like silicon photonics;
- Convenient usage: Friendly built-in touch screen; Can be easily used together with other sampling oscilloscopes;
- Wide range of applications: comply with IEEE802.3 Ethernet, fiber Channel and OIF standards; Ideal for the test requirements of 100G/200G/400G/800G transceivers; 25G/50G PON test is covered as well;



53 Gbaud Recovered Eye Diagram (TDECQ=1.51 dB)



26.5625 Gbaud Recovered Eye Diagram (TDECQ=1.04 dB)

Technical Specification

| | | |
|--------------------------|--|---|
| Technical Specifications | Clock recovery rate range ① | 24.8832 ~ 32.5 Gbaud, 49.7664 ~ 56 Gbaud |
| | Support modulation type | NRZ/PAM4 |
| | Optical interface | FC/UPC |
| | Electrical interface | 2.92 mm female, 50 Ω |
| | Input optical signal power range | -14 ~ 3 dBm |
| | Receiver sensitivity | -12 dBm @ 53.125 Gbaud PAM4; -14 dBm @ 26.5625 Gbaud PAM4; |
| | Input wavelength range | 850 ~ 1650 nm |
| | Optical interface return loss | <-23 dB |
| | Recover clock division ratio ② | 1/2, 1/4 @ 53.125 Gbaud; 1/1, 1/2 @ 26.5625 Gbaud; |
| | Clock output amplitude | 300 mV |
| | Random jitter of recovered clock ③ | 290 fs |
| | Characteristic impedance of clock output port | 50 Ω |
| Loop filter bandwidth ④ | 4 MHz | |
| General Specifications | Usage | Indoor |
| | Working condition | Temperature: 0 ~ +40 $^{\circ}$ C, |

| | | |
|--|---------------------------|---|
| | | Humidity: 30%~80% with no condensation |
| | Altitude | Operation: 0m to 2000m; Storage: 0m to 4600m |
| | Power supply | LINE: 100-240 VAC, 50/60 Hz, 250 W FUZE: T3.15AL 250 VAC |
| | Calibration period | 2 years |
| | Dimensions (D x W x H) mm | 450*212*105 (with foot pad/handle) |
| | Weight | Net weight 4.9 kg |

*** -28G Options**

| | |
|--------------------------------|---|
| ① Clock recovery rate range | 25.7 ~ 28.9 Gbaud |
| ② Recover clock division ratio | 1/2, 1/4, 1/8, 1/16 optional for software |
| ④ Loop filter bandwidth | 4 MHz & 10 MHz |

*** H00 Options**

| | |
|------------------------------------|---|
| ② Recover clock division ratio | 1/2, 1/4, 1/8, 1/16 optional for software |
| ③ Random jitter of recovered clock | 230 fs |

Ordering information

| | |
|-----|--|
| -SM | Single-mode |
| -MM | Single-mode and Multi-mode integration |

| | |
|-----------|--|
| -28G | 28G option as Table 2 specified |
| -56G | 56G option as Table 1 specified |
| -E01 | Electrical signal clock recovery |
| -S01 | Built-in 50%:50% Optical splitter |
| Examples: | CR6256-MM-56G (Default configuration, 56G, single-mode and multi-mode integration) |
| | CR6256-MM-28G (28G version) |
| | CR6256-56G-E01 (Electrical signal clock recovery version) |
| | CR6256-SM-56G-S01 (Single-mode 56G, built-in 50%:50% optical splitter) |

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*This information is subject to change without notice.