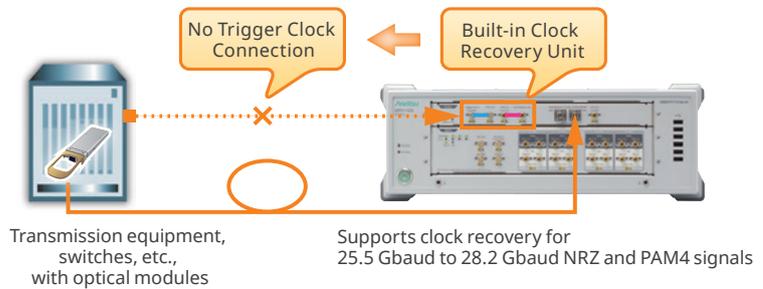


Sampling Oscilloscope with Built-in Clock Recovery Unit

Clock Recovery (Electrical/Optical) MP2110A-054
BERTWave MP2110A



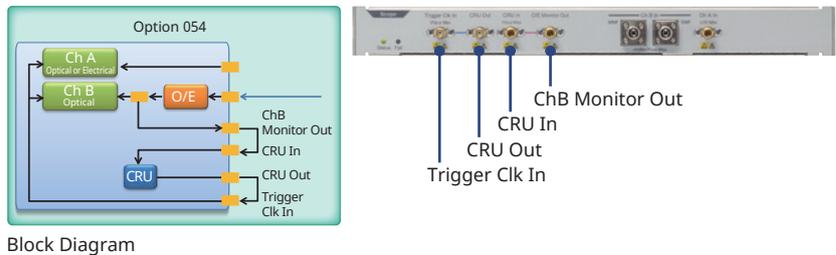
A sampling oscilloscope requires input of a trigger signal but this Clock Recovery Unit (CRU) can be used to recover this trigger signal from the Data signal. This CRU option can be installed in the sampling oscilloscope of the BERTWave MP2110A.



Features

Easy to Use

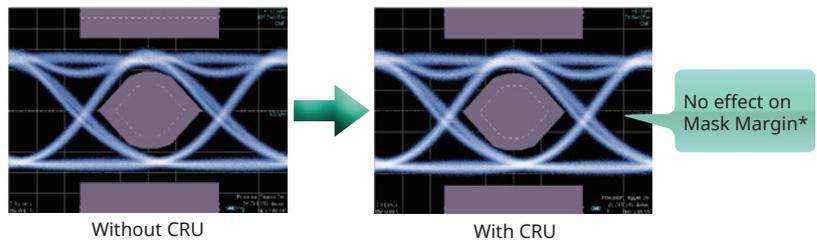
Clock recovery is supported using one unit for both NRZ and PAM4 signals at 100/200/400 GbE (25.5 Gbaud to 28.2 Gbaud). The all-in-one internal CRU design is easier to use than competing designs with an external CRU because there is no need to make connections and settings at the external CRU. The all-in-one design also helps cut instrument costs.



- * Optical Channel: The clock of the optical signal input to ChB is recovered. The connection is made as shown above using the standard accessory U-link coaxial cable.
- * Electrical Channel: The signal is divided using a Pick off tee for input to CRU In. There is no Monitor Out connector when ChB is an electrical channel.

High Sensitivity

Splitting the signal for CRU input to the optical channel is performed at the electrical signal after O/E conversion. Splitting the electrical signal cuts the number of required optical modules and helps reduce costs. In addition, at multimode, there is no waveform degradation caused by multimode dispersion resulting from use of optical divider circuits using optical couplers, etc. Using high-sensitivity modules and optimizing the internal divide ratio helps minimize the impact of insertion loss on the monitored waveform and is convenient for monitoring waveforms at the required sensitivity.



*: Comparison at -2 dBm input

Target Applications

- When trigger signal unavailable (transmission equipment, switches, etc., without Clock output)
- When unable to use trigger signal (signal monitoring after long-distance transfer, poor-quality trigger signal, etc.)

Specifications

Data Format	NRZ, PAM4
Bit Rate	25.5 Gbaud to 28.2 Gbaud input, half rate clock output
Input Sensitivity	10 mVp-p (typ.)* ¹
Jitter Addition	250 fs rms (typ.)* ²
Insertion Loss	1.5 dBo (typ.)
Mask Sensitivity (with MP2110A-054)	SMF: -13.5 dBm, MMF: -10.5 dBm (typ.)* ³
Loop Band	Selectable from 4 MHz, 10 MHz, 1667 bit rate

*1: At NRZ, 25.78125 Gbit/s, PRBS 2³¹ - 1, Loop Band = 10 MHz, using MP2110A PPG

*2: At NRZ, 25.78125/26.5625/28.05 Gbit/s, 400 mVp-p ±100 mVp-p, 1/4 Clock Pattern, Loop Band = 10 MHz, using MP2110A PPG

*3: Estimated value of optical power when Mask Margin (Hit Count) reaches 0 %, SMF:1310 nm, MMF: 850 nm, OTU 4 Filter

Ordering Information

Please specify the model, name and quantity when ordering.

The names listed in the chart below are Order Names. The actual name of the item may differ from the Order Name.

Model	Name
MP2110A-054	Clock Recovery (Electrical/Optical)
MP2110A-154	Clock Recovery (Electrical/Optical) Retrofit

* This can only be installed in the MP2110A-x21/x22/x23/x25/x26/x32/x33/x35/x36 sampling oscilloscopes.
Retrofit requires return of the instrument to the Anritsu plant.