Semight

rBT1250

10G Burst Mode Bit Error Ratio Tester

Version 2.6

Product Description

Semight Instruments rBT1250 is specially designed for optical line terminal (OLT) test of passive optical network (PON) applications, and supports 1.25G EPON, GPON, 2.5G XGPON, Combo PON, 10G EPON and 10G XGSPON burst bit error testing and analysis.

rBT1250 provides three independent data pattern generators and bit error detectors, supports continuous mode or burst mode bit error analysis, and can simultaneous two burst ONU signal into one OLT receiver at the same time. It has flexible and adjustable timing and pattern for different testing case. And provide TX enable signal, RX reset signal and other low-speed control signals according to the device test requirements. Moreover, rBT1250 has built-in clock recovery, clock would be recovered from the burst data, this could be important with long fiber testing. rBT1250 greatly simplifies test setup, connectivity, and greatly reduce testing costs.

Key Features

- Support burst or continuous mode signal generation and bit error ratio testing;
- Data rate: 1.25/2.5/9.953/10.3125 Gbps;
- Support Combo-PON: the first burst bit error ratio tester supporting CPON in the industry;
- Support double reset: The reset position is adjustable (the minimum resolution is 3.2ns, and the set update rate is very fast);
- Support three groups of outputs simultaneously: 1.244G, 2.5G and 10G ports. Each group of ports is specific to different devices during the test, avoids inconvenience connections during test. Moreover, each group is independent of each other and serves as a backup channel for each other;
- Support LOS measurement: Each test channel has its own LOS monitoring channel, so that it can monitor SD (Signal Detect) signals and judge LOS;
- Support RSSI Trigger: RSSI Trigger position and pulse width are adjustable;

- Support CDR (clock recovery): Similar to actual OLT devices, it would perform clock recovery for each reception. The built-in clock recovery makes the rBT1250 to work in a real long fiber environment, this is different from other suppliers in the industry, which do not support clock recovery and cannot adapt to the impact of the long fiber on delay and jitter;

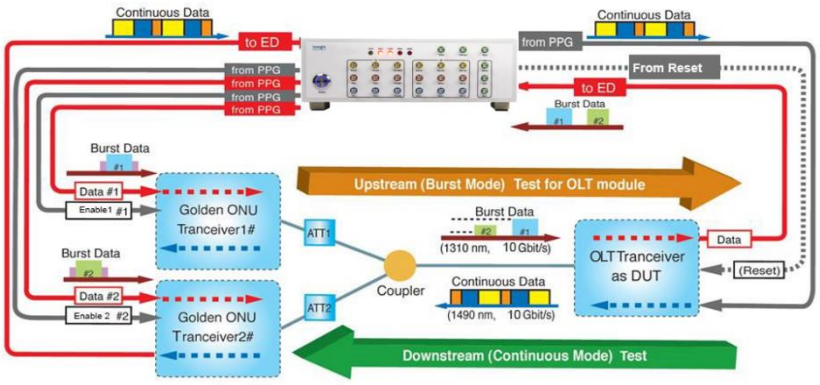

Figure1 rBT1250 Testing Diagram

Applications

- R&D and production testing of EPON, GPON, XGPON, Combo-PON, 10G PON and other OLT modules;
- Burst linear TIA chip test: It is necessary to verify the working state of TIA (transimpedance amplifier) devices in case of burst signal;
- Some occasions with special requirements for pattern timing;
- Multi-channel signal output, multi-channel signal pattern synchronization and time delay synchronization;
- SDI pattern or framing signal generation and bit error detection

Software function

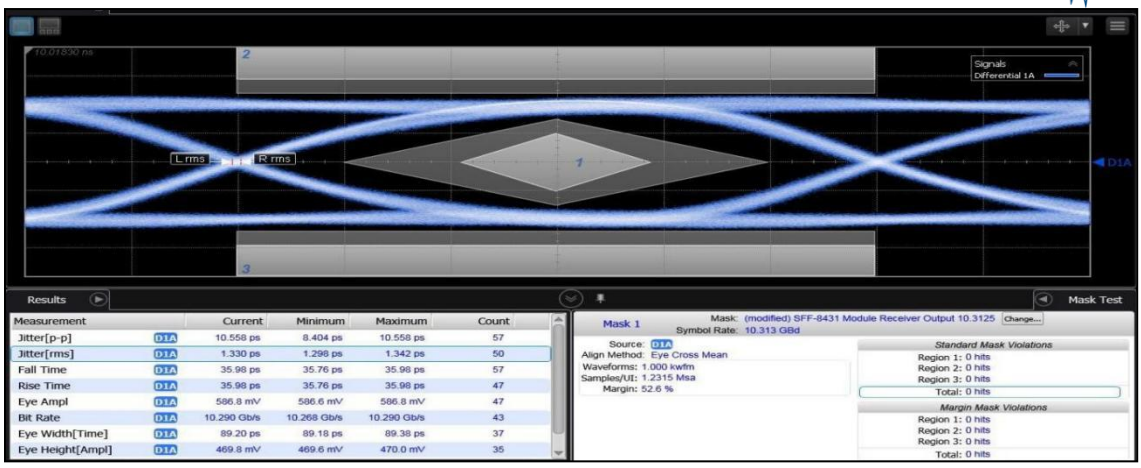

Figure 2 10G Eye diagram

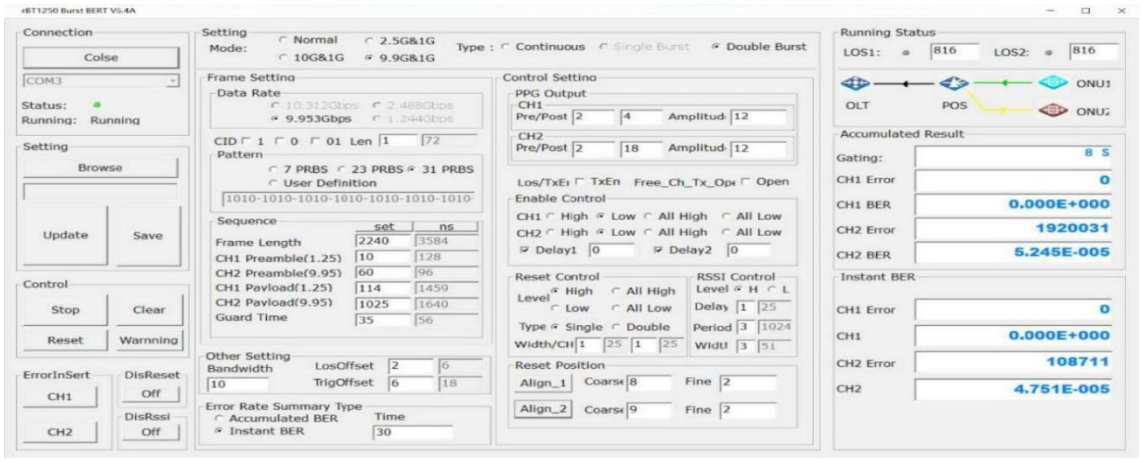

Figure 3 GUI mainframe

Technical Specifications

Pattern Generator Indicators	Output	Differential	AC/DC Coupling ； 100Ω Termination
		Single Ended	AC Coupling ； 50Ω Termination
	Output amplitude	100-600 mVp-p	Differential
	Output channel	3 independent Channels	Support Burst/Continuous mode signal generation
	Pattern	PRBS 7, 23, 31, User Defined Pattern, CID pattern	
	Support rate	1.25/2.5/9.953/10.3125 Gbps	
	Rise Time	<40 ps	20%~80%
	Jitter	<12 ps	Peak to peak Jitter
	Pre-emphasis (Pre & Post-Cursor)	Support pre-weighting adjustment to improve the impact of test cable test fixture on signal quality	
	Pattern sequence	Each channel supports independent preamble/dead load/protection time pattern sequence setting	
	CID pattern	Support add continuous “1”, continuous “0” pattern as length from 64-88 bits (adjustable)	
	Connector	SMA	
Clock/Trigger and Control	Trigger output	Support Frame Trigger output	
	Clock output	1/64 divided clock output	

Channel Indicators	Laser enable	Provide 3 groups of laser enable signal output (synchronized with corresponding pattern generator channel)
	Enable output level	TTL Level, support selection as High/Low and Continuous High/Low
	Reset signal output	Provide 3 reset signal outputs（each reset signal is synchronized with error receiver channel)
	Reset signal width	12.8~51.4 ns (meet a variety of standard needs)
	Reset signal position	Adjustable with resolution as 3.2 ns, support Auto-Range to find the right reset position
	RSSI trigger output	Support RSSI trigger (adjustable for RSSI trigger signal pulse width, repeat frequency and position)
Error Detector Indicators	Input type	Differential/Single-ended
	Data rate	1.25/2.5/9.953/10.3125 Gbps
	Impedance	100 Ω
	Amplitude	<800 mVp-p
	Sensitivity	>100 mV
	Clock mode	Built-in clock recovery
General	Environment	Indoor
	Work	0°C~+55°C, 30%~80% Relative Humidity with no condensation
	Storage	-30°C~70°C,10%~90% Relative Humidity with no

		condensation
	Altitude	Operation ： 0m to 2000m, Storage ： 0m to 4600m
	Power supply	LINE：100-240VAC,50/60Hz,250W FUSE：T2AL 250 VAC
	Warm-up time	10 minutes
	Dimensions （mm）	415*265*105 (with foot pad/handle)
	Weight	Net Weight 5.3 kg

Ordering Information

rBT1250		Burst Mode Bit Error Ratio Tester Host	
Data rate option		Upgrade option	
200	CPON Data rate (1.25G/2.5G)	U10	Upgrade 10G Data rate
300	10G Full data rate/Full functionality	U25	Upgrade 2.5G Data rate
D01	1.25G Data rate option	UCP	Upgrade CPON
D25	2.5G Data rate option		
D10	10G Data rate option		

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*This information is subject to change without notice.