



## BT6201 FOUR-CHANNEL 30GB/S BERT (V.2.5)

The STELIGENT **BT6201** is a high performance, easy to use, 4 Lanes, cost-effective, 4 x 30 Gb/s Bit Error-Rate Tester (BERT) for current 100 G TOSA/ROSA components R&D and manufacturing environments as well as field installations. It is fully features for characterizing crosstalk susceptibility, backplanes, and multi-lane serial data systems, and it is also a good tool for production testing of AOC and electro-optical modules.

The **BT6201** incorporates an internal reference clock, a pattern generator, clock recovery circuits, and a BER analyzer, in one compact module that provides both electrical and optical



interfaces at data rates up to 30 Gb/s.

The **BT6201** is offered with a TFT touch panel control or USB interface. The PPRBS outputs optical NRZ waveform with bit rate within 25 ~ 30 Gbps, with settable data pattern of  $2^7-1$ ,  $2^9-1$ ,  $2^{11}-1$ ,  $2^{15}-1$ ,  $2^{23}-1$ ,  $2^{31}-1$ , and a fixed 64-bit user-defined pattern. The BERT system is controlled by external computer via a USB port, with full software support, drivers and programming guide for automation.



## Key Features

- Four independent parallel BERT lanes;
- Standard measurement rates between 25Gb/s and 30Gb/s;
- Independent voltage level adjustment for each of the 4 outputs, refer to Generator Data Out table;
- Support all Industry PRBS pattern : 7, 9, 11, 15, 23, 31;
- Half rate Clock(high speed) and divided trigger output (low speed);
- Integrated clock data recovery;
- Ability to swap data input polarity;
- Fast Ethernet/ USB Interface via ML4000 Chassis;
- High signal quality, fast rise time and low intrinsic Jitter;
- BERT can be fully programmed and support for external API calls from other software e.g. LabView, C#, VEE;
- Repeatable performance and Traceable to standards;
- Controlled by embedded touchscreen GUI or from user software running on an external Windows 7 PC connected by a USB interface;

The STELIGENT BT6201 is a multi-channel signal integrity test system ideal for manual or automated characterizing multi-lane serial data channels or electrical and optical devices running at speeds between 25Gb/s to 30Gb/s(It addresses all common standard speeds via selectable bit rates).

## Target Applications

- Multi-lane serial data channels signal integrity characteristic;
- 100G CFP2, CFP4, QSFP28 line cards;
- 100G Active Optical Cable (AOC), Direct Attach Cable (DAC);
- Electro-optical Transceiver Testing;
- Design Validation Test (DVT) of Telecom / Datacom, Components, Modules and Systems;
- High-Speed SerDes Testing & Characterization;
- Installation and Maintenance Test of Network Equipment;
- Testing of optical transceiver modules (25G SFP+, QSFP28, 4X25G CFP2/CFP4), transponders, linecards, and subsystems;
- Testing of opto-electronic components and devices (TOSA, ROSA, lasers, etc...);
- Testing of Gb/s ICs, PCBs, electronic modules, subsystems, and systems;
- Serial bus and high-speed backplane design;
- Installation testing and troubleshooting in optical transport networks;

## System Specifications

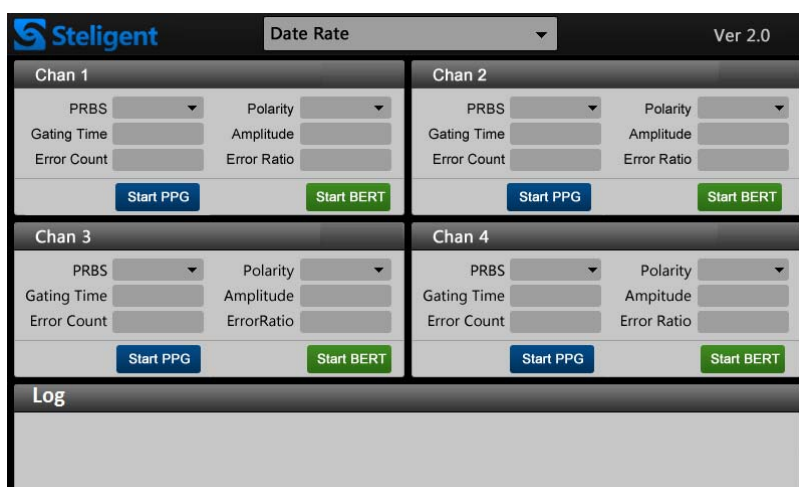
### Data rate

The Steligent BT6201 can address all common standard speeds via selectable bit rates between 25Gb/s and 30Gb/s. Any data rate within this range can be customized added.



### Operating system

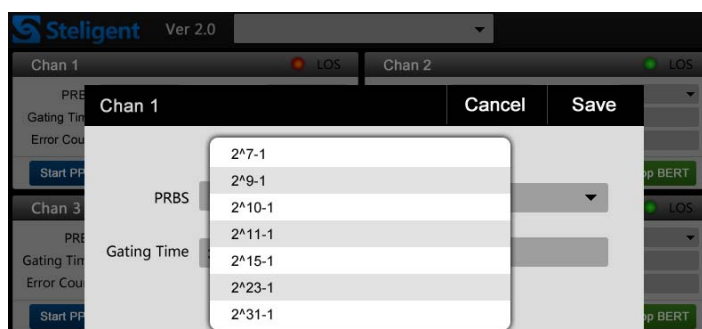
The software supplied runs on embedded Touchscreen GUI or Windows 7 with .NET v2.0, by a USB 2.0 interface.



### Pattern Generator

The following patterns are supported:  
 PRBS: 2<sup>7</sup>-1, 2<sup>10</sup>-1, 2<sup>11</sup>-1, 2<sup>15</sup>-1, 2<sup>23</sup>-1, 2<sup>31</sup>-1.

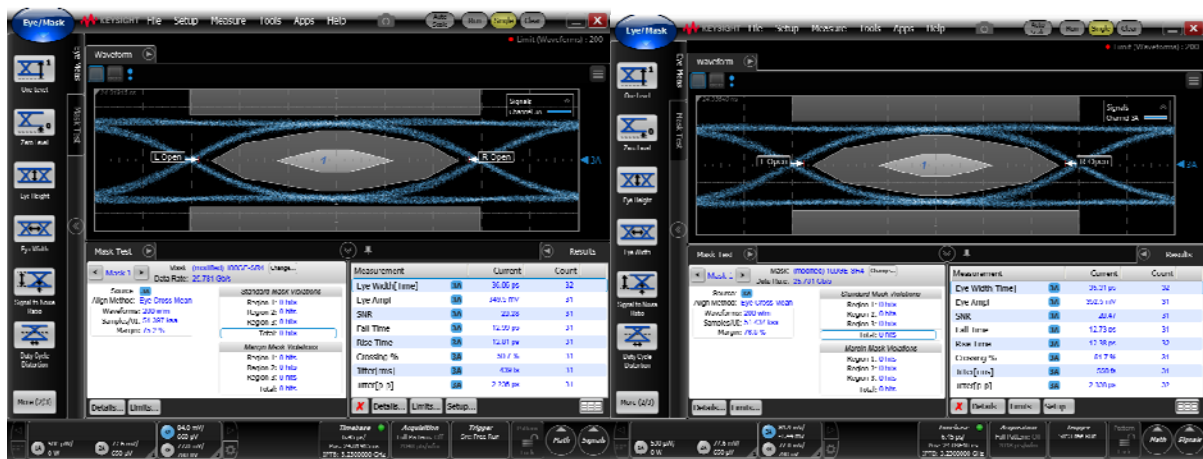
The pattern can be **individually** adjusted for pattern generator.



A differential electrical output is provided on the front-panel.

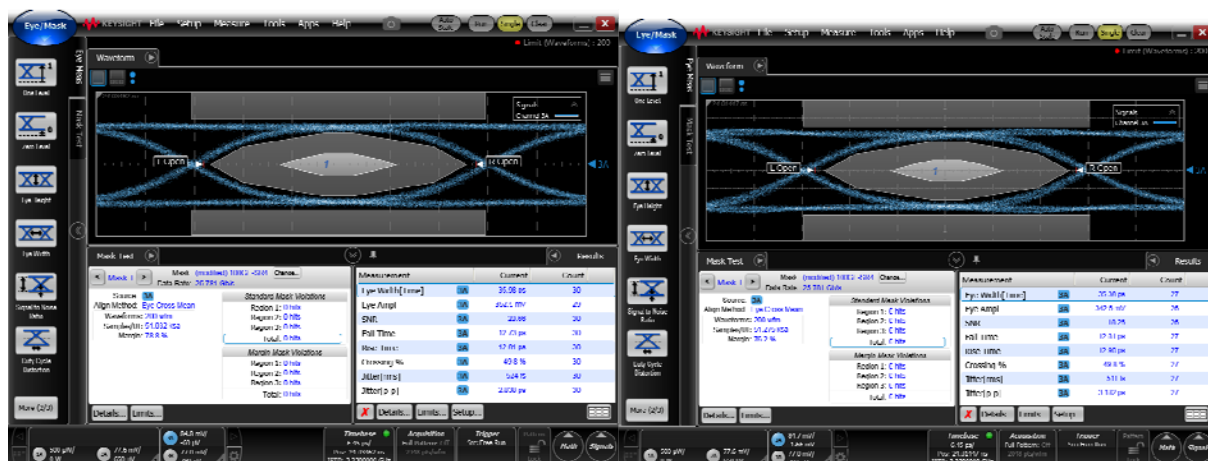
Data Output		
Output Type	Differential	AC coupled, 100Ω Termination
	Single-ended	AC coupled, 50Ω Termination
Amplitude	1000mVpp	Differential
Rise Time	12.48ps	20%~80%
Jitter	515fs	RMS Jitter
	3.18ps	Peak to Peak Jitter

DCA 86100D with build-in PTB module, N1054A Module, 450mm 2.92 Cable:  
**@ 25.78Gbps:**



Channel 1

Channel 2



Channel 3

Channel 4

### Pattern Generator Detailed Character:

Parameter	Min	Typ	Max	Units
<b>Data Output (Electrical)</b>				
Output Type	Differential			
Output Format	NRZ			
Termination	DC-Coupled			
Data Patterns PRBS	2 <sup>7</sup> -1, 2 <sup>9</sup> -1, 2 <sup>11</sup> -1, 2 <sup>15</sup> -1, 2 <sup>23</sup> -1, 2 <sup>31</sup> -1, user defined pattern			
Data Rates	» 100GBE 4x25.78Gb/s » OTU4 4x27.95Gb/s			
Frequency Accuracy			± 50	ppm
Output Amplitude (Differential)	160		800	mVp-p
Data Rise Time, (20 – 80%)		12		ps
Data Fall Time, (20 – 80%)		12		ps
Data Output RMS Jitter		515		fs
Connector	50ohm Nominal, K Female			
<b>Trigger Output</b>				
Output Amplitude	300			mVp-p
Output Type	Differential , AC-coupled			
Connector	50ohm SMA Female			

### Clock and Trigger output

A differential clock with half data rate and single-ended divided trigger output is provided on the front-panel.

### Error Detector

A differential electrical input is provided on the front panel. Data rate is the same as pattern generator.

The following patterns are supported:

<b>Data Input</b>	
<b>Input Type</b>	Differential
	Single-ended
<b>Impedance</b>	100Ω
<b>Amplitude</b>	1000mVpp
<b>Sensitivity</b>	<40mV
<b>Clock Mode</b>	Internal Clock Recovery
<b>Synchronization</b>	Automatically on level, phase
<b>Connector</b>	SMK, Front Panel

### Error Detector Detailed Character:

Parameter	Min	Typ	Max	Units
<b>Data Output (Electrical)</b>				
Input Type	Differential			
Termination	DC-Coupled			
Data Patterns PRBS	2 <sup>7</sup> -1, 2 <sup>9</sup> -1, 2 <sup>11</sup> -1, 2 <sup>15</sup> -1, 2 <sup>23</sup> -1, 2 <sup>31</sup> -1, user defined pattern			
Data Rates	» 100GBE 4x25.78Gb/s » OTU4 4x27.95Gb/s			
Data Input Amp (Differential)	40		1000	mVp-p
Clocking Mode	Built-in clock recovery			
Pattern Synchronization	Automatic			
Connector	50ohm Nominal, K Female			

### Ordering Information

#### Accessories Included

- User Software and Demo CD includes:
- Application Presentation
- Data Sheet
- User documentation (User Guide with programming reference)
- User Software including offline demonstration
- Local power cord, USB cable

### About Us

Steligent is involved to be a Global Leader on High Speed Serial Communication Bit Error Rate Tester. We provide test & measurement solutions to enable optical component and OEM/ODM/JDM and other system integrators to reach new levels of quality and performance. Steligent was founded 5 to address the growing need for affordable and functional equipment. Since that time, the company has expanded to create a path to address not only present, but also future requirements. Product specifications and descriptions in this document subject to change without notice.

For the latest version of this document, please visit our website at [www.steligent.com](http://www.steligent.com).

Steligent Inc.  
46710 Fremont Blvd., Fremont, CA 94538  
Tel: (408) 623-9801

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