



Agilent Technologies

Errata Notice

This document contains references to "Centellax." Please note that the test and measurement product portfolio once owned by Centellax, Inc. is now part of Agilent Technologies. For more information about these products and support, go to **www.agilent.com/find/bert-news**.

10G PRBS Source with Integrated Clock Test Accessory



Features

- Fixed-Frequency Clock Source
- Wide Operating Range, from 50 Mb/s to 12.5 Gb/s
- RMS Jitter ~ 1.5 ps
- Fast Rise/Fall Times ~ 25 ps
- Small Size: 3.5" x 3.5" x 1"
- Multiple Output Patterns: 2⁷, 2¹⁰, 2¹⁵, 2²³, 2³¹
- Multiple Mark Ratios: 1/2, 1/4, 1/8
- Differential Outputs

Description

The TG2P1A is a self contained 10 Gb/s pseudo random bit sequence (PRBS) generator. The TG2P1A can be configured to use an external clock source allowing operation from 50 Mb/s to 12.5 Gb/s. Five different PRBS pattern lengths and three mark density ratios are available via user selectable jumpers. Differential data outputs provide CML compatible signal levels via the front panel SMA connectors. The TG2P1A's small size, measuring just 3.5 x 3.5 x 1.0", allows for close placement to the device under test. The generator is self contained and plugs into standard PC power supplies.

Application

The TG2P1A can be used as a digital source for stimulus/response measurements of high speed logic devices. Characterizing waveform distortion of high speed telecommunication components is simplified with the source's low jitter and fast rise/fall times. Production environments can take advantage of the source's simple interface, low power consumption and small size.

Key Specifications

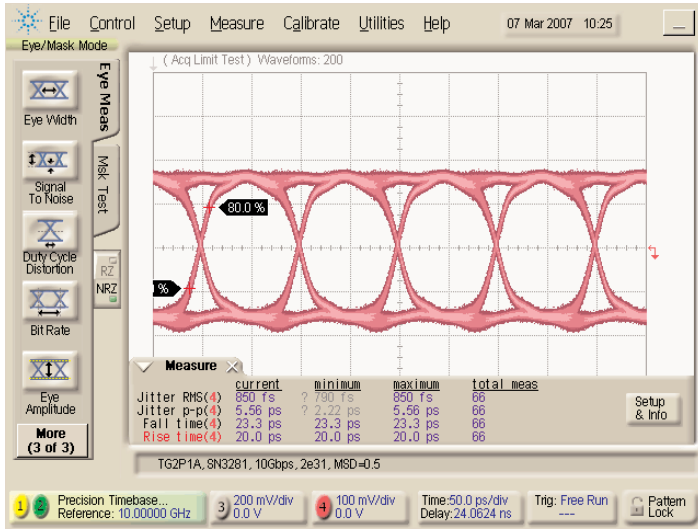
Description	Minimum	Typical	Maximum
Int. Clock Speed	—	10.0 GHz	—
Ext. Clock Speed	0.05 GHz	—	12.5 GHz
Output Bit Rate *	0.05 Gb/s	—	12.5 Gb/s
RMS Jitter (Data) **	—	0.9 ps	—
RMS Jitter (Int. Clock)	—	1.0 ps	—
20-80 Rise/Fall Times	—	23 ps	25 ps
Eye Height	200 mV _(p-p)	250 mV _(p-p)	—
Eye Amplitude	250 mV _(p-p)	300 mV _(p-p)	—
OPT008 Eye Amplitude	700 mV _(p-p)	800 mV _(p-p)	—
Eye SNR ***	18	22	—
Output Voltage Low	—	- 150 mV	—
Output Voltage High	—	+150 mV	—
Clock Power	-1 dBm	+ 2 dBm	+ 3 dBm

* Min rate depends on input slew rate; lower rates are possible with fast input

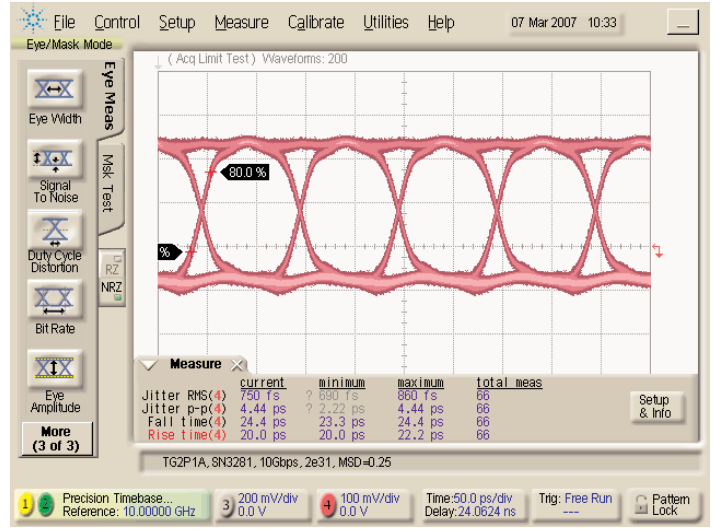
** Measured with external clock and precision timebase

*** As measured by the Agilent 86100A

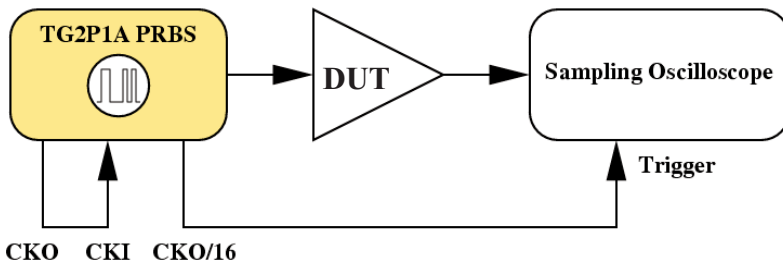
Typical Output Waveforms



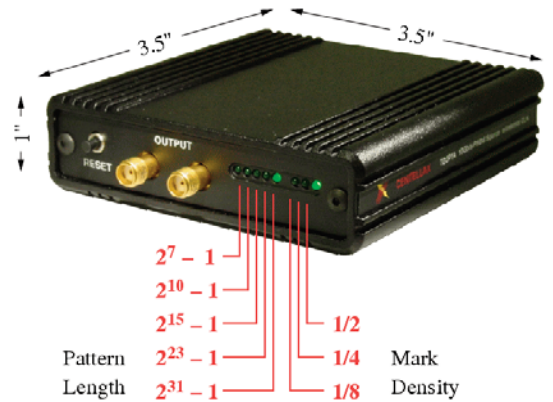
10 Gb/s, 2³¹-1, Mark Density 1/2



10 Gb/s, 2³¹-1, Mark Density 1/4



EYE Quality Measurement setup using the TG2P1A, DUT and oscilloscope



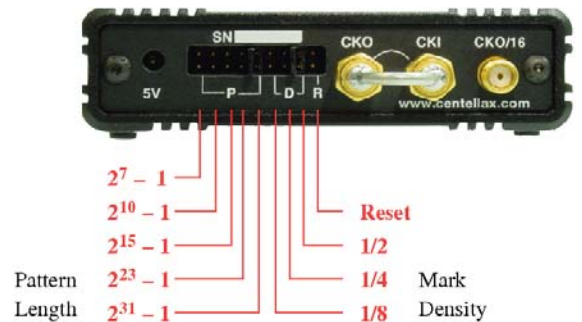
TG2P1A Front Panel Outputs and LED Annunciators

Ordering Information

TG2P1A 10G PRBS, includes 1-year warranty

OPTIONS

- OPT001 +Custom Clock Frequency @10.66423 GHz
- OPT002 +Custom Clock Frequency @10.51875 GHz
- OPT003 +Custom Clock Frequency @11.09573 GHz
- OPT004 +Custom Clock Frequency @ 9.95328 GHz
- OPT005 +Custom Clock Frequency @10.709225 GHz
- OPT006 +Custom Clock Frequency @10.312500 GHz
- OPT008 +Increased Amplitude to 800 mVpp
- OPT300 1 Year Warranty Extended to 3 Years
- OPT301 1 Year Warranty Extended to 5 Years



TG2P1A Rear Panel inputs and Controls