Rev. 1.0, May 2000   Product Brief

Features

- Industry's fastest Repeater/Port Bypass Device
- Conventional 0.25μm CMOS process
- Up to 2.125 Gbps per channel
- Four Integrated Port Bypass Circuits (PBC)
- User-Controlled Dual-Speed Operation
  - 1.0625 Gb/s
  - 2.1250 Gb/s
- ANSI X3T11 Fibre Channel Compliant
  - Exceeds standard jitter requirements
- Configurable Clock & Data Recovery Unit (CDR): Repeater or Bypassed
- Flexible, low speed reference clock
- On-chip transmit and receive termination
- 44-Pin, 10mm Plastic Quad Flat Pack(PQFP) package
- Revolutionary CoolPHYer™ architecture achieve high performance at unprecedented low power
  - 300 mW Power Dissipation with 4 channels running at 2.125Gbps/channel

General Description

The nLiten™ BBT2020 is the industry's highest performance CMOS-based Port Bypass Device. Based on the patent-pending CoolPHYer™ architecture, nLiten BBT2020 is fully double-speed ANSI X3T11 Fibre Channel compliant, with each channel capable of carrying up to 2.125Gbps. Leveraging the low power advantage of the CMOS process, the device consumes only 300mW at full speed[1]. The nLiten BBT2020 is a sophisticated repeater with low latency, virtually no peaking in jitter transfer characteristics.

With six cascaded Port Bypass Circuits (PBC), nLiten BBT2020 has sophisticated Clock and Data Recovery (CDR) capabilities. This configuration will control jitter accumulation while repeating incoming signals. PBCs are used to provide loops that are continuously active in hard disk arrays constructed in Fibre Channel Arbitrated Loop (FC-AL) configurations. Hard disks may be pulled out or swapped while other disks in the array are available to the system. The device may also be used in multi-initiator loop configurations.

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[1] 4 duplex channels, each running at 2.125Gbps. Typical power consumption figure under recommended operating conditions. See Table 8.

Functionality

Port Bypass Circuits

The nLiten BBT2020 contains six Port Bypass Circuits (PBCs) which are 2-to-1 multiplexers (MUXs) used to steer serial signals. (See Figure 1.) Each PBC, **PBCx,** has a single select line, **SELECTx**. When HIGH, **SELECTx** steers the external input In to **PBCx**; when LOW, it selects the output of the previous PBC, **PBC(x-1).** PBC5 does not have an external input, but selects between the output of the CDR(when SEL5 is HIGH) and the output of PBC0 (when SELECT5 is LOW). These controls allow FC-AL loops to include a functional device on the loop or exclude a non-functional device from the loop. When SELECT5 is HIGH, the nLiten BBT2020 is a repeater.
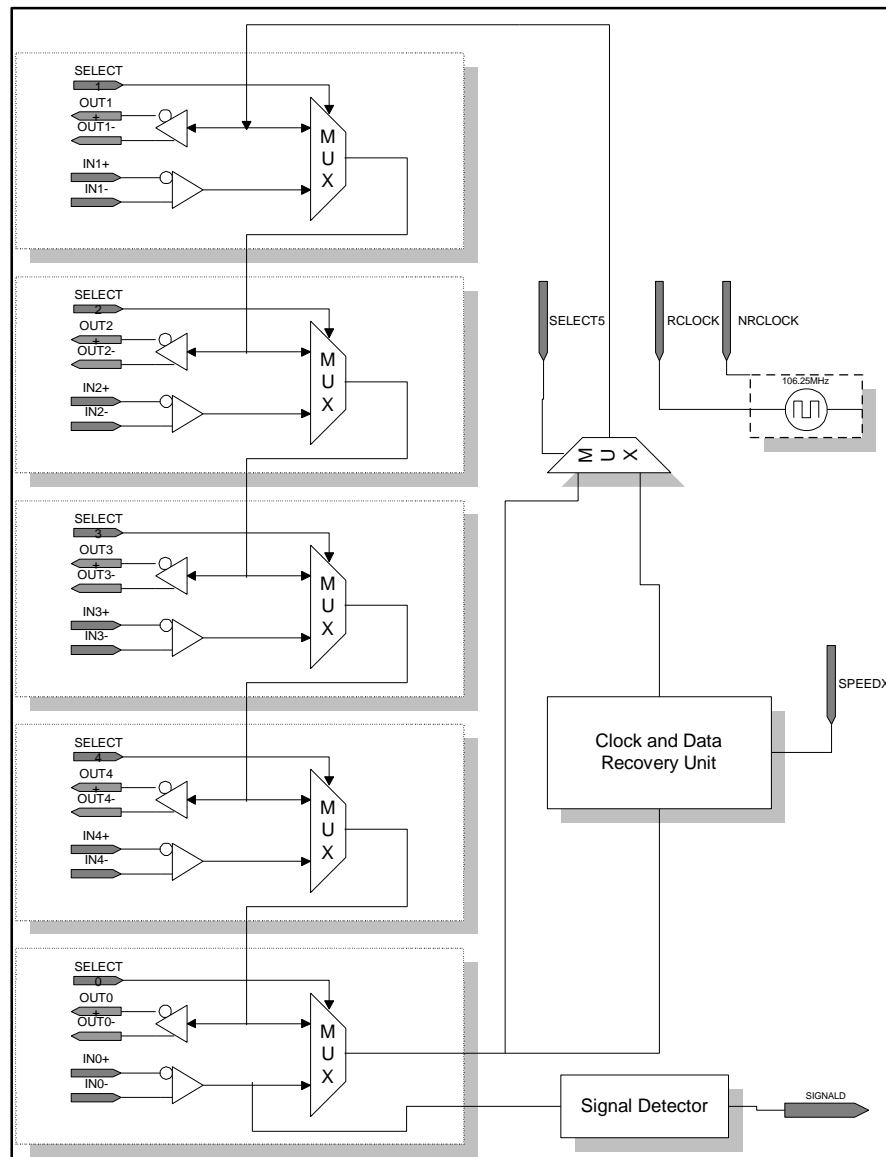

FIGURE 1
nLiten BBT2020/1010 Functional Block Diagram.
SELECT5 determines whether the device is a Repeater or a Bypass Port.

Contacts Information

The information in this data sheet is current as of the printing date, but device specifications are subject to change. For the most current information, refer to the BitBlitz Communications world-wide web site at **http://www.bitblitzcom.com.** For additional details on the functions, including availability, pricing, and delivery terms, contact your local BitBlitz Communications representatives below.

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