

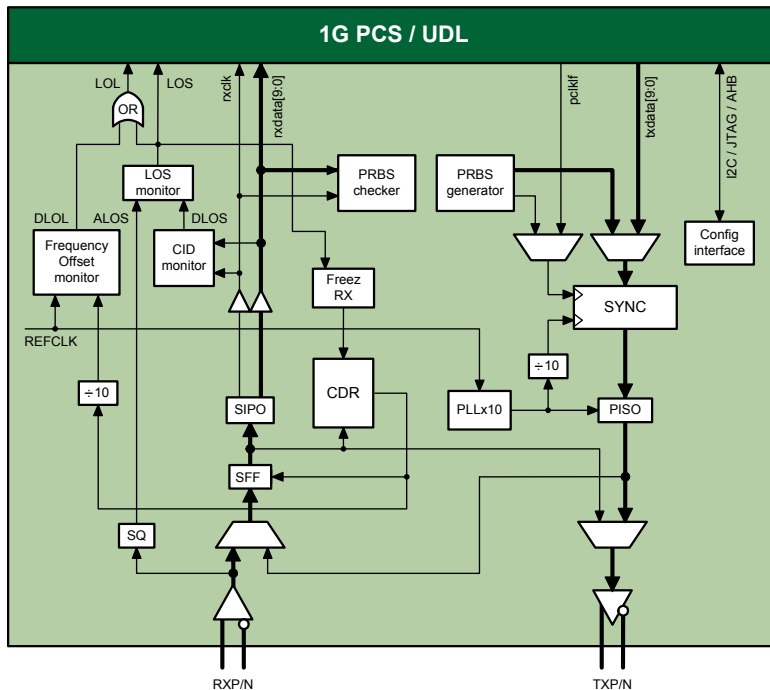
1G SerDes PMA Layer IP

GUC's 1G SerDes PMA Layer intellectual property (IP) is designed to conform to IEEE 802.3ah-2004 Clause 65.3. 1G EPON applications are supported and it can also support 10G EPON applications where a 1G SerDes interface is needed for 10G to 1G data rate conversion. Designed for the latest high-speed backplanes, this 1G SerDes PMA supports up to 5 Gbps for high-speed communications and networking applications.

Product Overview

GUC's 1 Gigabit SerDes has design features that support 1G PON applications. It also supports 10G/1G loop timing mode with optimized jitter transfer characteristics in 10G EPON applications. Special design features are included in this SerDes including automatic/manual slicer threshold adjust, TX/RX equalization, Loss of Lock (LOL) and Loss of Signal (LOS) Detect, etc.

Based on GUC's proven high-speed SERDES technology, the GUC 1G SerDes PMA provides a cost effective and extremely low power solution that is designed to meet the needs of today's high-speed communication and networking designs.



GUC's 1G SerDes PMA Layer

FEATURES AND BENEFITS

1G SerDes PMA Block

- Conforms to IEEE 802.3ah, clause 65.3 standard
- Supports 1G EPON application
- Supports standard 1.25Gbps data rate
- Bist options supported
- Supports digital Loss of Lock (LoL) with programmable range from -1000ppm to +1000ppm in 50ppm increments
- Supports digital Loss of Signal (LoS)
- TX equalization with de-emphasis
- RX equalization implementation
- TX supports DC coupling
- RX supports DC coupling
- LVPECL signaling with VTTX=2.2V
- RX automatic/manual threshold adjust implementation to achieve extremely high RX sensitivity
- Supports I2C ports for configuration registers access and test mode control
- Supports AHB/Serial interface for register configuration and test mode control
- Support pin connectivity test mode

Test Features

- BIST (built-in-self-test) includes PRBS-7, PRBS-31 and user defined 20-bit Pattern
- AC JTAG mode supported for debug
- Supports two loopback modes: serial loopback (PMA loopback) and parallel loopback (PCS loopback)

Process Technology

- TSMC 40nmG 1P6M
- Designed for flip-chip package

1G SerDes PMA Layer IP

1G SerDes PMA IP Deliverables

Item	Description	Format
1	1G SerDes PMA Datasheet	PDF
2	PMA .lib and .db files	.lib / .db
3	PMA behavior simulation model	encrypted VERILOG

Ordering Information

The 1G SerDes PMA IP is available as shown below

Part Number	IP Option
IGASERS06A	1G SerDes PMA

NOTE: Consult your GUC sales representative for feature availability and schedule.

Global Unichip IP Products

GUC provides a variety of SerDes IPs including PCIe 1.0/2.0, XAUI PCS and PMA, 1G SerDes PMA, 10G SerDes PMA, SATA 6Gbps PHY PMA, and SAS 6Gbps PMA among others.

GUC offers many valuable IPs for SoC design. For digital IPs, GUC provides USB 1.1/2.0, Ethernet MAC, IDE, JPEG Codec, and TV-encoder products. For Star IPs, GUC carries ARM cores, proprietary DSP, and MPEG-4 Codec. For Analog IPs, GUC offers PLL, POR, ADC, and DAC on different technology nodes. For software IPs, GUC delivers the MP3 codec, AAC-LC Codec, and ARM Codec for audio and speech applications. Additionally, GUC provides SoC integration services from spec to GDSII or RTL to GDSII. GUC is also equipped with the ARM development platform for quick prototyping

GUC's design service covers all fabrication technologies from 0.5 μ m to 28nm. The high complexity, noise coupling, electro-migration, dynamic IR drop, and design for manufacturing (DFM) problems have now exceeded the capability of traditional design methodology. GUC provides an advanced design flow, which includes quick prototyping, physical synthesis, hierarchical design and clock tree synthesis, static timing analysis, formal verification, power grid design and analysis, cross-talk noise prevention and fixing, on-chip variation (OCV), DFM etc., to achieve rapid timing and signal integrity closure. GUC's design service enables the customer's design to reach power, design-for-testability (DFT), timing and SI closure quickly.

For more information about this product or other Global Unichip services please email us at info@globalunichip.com or visit us on the web at www.globalunichip.com.

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