1.32 Gbit/s Serial Link Transmitter and Receiver

GigaSTaR®

INGT165B/BG

INGR165B/BG

12x12 mm, 196 PBGA packages

The GigaSTaR (**Giga**bit/s **S**erial **T**ransmitter **a**nd **R**eceiver) is a universal high-speed point-to-point communication link. It consists of two devices, the Transmitter INGT165 and the Receiver INGR165.

The INGT165 Transmitter converts parallel data up to 36-bit to a serial bit-stream. The differential CML (Current Mode Logic) outputs can directly drive Shielded-Twisted-Pair (STP) cables for distances up to 50 meters and can directly interface to inputs of fiber optic modules to span longer distances.

The INGR165 Receiver converts the serial bit-stream to the original parallel data format, fully transparent and without protocol overhead.

Link-synchronization, bit-stream coding/decoding, clock-/frame-recovery and parity-check are managed by internal high-speed resources. GigaSTaR links can be operated in parallel, scaling the bandwidth in multiples of 1.188 Gbit/s (payload data rate).

FEATURES

- 36-bit 33 MHz parallel data interface (3.3V CMOS)
- Variable payload data transfer rate up to 1.188 Gbit/s
- Internal RF clock-generation and clock-recovery (PLL)
- Integrated DC-balanced coding for AC coupling
- Integrated cable equalizer (INGR165)
- Built in parity check
- Low latency of 40 ns per device (typ.)
- Differential, low-swing CML-signals for the serial link
- High signal robustness, EMI and noise immunity
- Direct interfacing to 50/100 Ohm cables and fiber optic modules
- Single +3.3V DC supply
- Low power dissipation of 1 W per device (typ.)
- Ambient operating temperature – 40°C to +85° C

APPLICATIONS

- High-speed scanning / printing (photo, exposure- and security systems)
- Mass storage connections
- High-speed and multi-channel imaging
- Telecommunication switches
- High-speed sensors / actuators
- Industrial Control
- High-resolution panel links
- Data broadcast (Video Server)

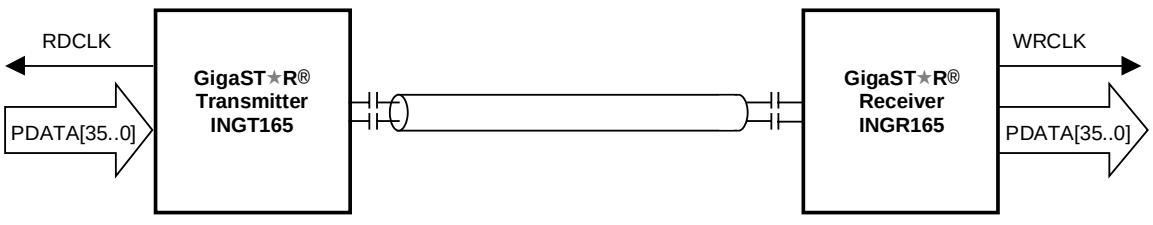

Figure 1: GigaSTaR Link