GS6150

Multi-Rate Serial Digital Reclocker

Gennum Products

Key Features

- SMPTE ST 2081, ST 424, ST 292, and ST 259-C compliant
- Supports retiming data at rates of 125Mb/s, 270Mb/s, 1.485 and 1.485/1.001Gb/s, 2.97 and 2.97/1.001Gb/s, 5.94 and 5.94/1.001Gb/s
- Supports retiming of DVB-ASI signals
- Automatic or Manual Rate Selection
  - Detected rate indication in Auto Mode
- 4:1 input selector patented technology
- Option of two reclocked data outputs
- Four configurable GPIO pins with ability to output device status, including:
  - Lock Detect
  - Loss of Signal (LOS)
  - Low/High bit-rate indication for slew-rate control of SDI cable drivers
- On-chip 100Ω differential input and output termination
- Bypass support for rates up to 5940Mb/s
  - Manual Bypass function
  - Configurable automatic Bypass when not locked
- Option to use external reference or operate referenceless
- Cascading reference buffer supports multiple reclockers using a single reference source
- Input signal equalization and output signal de-emphasis to compensate for trace dielectric losses
- Single power supply operation at 1.8V
- 130mW typical power consumption (150mW with second output enabled)
- Pb-free and RoHS compliant
- Operating temperature range: -40°C to 85°C

Applications

- SMPTE ST 2081, SMPTE ST 424, SMPTE ST 292, SMPTE ST 259-C coaxial cable serial digital interfaces
- EN50083-9 DVB-ASI interfaces
- MADI standard

Description

The GS6150 is a low-power, multi-rate serial digital reclocker designed to automatically recover the embedded clock from a digital video signal and re-time the incoming video data.

The GS6150 will recover the embedded clock signal and re-time the data from 6G UHD-SDI signals compliant with SMPTE ST 2081. In addition, it can also re-time SMPTE ST 259-C, SMPTE ST 292, SMPTE ST 424 or DVB-ASI compliant digital video signals as well as MADI audio streams.

The GS6150 features four high-speed differential signal inputs feeding a 4:1 input selector. Input termination is on-chip for seamless matching to 100Ω differential transmission lines. The input selector is a component of a video switching system with tightly constrained timing requirements.

The GS6150 includes programmable trace equalization to compensate for high-frequency losses associated with board-level interconnect.

Two CML outputs interface seamlessly to devices with a CML input reference between 1.2V and 2.5V. Programmable output swing and de-emphasis provide flexibility in managing signal integrity of the output signals.

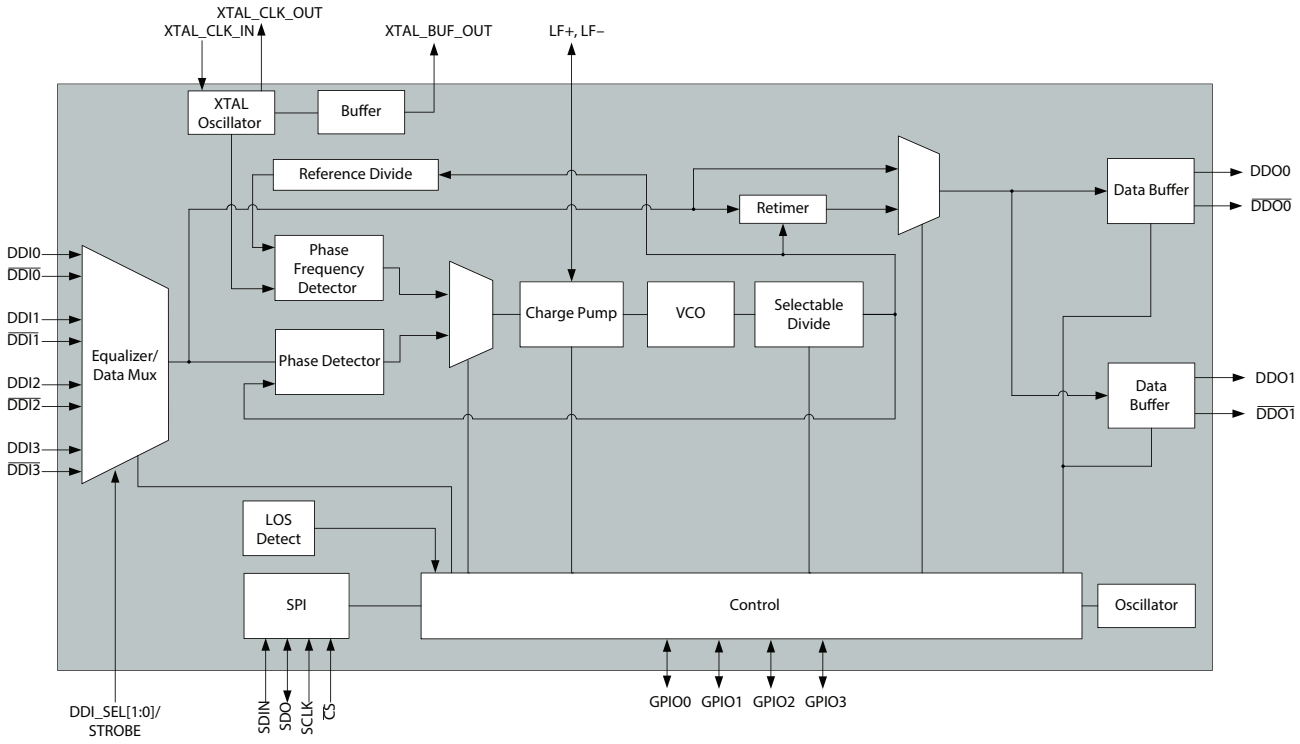
The GS6150 can operate in either automatic rate detection or manual rate selection mode. In auto mode the device will automatically detect and lock onto incoming data signals at any supported rate.

The device can operate without an external 27MHz frequency reference. For applications which require rapid signal lock, an external 27MHz reference may be used to set the VCO frequency when not locked to the input signal. The presence of an external reference crystal is automatically detected by the device.

In systems that require passing of non-supported data rates, the GS6150 can be configured to either automatically or manually enter a bypass mode in order to pass the signal without reclocking.

A four-wire serial Gennum Serial Peripheral Interface (GSPI) facilitates configuration and status monitoring of the device. Multiple GS6150 devices can be daisy-chained together with a single 4-pin connection to the host system.

This device is Pb-free, and the encapsulation compound



GS6150 Functional Block Diagram

Contact Information

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