



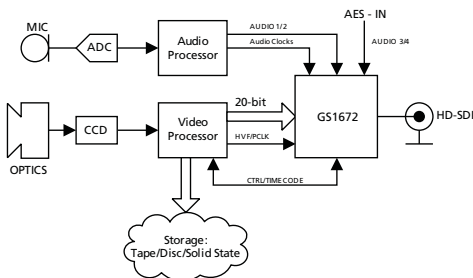
GS1672 HD, SD SDI Transmitter

Key Features

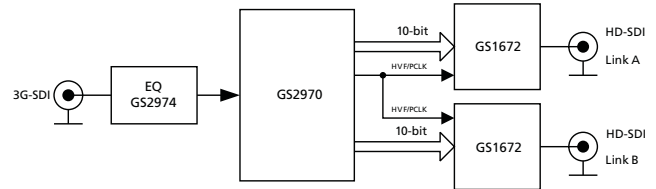
- Operation at 1.485Gb/s, 1.485/1.001Gb/s and 270Mb/s
- Supports SMPTE 292M, SMPTE 259M-C and DVB-ASI
- Integrated Cable Driver
- Integrated low-noise VCO
- Integrated ClockCleaner™
- Integrated audio embedder for up to 8 channels of 48kHz audio
- Ancillary data insertion
- Parallel data bus selectable as either 20-bit or 10-bit
- SMPTE video processing including TRS calculation and insertion, line number calculation and insertion, line based CRC calculation and insertion, illegal code re-mapping, SMPTE 352M payload identifier generation and insertion
- GSPI Host Interface
- 1.2V digital core power supply, 1.2V and 3.3V analog power supplies, and selectable 1.8V or 3.3V I/O power supply
- -20°C to +85°C operating temperature range
- Low power operation (typically 350mW including Cable Driver)
- Small 11mm x 11mm 100-ball BGA package
- Pb-free and ROHS compliant

Applications

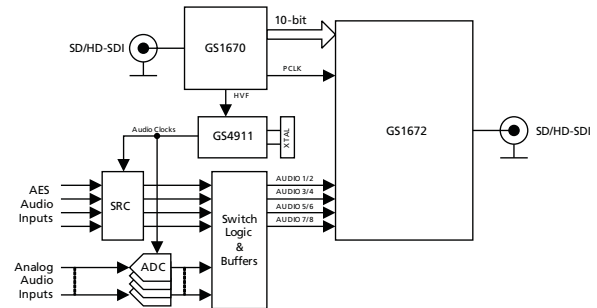
Application: 1080p 30 Camera/Camcorder



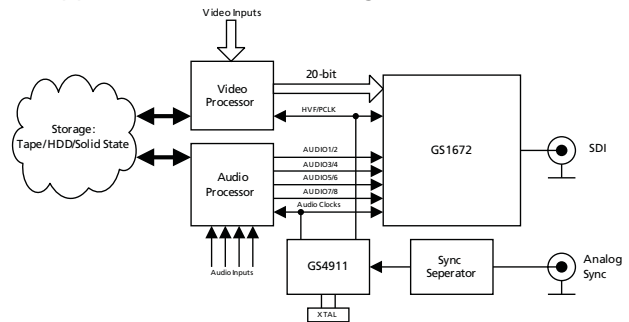
Application: Single Link (3G-SDI) to Dual Link (HD-SDI) Converter



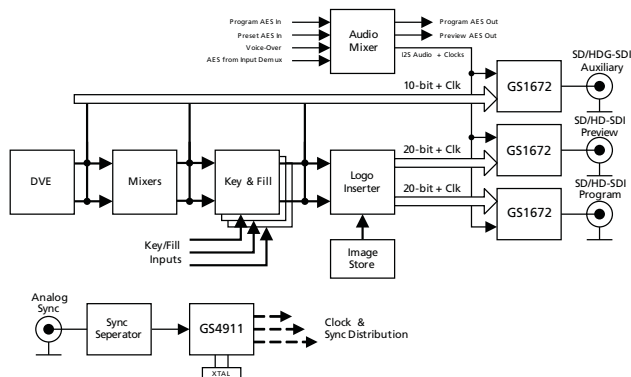
Application: Multi-format Audio Embedded Module



Application: Multi-format Digital VTR/Video Server



Application: Multi-format Presentation Switcher (Output Stage)



Description

The GS1672 is a complete SDI Transmitter, generating a SMPTE 292M, SMPTE 259M-C or DVB-ASI compliant Serial Digital Output signal.

The integrated ClockCleaner™ allows the device to accept parallel clocks with greater than 300ps input jitter and still provide a SMPTE compliant Serial Digital Output.

The device can operate in four basic user-selectable modes: SMPTE mode, DVB-ASI mode, Data-Through mode, and Standby mode.

In SMPTE mode, the GS1672 performs SMPTE scrambling and NRZ to NRZI coding. In addition, the device can insert TRS words, calculate and insert line numbers and line based CRCs, re-map illegal code words, map 8-bit TRS to 10-bit TRS, calculate and insert EDH CRCs and flags, and insert SMPTE 352M payload identifier packets. All of the processing features are optional, and may be disabled via external control pins and/or via the Host Interface.

The GS1672 provides ancillary data insertion in SMPTE mode as well. The entire ancillary packet is programmed into internal registers through the GSPI Host Interface, including the Ancillary Data Flag (ADF), Data Identification words (DID and SDID) and checksum. The GS1672 then recalculates the checksum and inserts the complete ancillary packet into the video stream.

In DVB-ASI mode, the device will perform 8b/10b encoding prior to transmission.

In Data-Through mode, all SMPTE and DVB-ASI processing is disabled, and the device can be used as a simple parallel to serial converter.

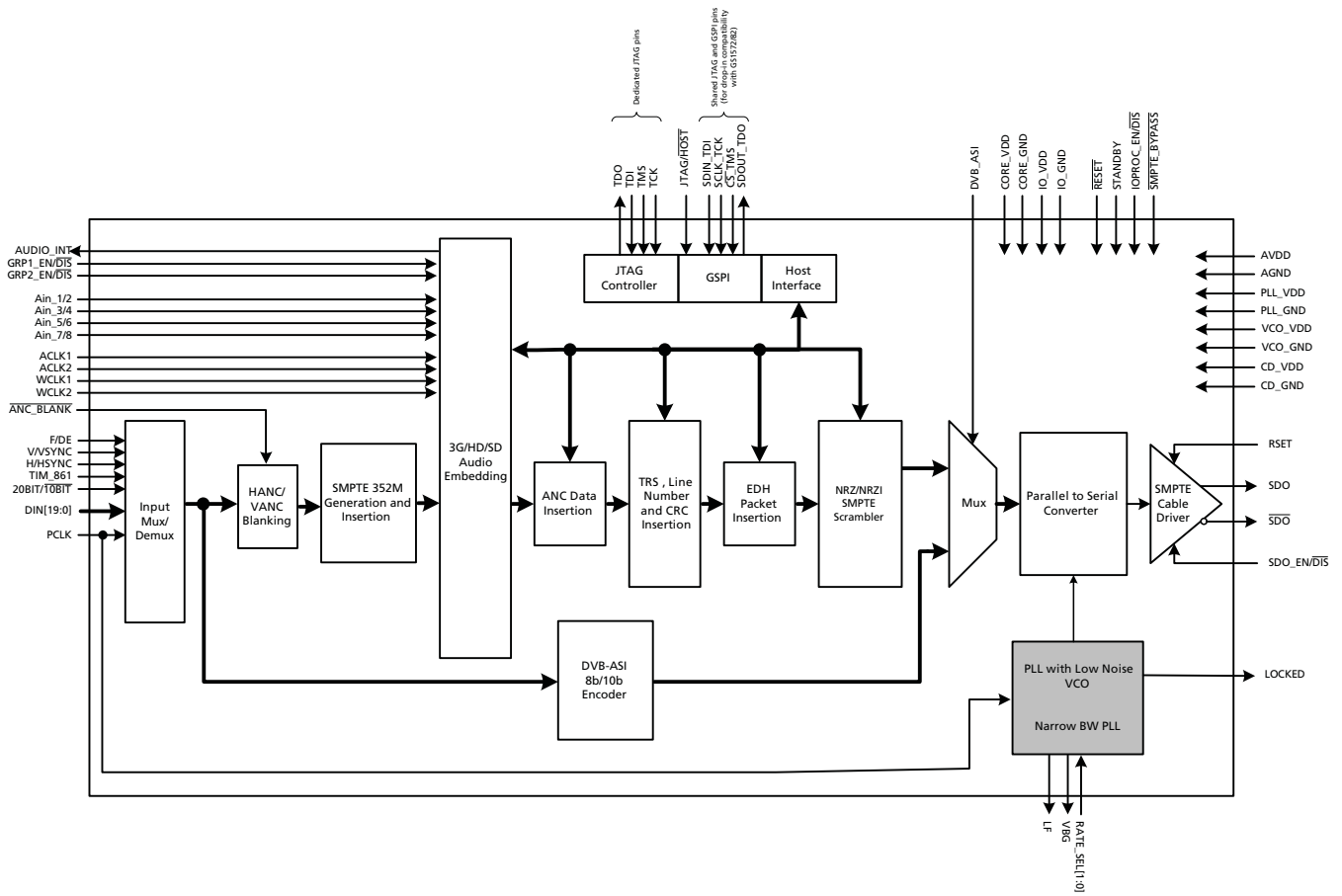
The device can also be placed in a lower power Standby mode. In this mode, no signal is generated at the output.

Parallel data inputs must be provided in 20-bit or 10-bit multiplexed format for HD and SD video rates. The associated Parallel Clock input signal operates at 148.5 or 148.5/1.001MHz (for HD 10-bit multiplexed modes), 74.25 or 74.25/1.001MHz (for HD 20-bit mode), 27MHz (for SD 10-bit mode) and 13.5MHz (for SD 20-bit mode).

The GS1672 includes an integrated Cable Driver fully compliant with SMPTE 259M-C and SMPTE 292M. It features automatic dual slew-rate selection, depending on HD or SD operational requirements.

Up to eight channels, in two groups, of serial digital audio may be embedded into the video data stream, in accordance with SMPTE 272M and SMPTE 299M. The input audio signal formats supported by the device include AES/EBU, I²S and serial audio. 16, 20 and 24-bit audio formats are supported at 48kHz synchronous for SD modes and 48kHz synchronous or asynchronous in HD mode. Additional audio processing features include individual channel enable, group selection, group replacement, channel swapping and audio channel status insertion.

Functional Block Diagram



GS1672 Functional Block Diagram

DOCUMENT IDENTIFICATION
PRODUCT BRIEF

The product is in a development phase and specifications are subject to change without notice. Gennum reserves the right to remove the product at any time. Listing the product does not constitute an offer for sale.

CAUTION

ELECTROSTATIC SENSITIVE DEVICES
DO NOT OPEN PACKAGES OR HANDLE EXCEPT AT A
STATIC-FREE WORKSTATION



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