

### Genum Products

### Key Features

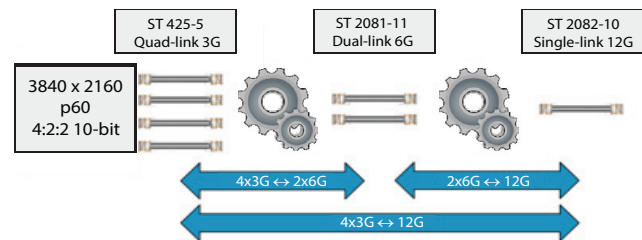
- Converts between 1.5G, 3G, 6G and 12G SDI
  - ♦ Quad Link 3G-SDI ↔ 12Gb/s
  - ♦ Dual Link 6Gb/s ↔ 12Gb/s
  - ♦ Dual Link (2 x 3Gb/s) ST 425-3 ↔ 6Gb/s
  - ♦ Quad Link (4 x 3Gb/s) ST 425-5/-6 ↔ Dual Link 6Gb/s
  - ♦ Quad Link HD-SDI (4 x 1.5Gb/s) ↔ 6Gb/s
- Serial Bypass modes for all support rates
- 4 Serial Differential Inputs
  - ♦ 100Ω differential inputs support DC-coupling to 1.2V CML Logic
  - ♦ Input trace equalization for up to 6" FR4 at 12Gb/s
- 4 Serial Differential Outputs
  - ♦ 100Ω differential outputs support DC-coupling to 1.2V CML Logic
  - ♦ Output de-emphasis to compensate for up to 6" FR4 at 12Gb/s
- Reference Clock/Crystal Input — 148.5MHz/27MHz
- GSPI serial control and monitoring interface
- Selectable 1.8V and 2.5V digital control I/O
- Automatic SMPTE ST 352 packet creation
- 14mm x 14mm 256-Ball BGA (0.8mm pitch)
- Pb-free and RoHS-compliant package

### Applications

- UHDTV1 and 4K D-Cinema end-equipment: Cameras, Monitors, Switchers

### Description

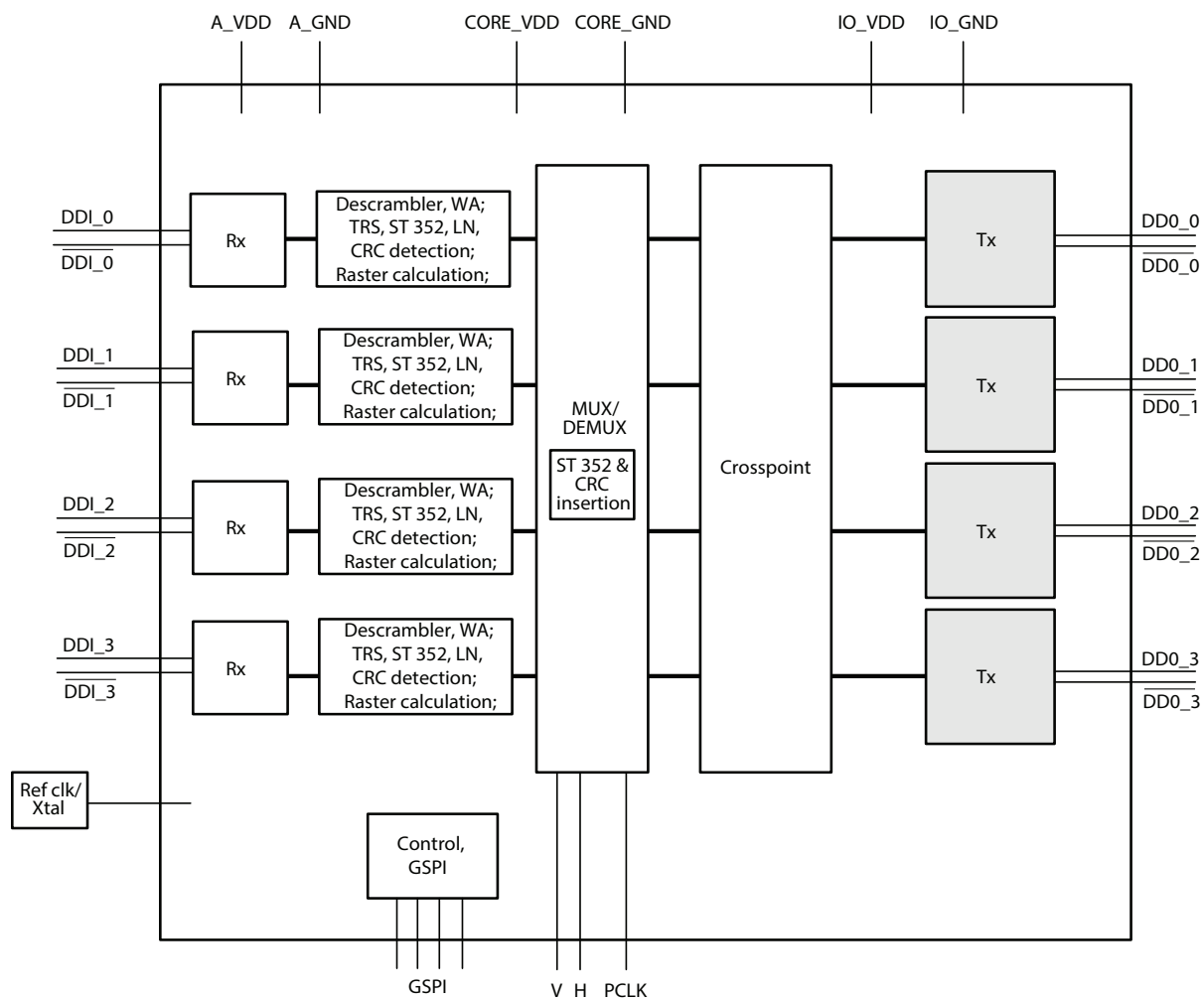
The GS12070 is an UHD-SDI Gearbox which performs the multiplexing and de-multiplexing necessary to facilitate conversions between the ST 425-3 and ST 425-5 multi-link 3Gb/s UHD-SDI Interface and the SMPTE ST 2081 (6Gb/s) and ST 2082 (12Gb/s) Interfaces. A conversion between 4 x 1.5Gb/s and 6Gb/s is also supported.



**GS12070 Supported Conversions of SMPTE Standard Interfaces**

The GS12070 features four high-speed differential signal inputs and four high-speed differential serial outputs which can be interfaced to 1.2V CML I/O. The high-speed inputs and outputs include programmable trace equalization and de-emphasis drivers to compensate for high-frequency losses associated with board-level interconnect.

The high-speed serial inputs and outputs support 270Mb/s, 1.5G, 3G, 6G and 12G nominal data rates. The supported conversions are performed by manually selecting the input and output rates. Unused output ports at 6G and 12G may be configured to output a copy of the primary converted output. A serial bypass mode is also available as a manually selectable option.



**GS12070 Block Diagram**



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**DOCUMENT IDENTIFICATION  
PRODUCT BRIEF**

The product is in a development phase and specifications are subject to change without notice. Semtech 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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