


UHD-SDI Gearbox

Manufacturer:	Semtech Corporation
Package/Case:	BGA196
Product Type:	Discrete Semiconductor Modules
RoHS:	RoHS Compliant/Lead free 
Lifecycle:	Active



Images are for reference only

[Inquiry](#)

General Description

The GS12070 is a four-input and four-output device which supports conversions between multi-link, dual-link and single-link UHD-SDI interfaces. A bypass mode is also available where the inputs can be routed directly to the outputs. The device supports 12Gb/s, 6Gb/s, 3Gb/s and 1.5Gb/s data rates in the conversion modes and additionally supports 270Mb/s in Bypass Mode.

The GS12070's features 100 ohm differential serial interfaces, allowing connection to Semtech equalizers, cable drivers as well as optical modules.

Single-Chip Conversion

The GS12070 supports both multiplex and de-multiplex modes in one device. The desired mode and conversion is set through mode-select pins.

Robust Receive Solution

The GS12070 eases the system challenge of receiving multi-link SDI signals by automatically compensating for input channel skew. In modes that convert from 12Gb/s to 6Gb/s combinations, the GS12070 automatically compensates for up to 300ns of serial input channel skew. In all other conversion modes, up to 800ns of input channel skew is available. As link ordering is critical for multi-link interfaces. The GS12070 is able to automatically order the incoming serial streams for multiplexing SMPTE compliant UHD-SDI interfaces. The link order can also be configured manually to compensate for cases where the cable order has been connected incorrectly.

Flexible Distribution Modes

In configuration modes where there are unused outputs available, the GS12070 can be programmed to duplicate existing outputs. In addition, inputs can be assigned to unused outputs for monitoring purposes.

Key Features

Fully standards compliant turnkey solution enabling a simplified UHD-SDI interface

Converts between HD-SDI, 3G-SDI, 6G UHD-SDI, and 12G UHD-SDI using MUX (Multiplex) and DeMUX (Demultiplex) modes

Quad Link 3G-SDI ↔ Single Link 12G UHD-SDI

Dual Link 6G UHD-SDI ↔ Single Link 12G UHD-SDI

Dual Link 3G-SDI (ST 425-3) ↔ Single Link 6G UHD-SDI

Quad Link 3G-SDI (ST 425-5/6) ↔ Dual Link 6G UHD-SDI

Quad Link (1.5Gb/s x 4) HD-SDI ↔ Single Link 6Gb/s

Dual Link (1.5Gb/s x 2) HD-SDI ↔ Single Link 3Gb/s

Bypass modes for all supported rates, including SD

Automatic skew compensation for multi-link inputs

Automatic input link order handling for multi-link 3Gb/s input

Configurable Serial Output assignment

Configurable multi-link output delay

100Ω Differential Inputs

Input trace equalization up to 12dB

Four 100Ω Differential Outputs

Individually selectable output swing

Reference Clock/Crystal Input — 27MHz

GSPI Serial Control and Monitoring Interface

Automatic and manual SMPTE ST 352M handling

12mm x 12mm 196-Ball BGA (0.8mm pitch)

Pb-free/Halogen-free/RoHS/WEEE compliant package

Application

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

Packaging

BGA196

Recommended For You

GS2988-INE3

Semtech Corporation

QFN

GS2962-IBE3

Semtech Corporation

BGA

GS2970-IBE3

Semtech Corporation

BGA

GS2971AIBE3

Semtech Corporation

BGA

GS1578ACNE3

Semtech Corporation

QFN

GS2972-IBE3

Semtech Corporation

BGA100

GS2989-INE3

Semtech Corporation

QFN16

GS1661AIBE3

Semtech Corporation

BGA100

GS12281-INE3

Semtech Corporation

QFN40

GS1559-CBE2

Semtech Corporation

BGA

GS2965-INE3

Semtech Corporation

QFN

GS2961-IBE3

Semtech Corporation

BGA

GS2971-IBE3

Semtech Corporation

BGA

GS6151-INE3

Semtech Corporation

32-VFQFN

GS2960-IBE3

Semtech Corporation

BGA100