


Video Proc 1.2V 0.265A 100-Pin BGA

Manufacturer:	Semtech Corporation
Package/Case:	BGA
Product Type:	Embedded Processors & Controllers
RoHS:	RoHS Compliant/Lead free 
Lifecycle:	Active



Images are for reference only

[Inquiry](#)

General Description

The GS2971A is a multi-rate SDI integrated Receiver which includes complete SMPTE processing, as per SMPTE 425M, 292M and SMPTE 259M-C. The SMPTE processing features can be bypassed to support signals with other coding schemes.

The GS2971A integrates Gennum's adaptive cable equalizer technology, achieving unprecedented cable lengths and jitter tolerance. It features DC restoration to compensate for the DC content of SMPTE pathological signals.

The device features an Integrated Reclocker with an internal VCO and a wide Input Jitter Tolerance (IJT) of 0.7UI.

A serial digital loop-through output is provided, which can be configured to output either reclocked or non-reclocked serial digital data. The serial digital output can be connected to an external cable driver.

The device operates in one of four basic modes: SMPTE mode, DVB-ASI mode, Data-Through mode or Standby mode.

In SMPTE mode (the default operating mode), the GS2971A performs full SMPTE processing, and features a number of data integrity checks and measurement capabilities.

The device also supports ancillary data extraction, and can provide entire ancillary data packets through host-accessible registers. It also provides a variety of other packet detection and error handling features. All of these processing features are optional, and may be individually enabled or disabled through register programming.

Both SMPTE 425M Level A and Level B inputs are supported with optional conversion from Level B to Level A for 1080p 50/59.94/60 4:2:2 10-bit inputs.

In DVB-ASI mode, sync word detection, alignment and 8b/10b decoding is applied to the received data stream. In Data-Through mode all forms of SMPTE and DVB-ASI processing are disabled, and the device can be used as a simple serial to parallel converter.

The device can also operate in a lower power Standby mode. In this mode, no signal processing is carried out and the parallel output is held static.

Parallel data outputs are provided in 20-bit or 10-bit format for 3Gb/s, HD and SD video rates, with a variety of mapping options. As such, this parallel bus can interface directly with video processor ICs, and output data can be multiplexed onto 10 bits for a low pin count interface.

Up to eight channels (two audio groups) of serial digital audio may be extracted from the video data stream, in accordance with SMPTE 272M-C and SMPTE 299M.

The output audio formats supported by the device include AES/EBU and I2S, and two other industry standard serial digital formats. A variety of audio processing features are provided to ease implementation. Audio clocks are internally generated and provided by the device.

Key Features

Operation at 2.97Gb/s, 2.97/1.001Gb/s, 1.485Gb/s, 1.485/1.001Gb/s and 270Mb/s

Supports SMPTE 425M (Level A and Level B), SMPTE 424M, SMPTE 292M, SMPTE 259M-C and DVB-ASI

Integrated adaptive cable equalizer

Typical equalized length of Belden 1694A cable:

150m at 2.97Gb/s

250m at 1.485Gb/s

480m at 270Mb/s

Integrated Reclocker with low phase noise, integrated VCO

Serial digital reclocked, or non-reclocked output

Integrated audio de-embedder for 8 channels of 48kHz audio

Integrated audio clock generator

Ancillary data extraction

Optional conversion from SMPTE 425M Level B to Level A for 1080p 50/60 4:2:2 10-bit

Parallel data bus selectable as either 20-bit or 10-bit

Comprehensive error detection and correction features

Output H, V, F or CEA 861 Timing Signals

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

GSPI Host Interface

Low power operation (typically 545mW)

Small 11mm x 11mm 100-ball BGA package

Pb-free and RoHS compliant

Application

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

1080p50/60 Monitor

Multi-format Downconverter

Multi-input Video Monitoring System

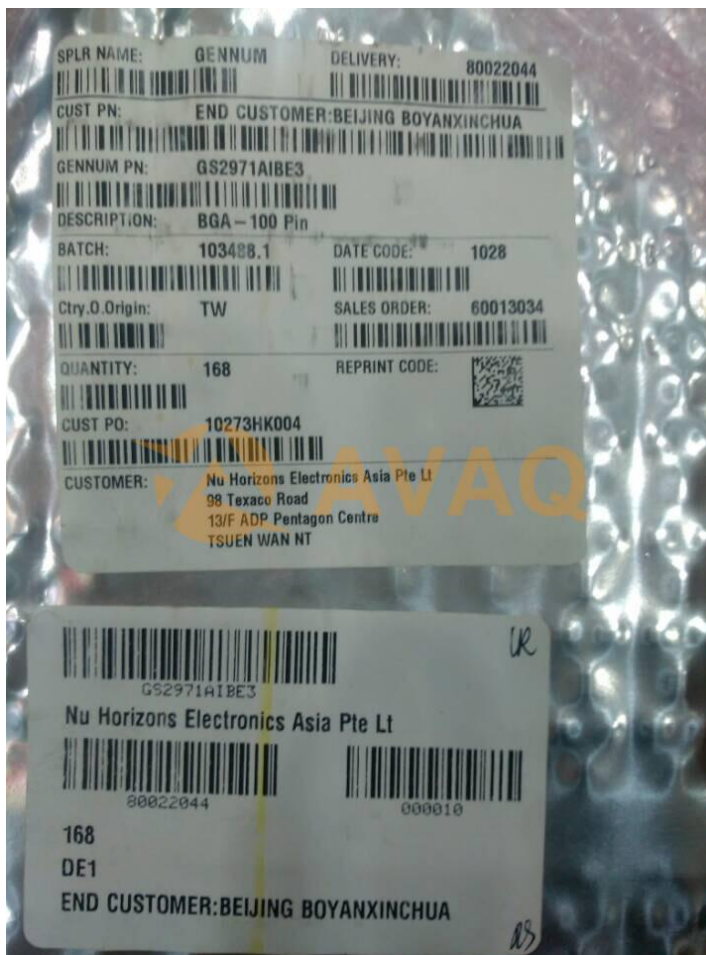
Multi-format Audio De-embedder Module

Multi-format Digital VTR/Video Server

Order Codes

GS2971AIBTE3: Lead-Free, RoHS Compliant, Tape and Reel-250 Pieces

GS2971AIBE3: Lead-Free, RoHS Compliant, Tray-168 Pieces



Recommended For You

GS2988-INE3

Semtech Corporation

QFN

GS2962-IBE3

Semtech Corporation

BGA

GS2970-IBE3

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

GS12070-IBE3

Semtech Corporation

BGA196

GS1559-CBE2

Semtech Corporation

BGA

GS2965-INE3

Semtech Corporation

QFN

GS2961-IBE3

Semtech Corporation

BGA

GS2971-IBE3

Semtech Corporation

BGA

GS6151-INIE3

Semtech Corporation

32-VFQFN

GS2960-IBE3

Semtech Corporation

BGA100