



# GSV5100

2 In to 2 Out HDMI2.0 Repeater/CAT  
Extender with Audio Extraction/Insertion

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## PRODUCT SPECIFICATION

ONWA

# 1 General Information

## 1.1 General Information

The GSV5100 has dual work modes to support both the CAT5e/6 extender and the HDMI cable.

In the extender modes, the internal video compression codec can be enabled to support the 4K60Hz 444 format transferred through the CAT6 cables up to be more than 70meters. Besides the video and audio can be transferred through the CAT cables, the IR, RS232, CEC, DDC and power can also be supported by Gscoclink patented technology named as the CCA(Clock Combined with Aux).

Rich video processing blocks can work with the patented video codec block together to support almost all the 4K formats and color space.

Besides working standalone to support the CAT extender, this part can also work with Valens or legacy optical extender module to make the 4K long distance transmission implementable.

For the HDMI working mode, it is HDMI1.4/2.0 compatible and HDCP 1.4/2.2 supported by each port. All 2 inputs are identical on receiver capability and all 2 outputs are same as transmitter capability, but it is not a matrix, and the dual input need to be muxed into one stream before spitted out.

For audio insertion and extraction, the versatile TTL pin bus of GSV5100 can be configured as either input mode or output mode based on the platform requirement. GSV5100 can support up to 8-channel I2S, 2-channel S/PDIF, 3D and multi-stream audio. In TDM mode, each audio pin supports up to 8 channels.

Internal Scaler, Color Space Converter and Compression/decompression Codec enables the input and output to be timing format independent and enable the long distance transmission.

With powerful HDMI Rx equalizer and Tx transmitter pre-emphasis capability, GSV5100 can cascade itself with at least 7 stages using HDMI or 12 stages using CAT5e/6 for all HDMI 1.3/1.4/2.0 timings.

## 1.2 Features

### 1.2.1 HDMI Video Input and Output

- Compliant with HDMI2.0b, HDMI1.4b
- Compliant with HDCP2.2/2.3 and HDCP1.4
- Data rate up to 18Gbps
- Programmable HDMI Tx output swing, slew-rate, pre-emphasis
- Adaptive receiver equalization
- AC-coupling capable
- Color Space Converter supports any conversion between different color

## 4 Package Information

The GSV5100 device is packaged in a 96-pin, 10mmx10mm QFN96L package. There is an ePad as the electrical ground of the device. It is critical to solder the entire ePad firmly onto the PCB. A weak connection of the ePad could result in poor performance on higher frequency HDMI video timing.

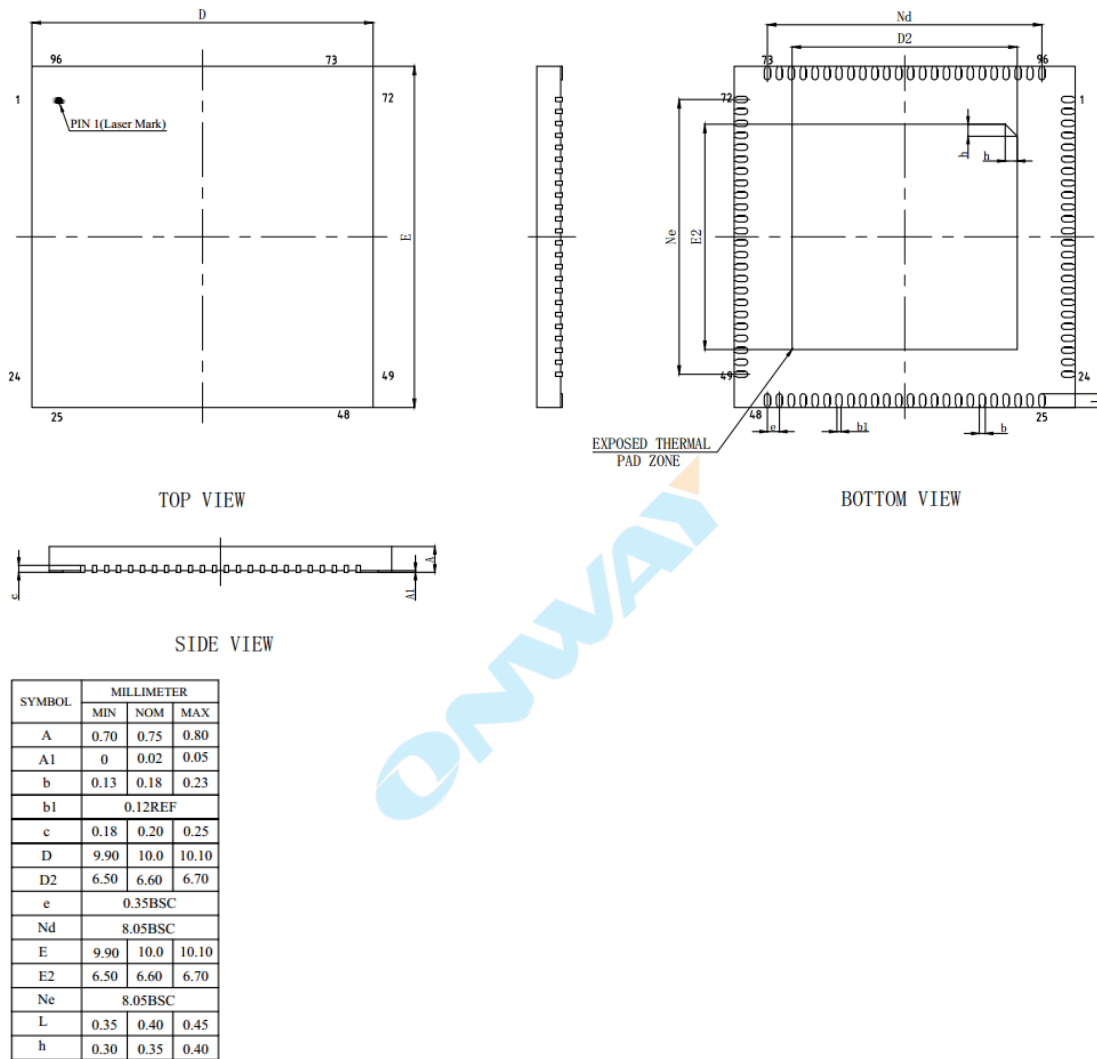


Figure 10. GSV5100 package dimensions

## 5 Ordering Guide

Table 10. Ordering Information

Part Number.	Temperature Range	Package Description	Packing Type
GSV5100	-20 °C to +85 °C	QFN96L, 0.35 mm ball pitch, 10 mm x 10 mm outline	Tray

The ONWAY logo is displayed diagonally in the center of the page. It consists of the word "ONWAY" in a bold, blue, sans-serif font, with a stylized blue and orange graphic element above the 'Y'.