



# GSV2008

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

August, 2018

## PRODUCT SPECIFICATION

ONWA

# 1 General Information

## 1.1 General Information

The GSV2008 is HDMI1.4/2.0 compatible, HDCP 1.4/2.2 supported, configurable 4-in-2-out repeater device. All 4 inputs are identical on receiver capability and all 2 outputs are identical on transmitter capability. GSV2008's 2 HDMI outputs can be independently routed from any HDMI input port.

The HDMI input and output maximum processing pixel clock frequency is 600MHz which means the video resolution can support up to 4kx2k@60Hz 4:4:4 8-bit. The maximum processing audio sample frequency is 192K Hz for non-compression timing. GSV2008 supports HDR10 and Dolby Vision HDR as input and output.

For audio insertion and extraction, 2 versatile TTL pin buses of GSV2008 can be configured as either input mode or output mode regarding platform requirement. GSV2008 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 and Color Space Converter enables the input and output to be timing format independent and capable of long distance transmission.

With powerful HDMI Rx equalizer and Tx pre-emphasis capability, GSV2008 can cascade itself (or GSV2000 series chips) with at least 7 stages for all HDMI 1.3/1.4/2.0 timings.

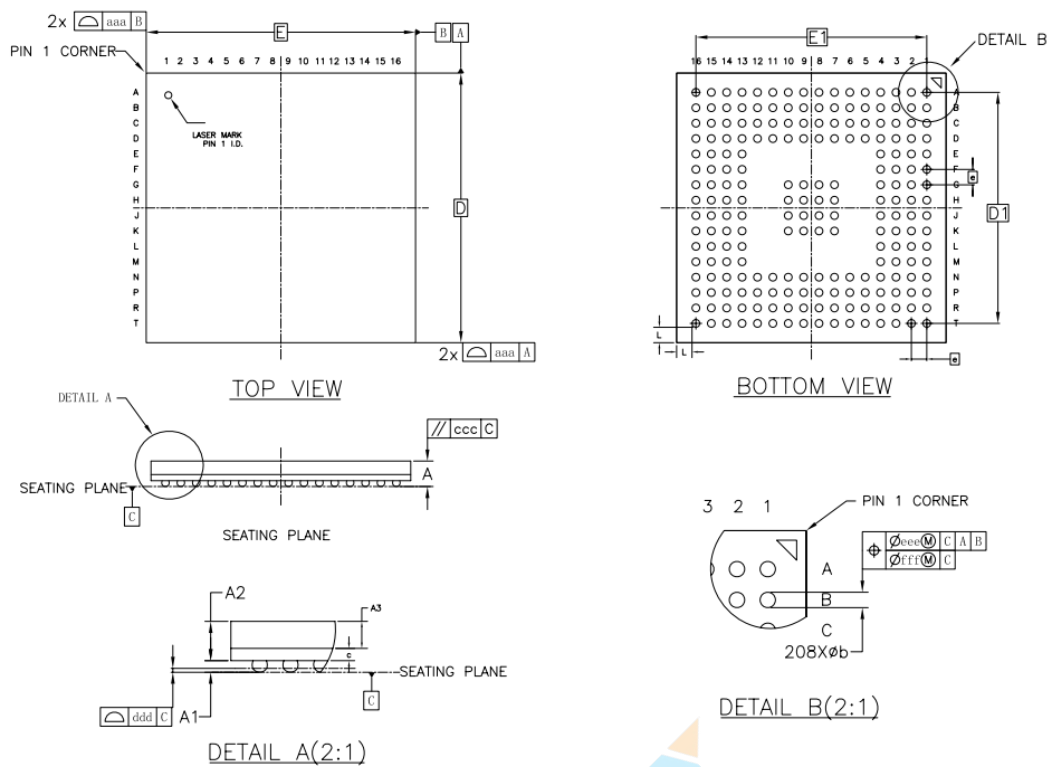
## 1.2 Features

### 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 spaces
- HDR supported (HDR10/HDR12/Dolby Vision/HLG)
- 5V tolerance on DDC/HPD/CEC
- Arbitrary video stream matrix between HDMI Rx and HDMI Tx

### 1.2.2 Audio Input/Output

- SPDIF/I2S/HBR/DSD/TDM Audio Extraction
- SPDIF/I2S/HBR/DSD/TDM Audio Insertion
- Configurable direction for each Audio bus
- Arbitrary audio stream matrix between HDMI Rx/HDMI Tx/Audio bus



SYMBOL	MILLIMETER		
	MIN	NOM	MAX
A	---	---	1.40
A1	0.25	0.30	0.35
A2	0.97	1.02	1.07
c	0.28	0.32	0.36
A3	0.70 BASIC		
D	13.90	14.00	14.10
D1	12.00 BASIC		
E	13.90	14.00	14.10
E1	12.00 BASIC		
e	0.80 BASIC		
b	0.35	0.40	0.45
L	0.80 REF		
aaa	0.10		
ccc	0.20		
ddd	0.08		
eee	0.15		
fff	0.08		

Figure 11. GSV2008 package dimensions

## 5 Ordering Guide

Table 10. Ordering Information

Part Number.	Temperature Range	Package Description	Packing Type
GSV2008	-20 °C to +85 °C	LFBGA144, 0.8 mm ball pitch, 14 mm x 14 mm outline	Tray

The ONWAY logo is a stylized, light blue graphic. It features the word "ONWAY" in a bold, sans-serif font, slanted upwards from left to right. The letter "O" is a solid circle, while the other letters are outlined. A small orange triangle is positioned above the letter "Y".