V0.3

GSV2005 SPECIFIATION

2019-9-23

GSCOOLINK

1. General Description

1.1 General Information

The GSV2005 is HDMI1.4/2.0 compatible, HDCP 1.4/2.2 supported, configurable 1-in-4-out splitter device. All 4 outputs are identical on transmitter capability.
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.
GSV2005 supports HDR10 and Dolby Vision HDR as input and output.

1.2 Capability Description

1.2.1 HDMI Video Input and Output

Supports 6Gb/s HDMI 2.0 and 1.4 protocol. The video input port can drive 4 video outputs at the same time.
With powerful HDMI Rx equalizer and Tx pre-emphasis capability, GSV2005 can cascade itself (or GSV200x series chips) with at least 7 stages for all HDMI 2.0 timings.

1.2.2 External Interface

There is Inter-Integrated Circuit (I^2C) as the chip's external interface.

1.2.3 HDCP

There are HDCP 1.4/2.2 encryption and decryption engines separately for HDMI transmitter and receiver. This enables each HDMI transmitter and receiver to be HDCP 1.4/2.2 capable separately.
And there are also built-in HDCP 2.2-to-1.4, 1.4-to-2.2, 2.2-to-2.2, 1.4-to-1.4 repeater engine. That means MCU software will not have heavy workload for repeater processing, even when sinks are of different and mixed types of HDCP protocol.

2. Pin Description

2.1 Pin Diagram

GSV2005's package is QFNWB124L (1212X0.55-0.35).

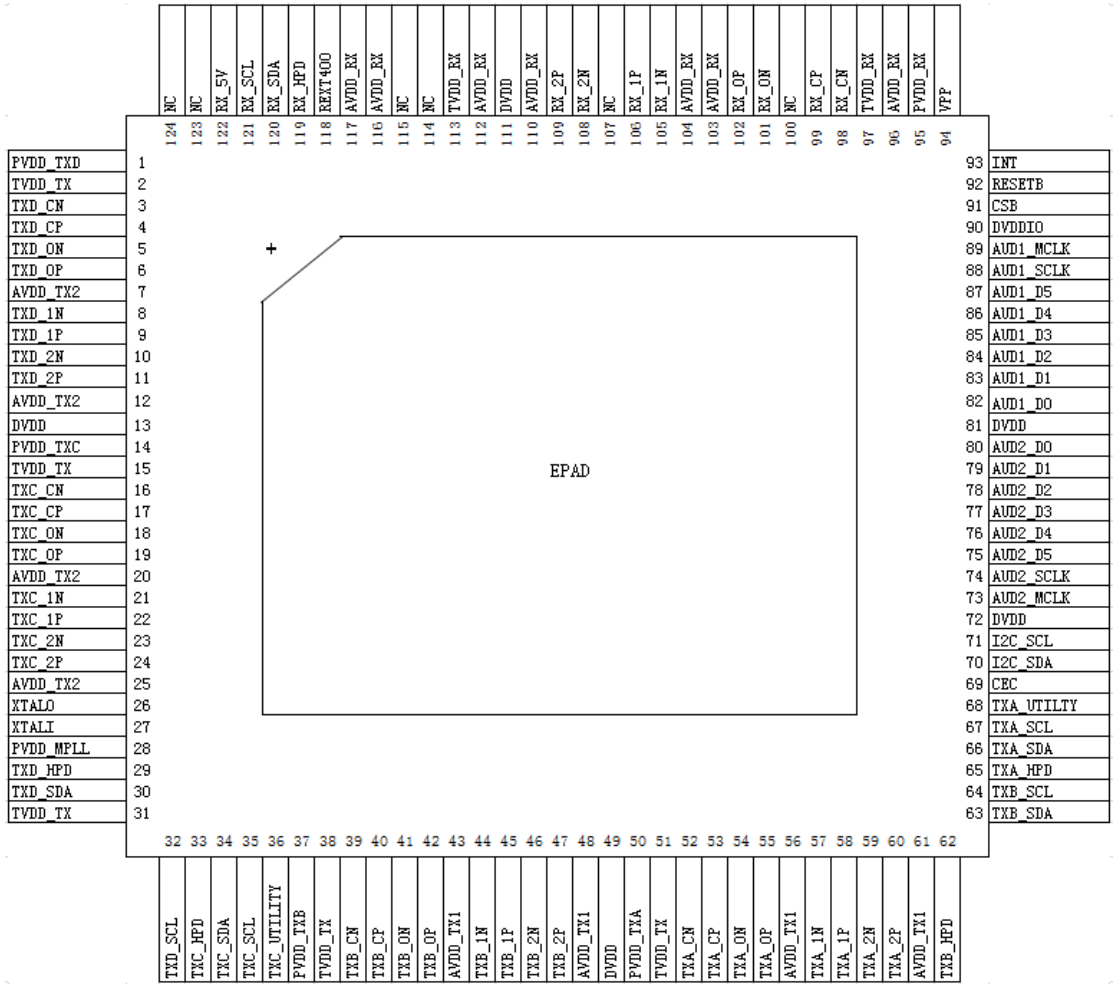


Figure 1. GSV2005 Package

2.2 Pin Description

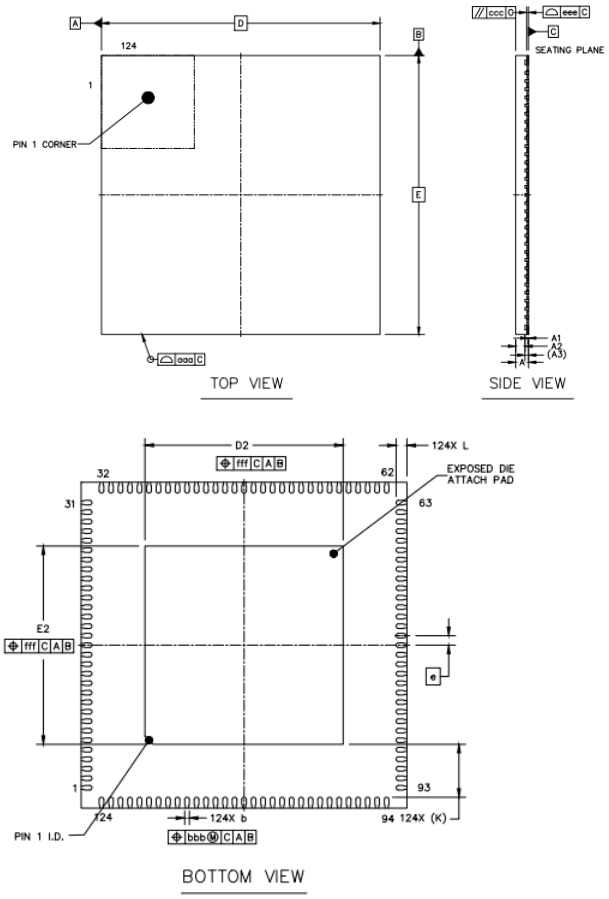
Pin Name	Direction	Pin No.	Description
5V Tolerance Pins			
CEC	I/O	69	5V tolerance CEC PAD
RX_5V	Power	122	RX 5V POWER
RX_HPD	I/O	119	RX 5V tolerance HPD PAD
RX_SDA	I/O	120	RX 5V tolerance DDC SDA PAD
RX_SCL	I	121	RX 5V tolerance DDC SCL PAD
TXA_HPD	I	65	TXA 5V tolerance HPD PAD

6. Packaging

6.1 Packaging Description

The GSV2005 device is packaged in a 124-pin, 12mmx12mm QFN package.

6.2 Package Dimensions



		SYMBOL	MIN	NOM	MAX
TOTAL THICKNESS		A	0.5	0.55	0.6
STAND OFF		A1	0	0.02	0.05
MOLD THICKNESS		A2	---	0.4	---
L/F THICKNESS		A3		0.152 REF	
LEAD WIDTH		b	0.12	0.17	0.22
BODY SIZE	X	D		12 BSC	
	Y	E		12 BSC	
LEAD PITCH		e		0.35 BSC	
EP SIZE	X	D2	7.2	7.3	7.4
	Y	E2	7.2	7.3	7.4
LEAD LENGTH		L	0.3	0.4	0.5
LEAD TIP TO EXPOSED PAD EDGE		K		1.95 REF	
PACKAGE EDGE TOLERANCE		aaa		0.1	
MOLD FLATNESS		ccc		0.1	
COPLANARITY		eee		0.08	
LEAD OFFSET		bbb		0.07	
EXPOSED PAD OFFSET		fff		0.1	

Figure 6. GSV2005 Package Dimensions