

To Our Customers

Continuing its rich tradition of partnering with high quality Japanese semiconductor suppliers, CEL is now partnering with THine from May of 2015 onwards.

THC63LVD1027(-Q) Evaluation Kit

LVDS Dual Link Evaluation Board

Parts Number: THEVA1027-V2

1. General Description

THEVA1027-V2 is designed to evaluate THC63LVD1027(-Q) for transmission video data.

THC63LVD1027(-Q) chipset can transmit 35bit data via dual channel LVDS.

The maximum input clock frequency of THC63LVD1027(-Q) is 135MHz, and the maximum output clock frequency of THC63LVD1027-Q is 100MHz.

2. Features

THC63LVD1027

- Low power single 3.3V CMOS design
- Power down mode
- Wide dot clock range suited for TV signal(480i to 1080p), PC signal(VGA to UXGA)
- PLL requires no external components
- Single/Dual LVDS (Open-LDI) in, Single/Dual LVDS (Open-LDI) out
- Distribution signal duplication mode
- Support Reduced Swing LVDS for Lower EMI
- 64 Pin TSSOP with Exposed PAD (0.5mm lead pitch)

3. Overview

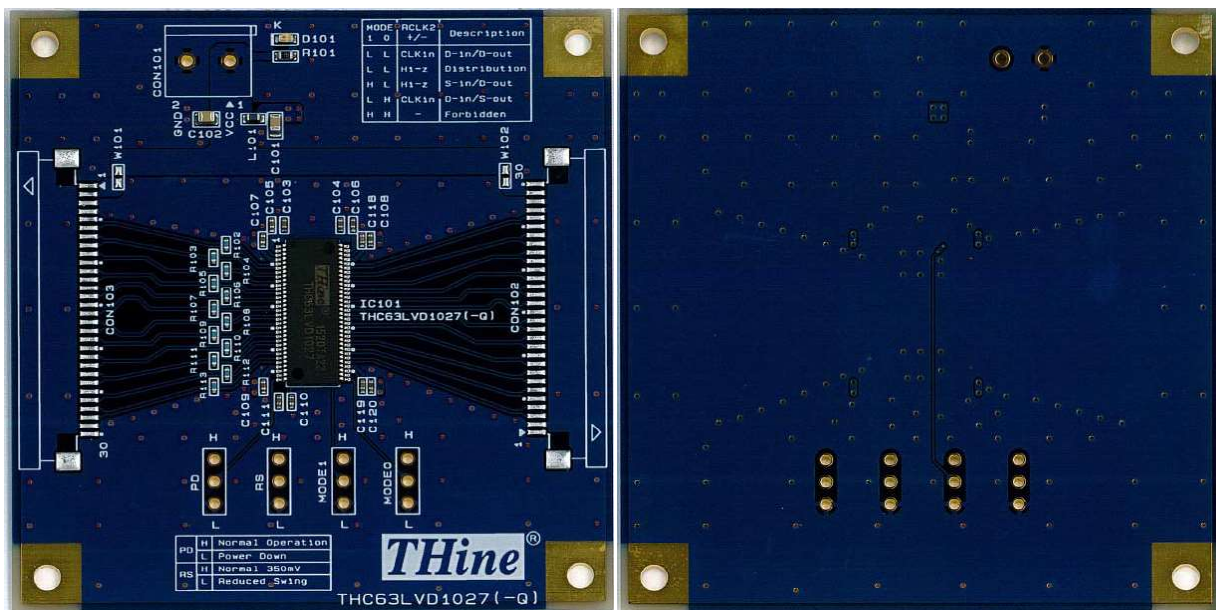


Figure 1 THEVA1027-V2

4. Power Supply Setup

This chapter shows power supply condition.

Caution: Please check if there is no power-GND short on below red trace before supplying any power.

3.3V Power Supply to Each Board

Each evaluation board requires 3.3V power supply. Please use “CON1” connector typically.

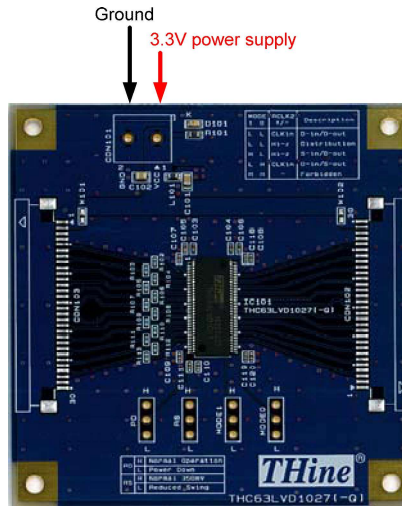


Figure 2 THEVA1027-V2 power supply for evaluation board

Power Supply from / to Connector

3.3V power supply can be connected to CON103 and CON102 by using W101 and W102 solder jumper.

THEVA1027-V2

W101: Connect the 3.3V power supply with pin#1 and 2 of CON103.

W102: Connect the 3.3V power supply with pin#29 and 30 of CON102.

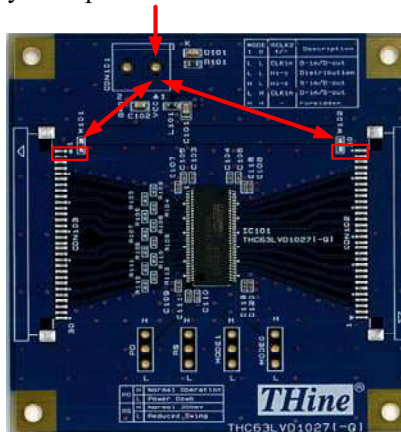


Figure 3 THEVA1027-V2 power supply from / to each connector

5. Function Setting

Setting pin of each board is shown in yellow area of Figure 4.

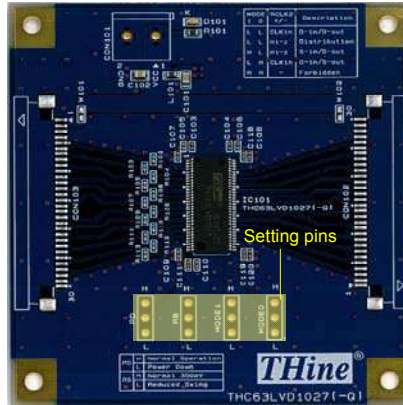
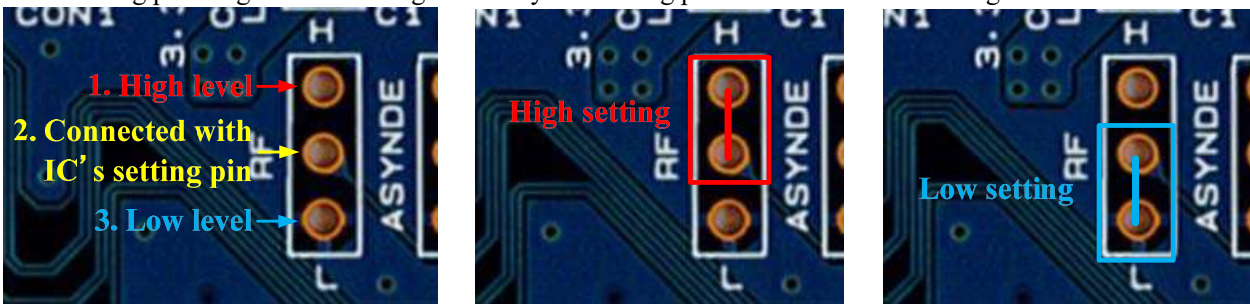


Figure 4 THEVA1027-V2 position of function setting pin

Pin#2 of each 3HEADER is connected to IC’s setting pin.

Each setting pin’s high or low setting can set by connecting pin#2 of 3HEADER and high level or low level.



(a)3HEADER Description

(b)High Level Setting

(c)Low Level Setting

Figure 5 Schematic diagram of High / Low setting description

6. Status Indicate LED

LED “D101” indicates 3.3V power supply status.

7. Function

This chapter shows function setting of THEVA1027-V2.

Table 1 THEVA1027-V2 function setting description

Silk	Symbol	Function																								
PD	PD	Power down function setting H : Normal Operation L : Power Down Mode (All outputs are Hi-Z)																								
RS	RS	LVDS swing mode. <table border="1" data-bbox="644 595 858 730"> <thead> <tr> <th>RS</th> <th>LVDS Swing</th> </tr> </thead> <tbody> <tr> <td>H</td> <td>350mV</td> </tr> <tr> <td>L</td> <td>200mV</td> </tr> </tbody> </table>	RS	LVDS Swing	H	350mV	L	200mV																		
RS	LVDS Swing																									
H	350mV																									
L	200mV																									
MODE1	MODE1	Pixel data mode select <table border="1" data-bbox="644 786 1235 985"> <thead> <tr> <th>MODE1</th> <th>MODE0</th> <th>RCLK2+/-</th> <th>Function</th> </tr> </thead> <tbody> <tr> <td>L</td> <td>L</td> <td>Clock input</td> <td>Dual-in / Dual -out</td> </tr> <tr> <td>L</td> <td>L</td> <td>Hi-Z</td> <td>Distribution</td> </tr> <tr> <td>H</td> <td>L</td> <td>Hi-Z</td> <td>Single-in / Dual -out</td> </tr> <tr> <td>L</td> <td>H</td> <td>Clock input</td> <td>Dual-in / Single-out</td> </tr> <tr> <td>H</td> <td>H</td> <td>-</td> <td>Reserved</td> </tr> </tbody> </table>	MODE1	MODE0	RCLK2+/-	Function	L	L	Clock input	Dual-in / Dual -out	L	L	Hi-Z	Distribution	H	L	Hi-Z	Single-in / Dual -out	L	H	Clock input	Dual-in / Single-out	H	H	-	Reserved
MODE1	MODE0		RCLK2+/-	Function																						
L	L		Clock input	Dual-in / Dual -out																						
L	L		Hi-Z	Distribution																						
H	L		Hi-Z	Single-in / Dual -out																						
L	H	Clock input	Dual-in / Single-out																							
H	H	-	Reserved																							
MODE0	MODE0																									

8. Schematic

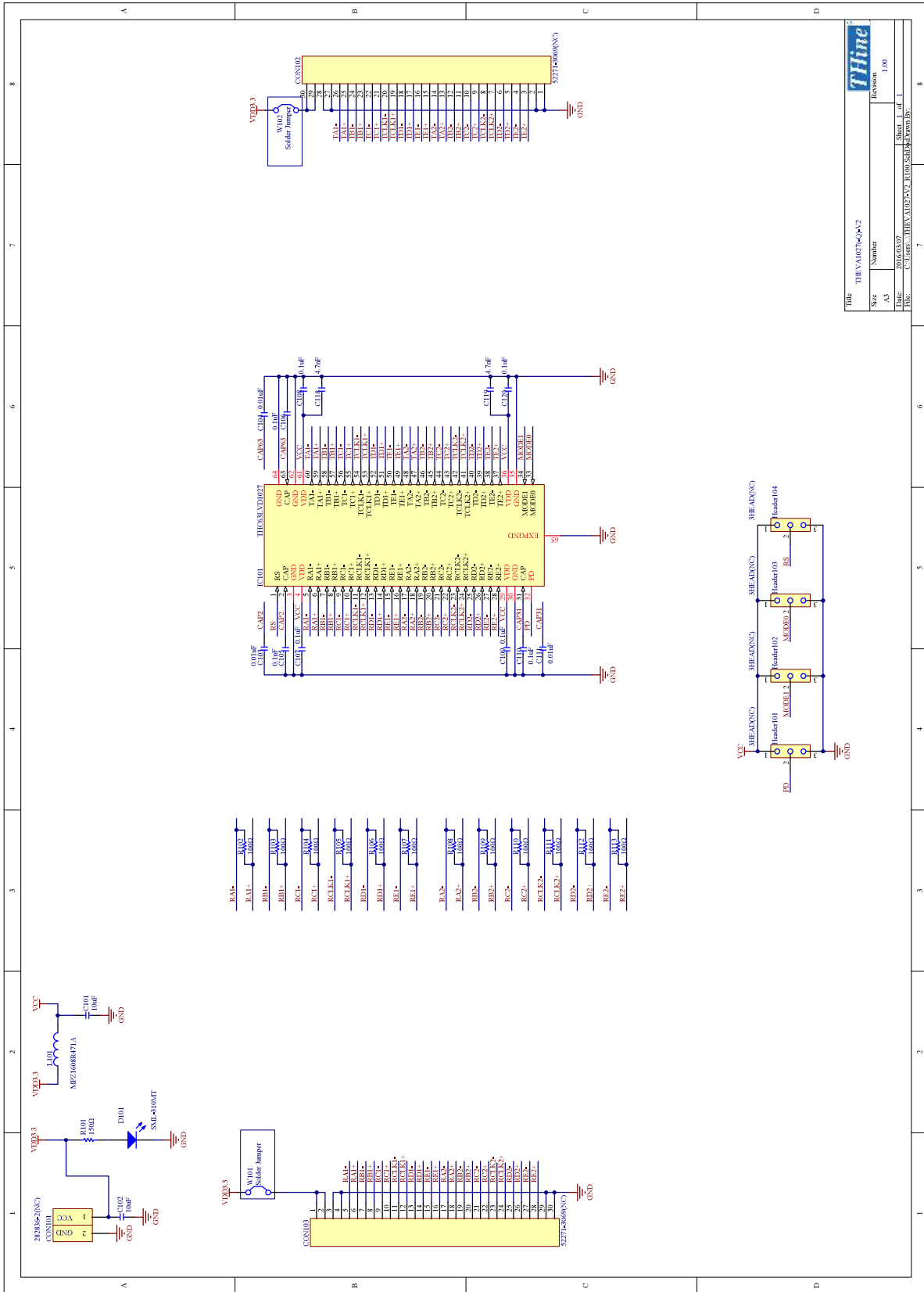


Figure 6 THEVA1027-V2 Schematic

9. Bills of Materials

Table 2 THEVA1027-V2 BOM

Comment	Description	Value	Note	Designator	Qty
Capacitor2012	2012	10uF	16V	C101, C102	2
Capacitor1005	1005	0.01uF	16V	C103, C104, C111	3
Capacitor1005	1005	0.1uF	16V	C105, C106, C107, C108, C109, C110, C120	7
Capacitor1005	1005	4.7nF	16V	C118, C119	2
282836-2	282836-2	282836-2(NC)	5mm pitch	CON101	1
CN-FFC(1.0)30PD	CN-FFC(1.0)30PD	52271-3069(NC)	1mm pitch	CON102, CON103	2
LED1608	1608	SML-310MT	Green	D101	1
3HEAD	3HEAD	3HEAD(NC)	2.54mm pitch	Header101, Header102, Header103, Header104	4
THC63LVD1027	TSSOP64			IC101	1
Inductor1608	1608	MPZ1608R471A		L101	1
Resistor1608	1608	150Ω	0.1W	R101	1
Resistor1005	1005	100Ω	0.1W	R102, R103, R104, R105, R106, R107, R108, R109, R110, R111, R112, R113	12

10. Set Items

Table 3 THEVA1027-V2 Set Items

TYPE	Part No.
DC Connector	282836-2
FFC Connector for LVDS Link	52271-3069
FFC 30pin 1mm Pitch for LVDS Link	98267-0475

It's possible to mount these parts on this board and use.

11. Notices and Requests

Please kindly read, understand and accept this “Notices and Requests” before using this product.

For the Material:

1. The product specifications described in this material are subject to change without prior notice.
2. The circuit diagrams described in this material are examples of the application which may not always apply to design of respective customers. THine Electronics, Inc. (“THine”) is not responsible for possible errors and omissions in this material. Please note if the errors or omissions should be found in this material, THine may not be able to correct them immediately.
3. This material contains THine’s copyright, know-how or other proprietary. Copying or disclosing of the contents of this material to any third party without THine’s prior permission is strictly prohibited.

For the Product:

1. This product is solely designed for evaluation purpose, and other purposes including mass production and distribution are not intended.
2. This product has been solely manufactured for electric design engineers but not for end-users.
3. This product is not radiation-tolerant product.
4. This product is presumed to be used for general electric device, not for applications which require extremely high-reliability/safety (including medical device concerned with critical care, aerospace device, or nuclear power control device). Also, when using this product for any device concerned with control and/or safety of transportation mean, traffic signal device, or other various types of safety device, such use must be after applying appropriate measures to the product.
5. This product has been designed with the utmost care to accomplish the purpose of evaluation of IC products manufactured by THine Electronics, Inc., however, THine MAKES NO WARRANTIES OR REPRESENTATIONS WITH REGARD TO ANY PERFORMANCE OR FUNCTION OF THIS PRODUCT IN ANY CIRCUMSTANCE.
6. This product has been manufactured with the utmost care in quality control and product reliability, however, there may be faults or defects with a low but fixed probability, as inevitable phenomenon concerned with semiconductor manufacturing processes. Therefore, Customers are encouraged to have sufficiently redundant or error-preventive design applied to the use of the product so as not to have THine’s product cause any social or public damage. Replacement of the product is only available in case of obvious defects of mount devices at the point of unpacking the product. Neither replacement nor failure analysis of the product is available in any other case of defects with the product and/or the product’s components.
7. Customers are asked, if required, to judge by themselves on whether this product falls under the category of strategic goods under the Foreign Exchange and Foreign Trade Control Law.
8. Please Note that if infringement of any third party’s industrial ownership should occur by using this product, THine will be exempted from any responsibility unless it directly relates to the production process or functions of the product.
9. Developing, designing and manufacturing of Customers’ own products, equipments or system by using of this product is strictly prohibited in any way.

THine Electronics, Inc.

sales@thine.co.jp