THC63LVD827(-Q) Evaluation Kit

LVDS Dual Link Evaluation Board

Parts Number: THEVA827

1. General Description

THEVA827 is designed to evaluate THC63LVD827(-Q) for transmission video data.
THC63LVD827(-Q) chipset can transmit 24bit RGB data and HS/VS/DE sync via dual channel LVDS.
The maximum clock frequency of THC63LVD827(-Q) is 174MHz.

2. Features

THC63LVD827

- Low power 1.8V CMOS design (1.8~3.3V IO voltage supported)
- Power down mode
- Wide dot clock range suited for TV signal(480i to 1080p), PC signal(VGA to WUXGA)
- PLL requires no external components
- Clock edge selectable
- Single TTL in, Single/Dual LVDS (Open-LDI) out
- Double Edge Input(Single in/Dual out Mode)
- Additional 6bit only low power mode
- 2 LVDS Data Mapping Modes
- Pseudo Random Pattern Generation Circuit
- Support Reduced Swing LVDS for Lower EMI
- TFBGA 72 Pin 7x7mm 0.65mm pitch

3. Overview

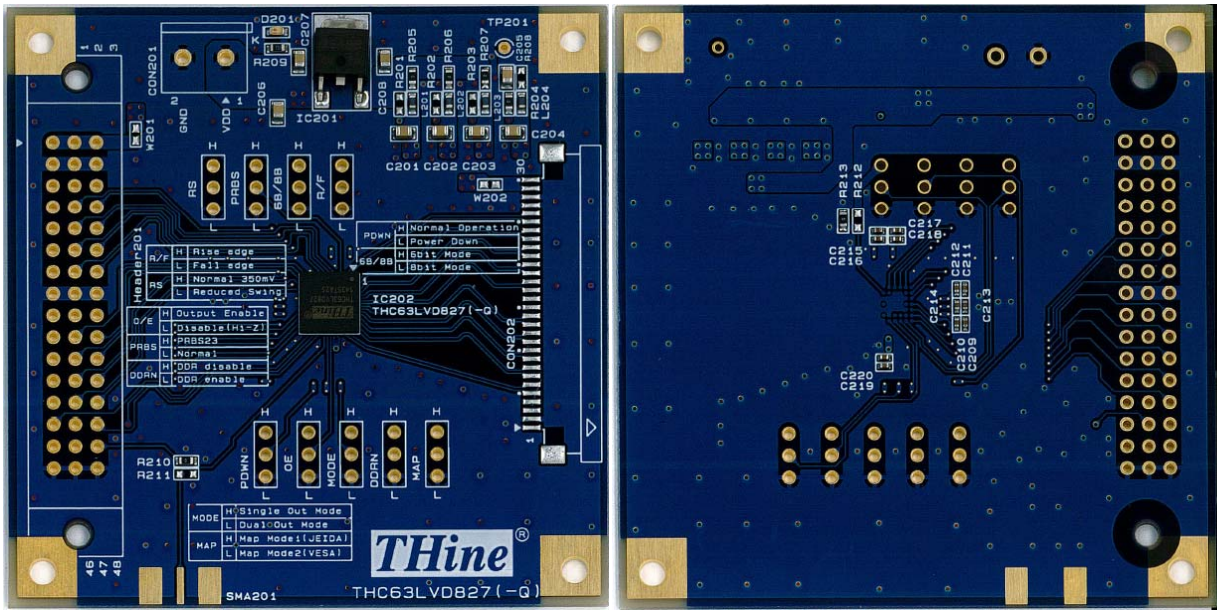


Figure 1 THEVA827

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.

1.8~3.3V Power Supply to the Board

Evaluation board requires 1.8~3.3V power supply. Please use “CON201” connector typically.

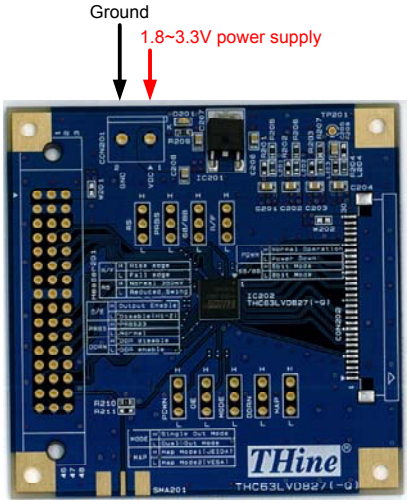


Figure 2 THEVA827 power supply for evaluation board

Power Supply from / to Connector

power supply can be connected to Header201 and CON202 by using W201 and W202 solder jumper.

THEVA827

W201: Connect the power supply with pin#1, 2 and 3 of Header201.
W202: Connect the power supply with pin#29 and 30 of CON202.

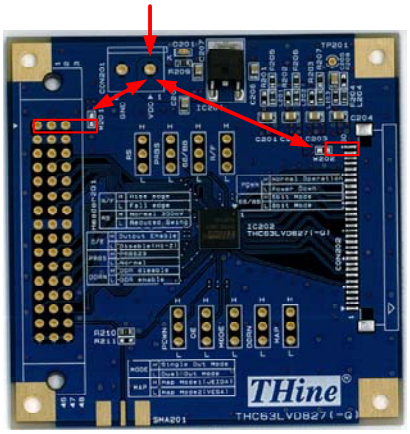


Figure 3 THEVA827 power supply from / to each Connector

5. Function Setting

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

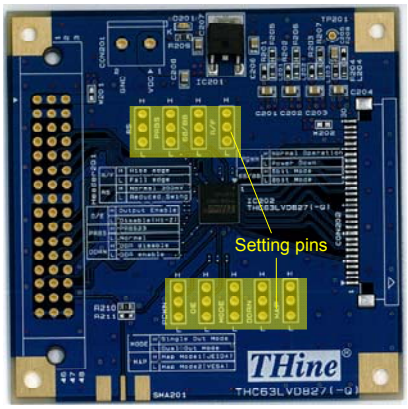
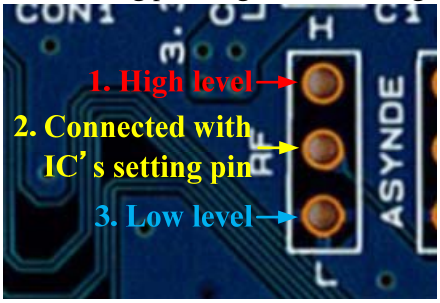
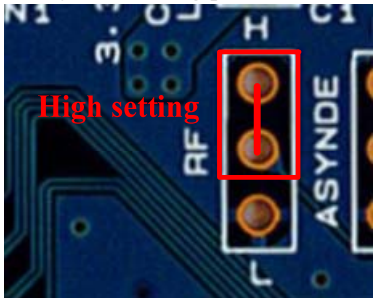


Figure 4 THEVA827 position of function setting pins

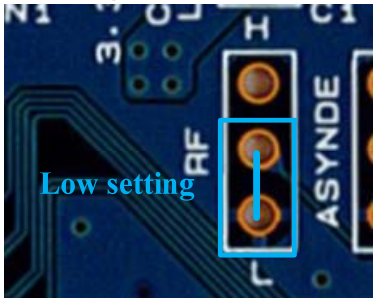
Pin#2 of each 3HEADER is connected to IC's setting pin.
Each setting pin's high or low setting can set by connecting pin#2 of 3HEADER and high level or low level.



(a)3HEADER Description



(b)High Level Setting



(c)Low Level Setting

Figure 5 Schematic diagram of High / Low setting description

6. Clock Input from SMA Connector

THEVA827 can also choose the TTL clock input from SMA connector by using 0ohm resistor. If you want to use SMA connector for clock input, please change the 0ohm resistor mount from R210 to R211.

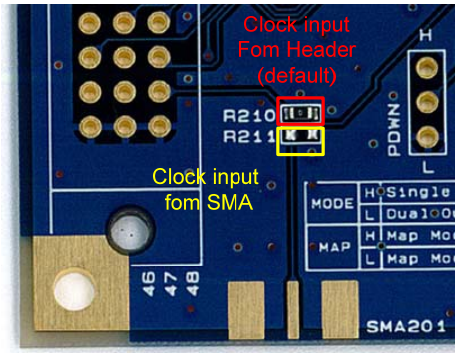


Figure 6 THEVA827 TTL clock input connector select

7. Status Indicate LED

LED “D201” indicates power supply status.

8. Function

This chapter shows function setting of THEVA827.

Table 1 THEVA827 Function Setting Description

<table>
<tr><th>Silk</th><th>Symbol</th><th>Function</th></tr>
<tr><td>R/F</td><td>R/F</td><td>Input clock triggering edge select.
H : Rising Edge
L : Falling Edge</td></tr>
<tr><td>RS</td><td>RS</td><td>LVDS swing mode, VREF select.
<table>
<tr><th>RS</th><th>LVDS Swing</th><th>Small Swing Input Support</th></tr>
<tr><td>V_{IHM}</td><td>350mV</td><td>N / A</td></tr>
<tr><td>V_{IMM}</td><td>350mV</td><td>RS = V_{REF}</td></tr>
<tr><td>V_{ILM}</td><td>200mV</td><td>N / A</td></tr>
</table></td></tr>
<tr><td>MAP</td><td>MAP</td><td>LVDS mapping table select
<table>
<tr><th>MAP</th><th>Mapping Mode</th></tr>
<tr><td>H</td><td>Mapping MODE1</td></tr>
<tr><td>L</td><td>Mapping MODE2</td></tr>
</table></td></tr>
<tr><td>MODE</td><td>MODE</td><td>Pixel data mode select
<table>
<tr><th>MODE</th><th>Function</th></tr>
<tr><td>H</td><td>Single Link (Single-in / Single-out)</td></tr>
<tr><td>L</td><td>Dual Link (Single-in / Dual -out)</td></tr>
</table></td></tr>
<tr><td>O/E</td><td>OE</td><td>Output enable
H : Output Enable
L : Output Disable (all outputs are Hi-Z)</td></tr>
<tr><td>/PDWN</td><td>PDWN</td><td>Power down function setting
H : Normal Operation
L : Power Down Mode (All outputs are Hi-Z)</td></tr>
<tr><td>PRBS</td><td>PRBS</td><td>PRBS (Pseudo Random Binary Sequence) generator is active for evaluation purposer
H : PRBS Generator Enable
L : Normal Operation</td></tr>
<tr><td>6B/8B</td><td>6B/8B</td><td>6bit / 8bit mode select
H : 6bit mode (21bit mode)
L : 8bit mode (27bit mode)</td></tr>
<tr><td>DDRN</td><td>DDRN</td><td>DDR enable when MODE=L (Dual out mode), Negative active polarity
H : DDR (Double Edge input) function disable
L : DDR (Double Edge input) function enable</td></tr>
</table>

9. Schematic

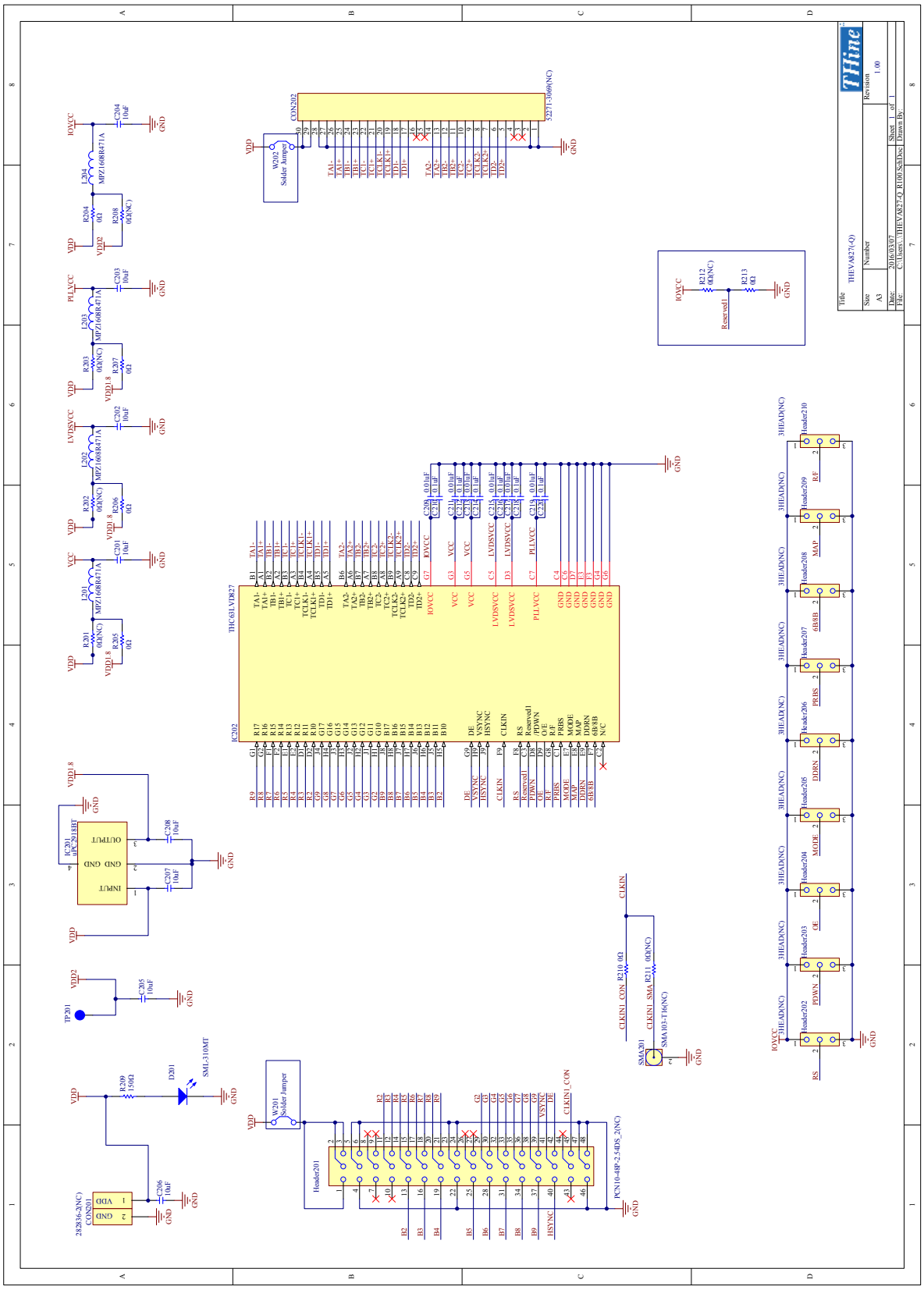


Figure 7 THEVA827 Schematic

10.Bill of Materials

Table 2 THEVA827 BOM

Comment	Description	Value	Note	Designator	Q'ty
Capacitor2012	2012	10uF	16V	C201, C202, C203, C204, C205, C206, C207, C208	8
Capacitor1005	1005	0.01uF	16V	C209, C211, C213, C215, C217, C219	6
Capacitor1005	1005	0.1uF	16V	C210, C212, C214, C216, C218, C220	6
282836-2	282836-2	282836-2(NC)	5mm pitch	CON201	1
CN-FFC(1.0)30PD	CN-FFC(1.0)30PD	52271-3069(NC)	1mm pitch	CON202	1
LED1608	1608	SML-310MT	Green	D201	1
3HEAD	3HEAD	3HEAD(NC)	2.54mm pitch	Header202, Header203, Header204, Header205, Header206, Header207, Header208, Header209, Header210	9
uPC2918BT	SC-63			IC201	1
THC63LVD827	TFBGA72			IC202	1
Inductor1608	1608	MPZ1608R471A		L201, L202, L203, L204	4
Resistor1608	1608	0ohm	1A(0ohm)	R205, R206, R207, R204, R210, R213	6
Resistor1608	1608	150Ω	0.1W	R209	1

11.Set Items

Table 3 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
Pin Header	---

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

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