

Description

IS31IO7326 is a 64 key, key-scan controller. It offloads the burden of keyboard scanning from the host processor. The IS31IO7326 supports keypad matrix of up to 8x8. Key press and release events are encoded into a byte format and loaded into a key event register for retrieval by the host processor.

To minimize power, the IS31IO7326 automatically enters a low power standby mode when there is no keypad, I/O, or host activity.

Features

- Supply voltage range from 3.0V to 5.5V
- 400kHz I²C serial interface
- Available for multi-key press detect
- Low 0.3μA (typ.) standby current
- Operate in -40°C to +125°C
- Pb-free 4mm x 4mm QFN-24 package

Quick Start

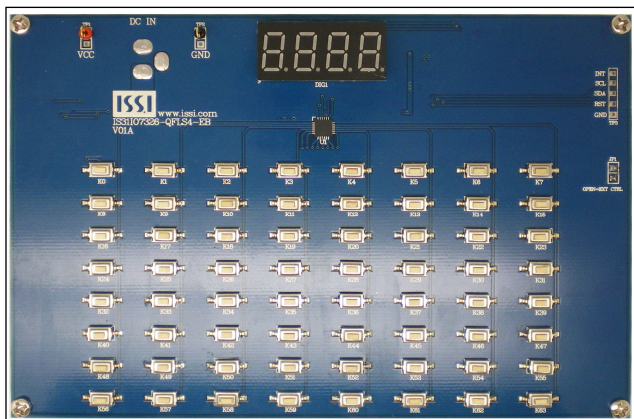


Figure 1: Photo of IS31IO7326 Evaluation Board

Evaluation Board Ordering Information

| Part No. | IC Package |
|---------------------|-------------------|
| IS31IO7326-QFLS4-EB | QFN-24, Lead-free |

Table1: Ordering Information

For pricing, delivery, and ordering information, please contact ISSI's analog marketing team at analog_mkt@issi.com or (408) 969-6600.

Recommended Equipment

- 5.0V, 2A power supply

Absolute Maximum Ratings

- ≤ 5.5V power supply

Caution: Do not exceed the conditions listed above, otherwise the board will be damaged.

Procedure

The IS31FL7326 evaluation board is fully assembled and tested. Follow the steps listed below to verify board operation.

Caution: Do not turn on the power supply until all connections are completed.

- 1) Connect the ground terminal of the power supply to the GND and the positive terminal to the VCC. Or connect the DC power to the connector (DC IN).
- 2) Turn on the power supply and pay attention to the supply current. If the current exceeds 200mA, please check for circuit fault.

Evaluation Board Operation

K0 to K63 are push buttons on the demo board. When each of the button is pressed briefly, a number corresponding to the key will be displayed. When the button is pressed and held for a few seconds, the period dot will also be displayed. If two buttons are pressed at the same time, the corresponding key numbers will be displayed.

Note:

IS31I07326 solely controls the Key-Scan function on the evaluation board.

Software support

Note:

JP1 is set to close circuit by default. If it is set to open, the on-board MCU will stop working. The pins driving the I2C pin from MCU will be set to High Impedance. External control signals can be connected to TP3 port to control the IS31I07326.

Refer to the datasheet to get more information about IS31I07326.

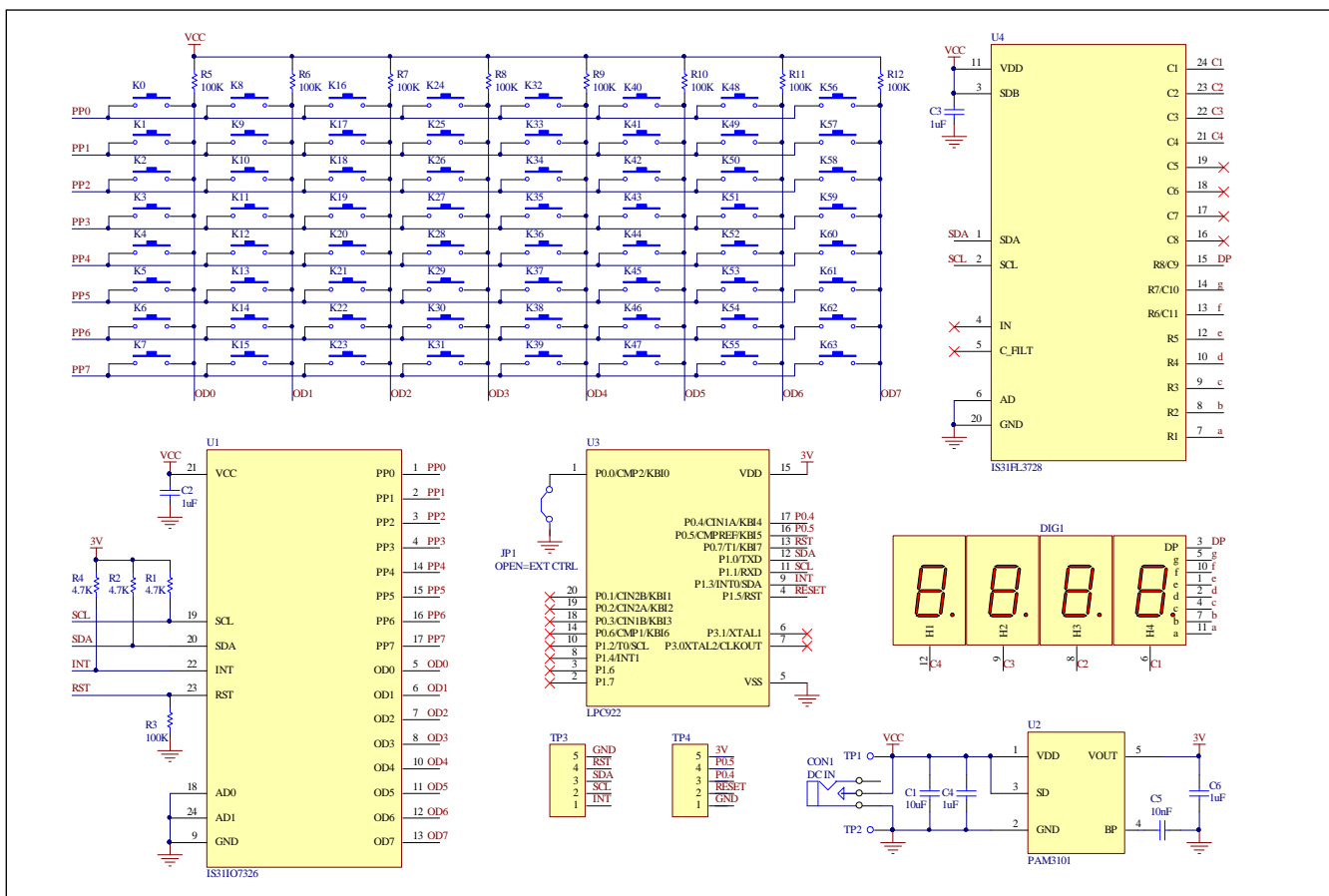


Figure 2: IS31I07326 Application Schematic

Bill of Materials

| Name | Symbol | Description | Qty | Supplier | Part No. |
|------------|-------------|---------------------------------|-----|----------|------------|
| I/O IC | U1 | 16 I/O ports.Expander | 1 | ISSI | IS31IO7326 |
| LDO | U2 | Low-dropout Regulator | 1 | PAM | PAM3101 |
| MCU | U3 | Microcontroller | 1 | NXP | LPC922 |
| LED Driver | U4 | Array FxLED Driver | 1 | ISSI | IS31FL3728 |
| Displayer | DIG1 | 4 Digit Display, Common Kathode | 1 | ZSO | 3461AS |
| Resistors | R1,R2,R4 | RES,4.7k,1/16W,±5%,SMD | 3 | | |
| Resistor | R3 | RES,100k,1/16W,±5%,SMD | 1 | | |
| Resistors | R5~R12 | RES,100k,1/16W,±5%,SMD | 8 | | |
| Capacitor | C1 | CAP,10μF,16V,±20%,SMD | 1 | | |
| Capacitors | C2,C3,C4,C6 | CAP, 1μF,16V,±20%,SMD | 4 | | |
| Capacitor | C5 | CAP,10nF,16V,±20%,SMD | 1 | | |
| Buttons | K0~K63 | Button SMD | 64 | | |

Table 2: Bill of Materials, refer to Figure 2 above.

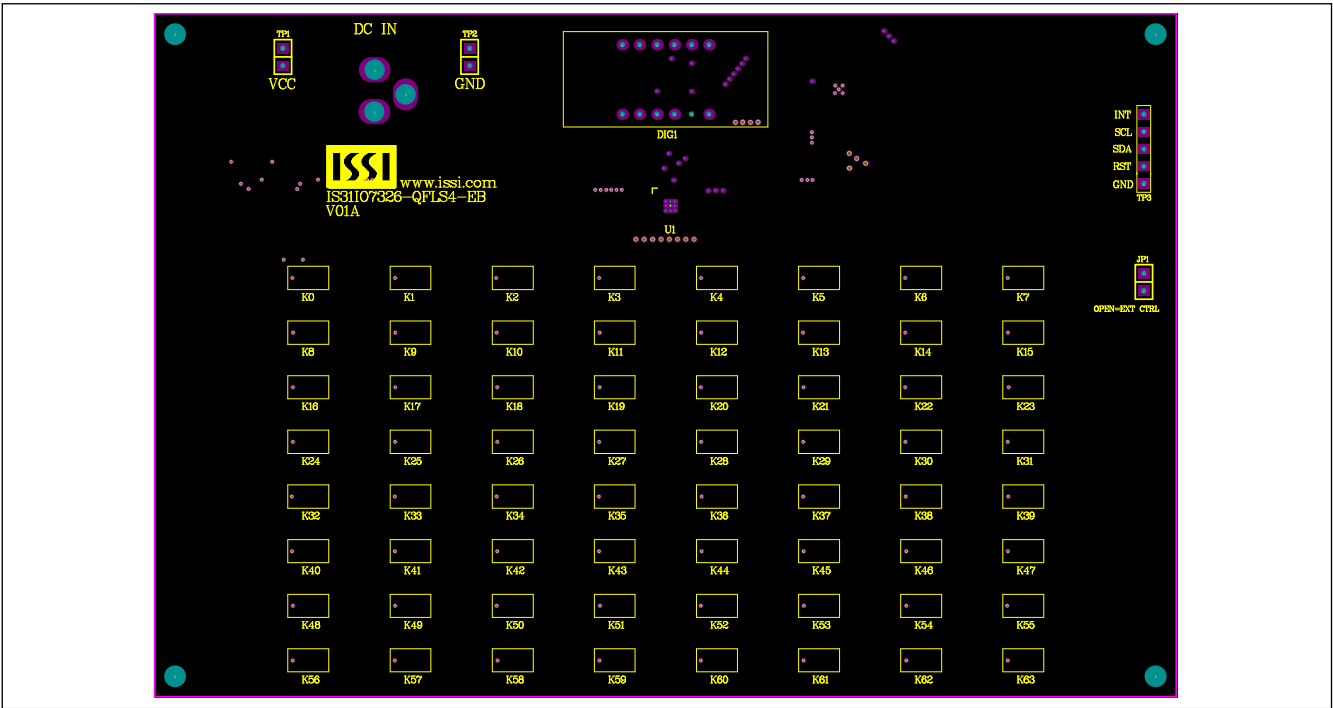


Figure 3: Board Component Placement Guide -Top Layer

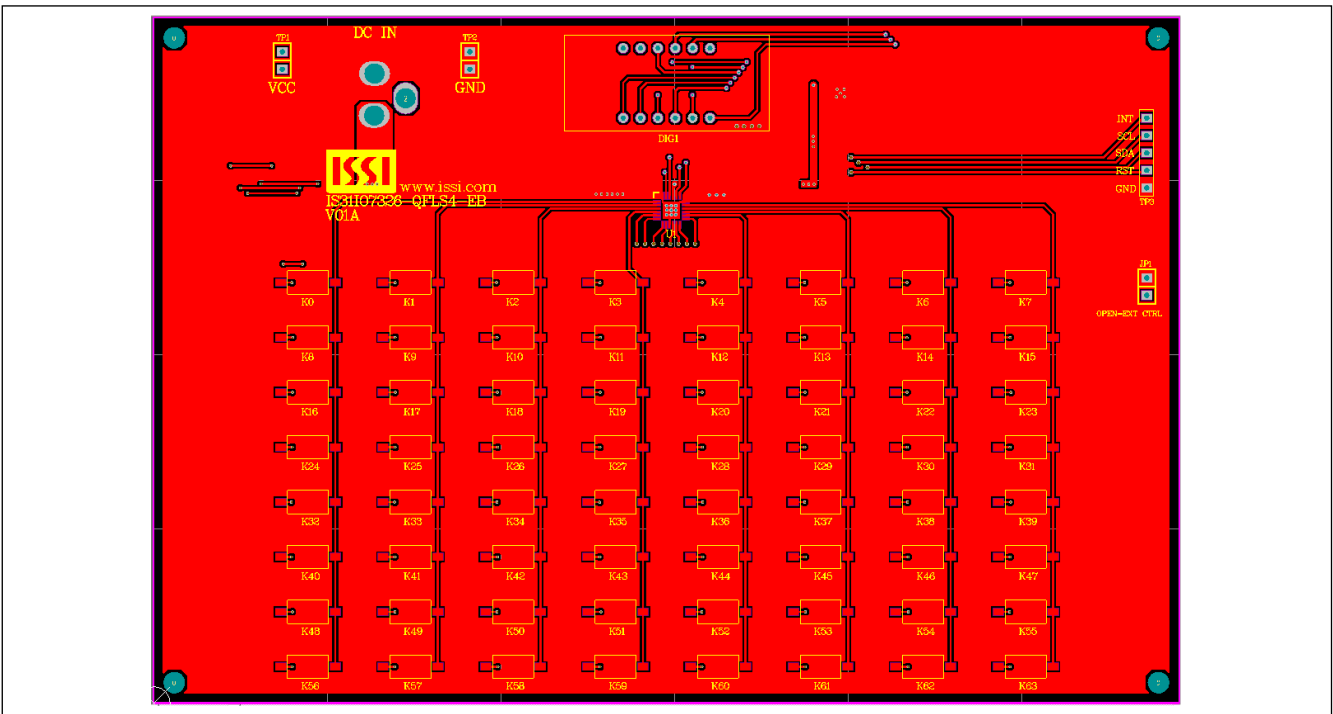


Figure 4: Board PCB Layout- Top Layer

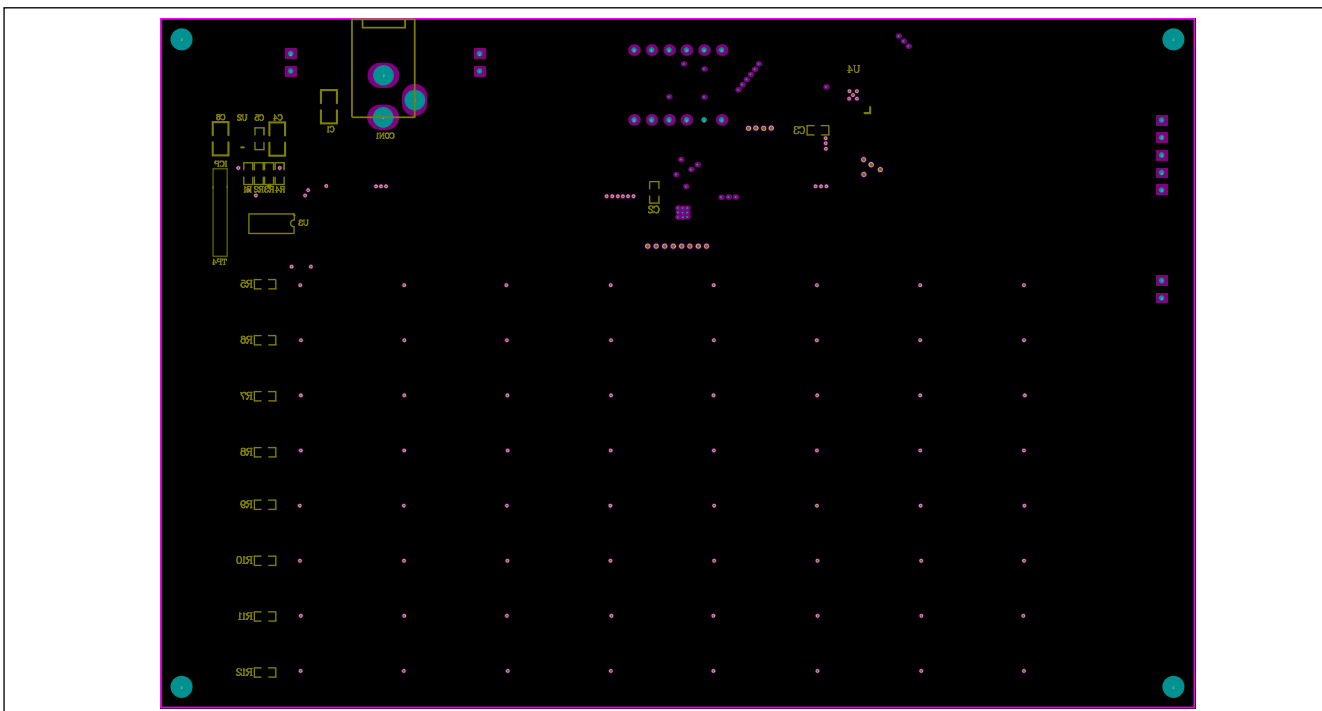


Figure 5: Board Component Placement Guide -Bottom Layer

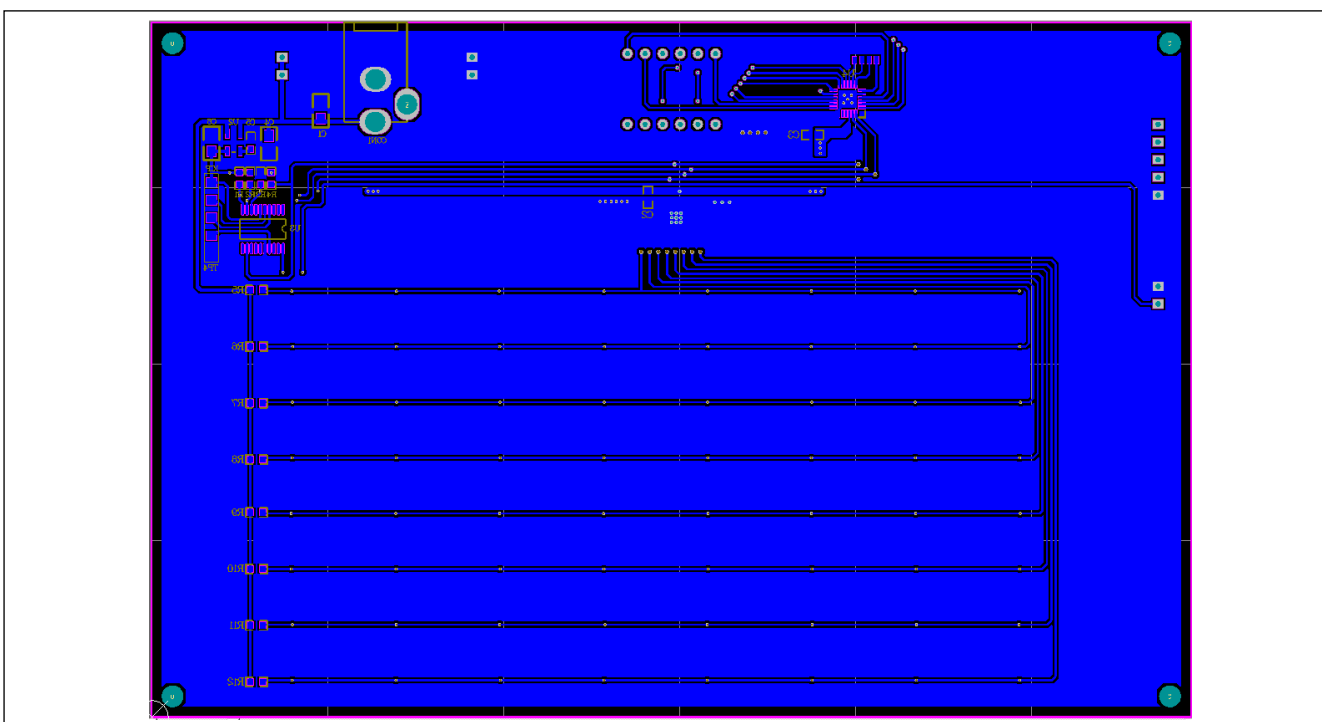


Figure 6: Board PCB Layout -Bottom Layer



IS31IO7326 Debounced 8x8 Key-Scan Controller Evaluation Board Guide

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