

Description

The IS31IO7325 2-wire serial-interfaced peripheral features 16 I/O ports. Ports are divided into eight push pull I/Os and eight open-drain I/Os and transition detection.

Any of the 16 I/O ports can be configured as an input or an output. All I/O ports configured as inputs are continuously monitored for state changes (transition detection). State changes are indicated by the \overline{INT} output. The interrupt is latched, allowing detection of transient changes. When the IS31IO7325 is subsequently read through the serial interface, any pending interrupt is cleared.

Features

- Supply voltage range from 2.4V to 5.5V
- 400kHz I²C serial interface
- 8 push-pull I/O ports
- 8 open-drain I/O ports, rated to 20mA sink current at 0.22V headroom
- Selectable I/O port power-up default logic states
- \overline{INT} output alerts change on inputs
- Low 0.3 μ A (Typ.) standby current
- Pb-free SOP-24 package

Quick Start

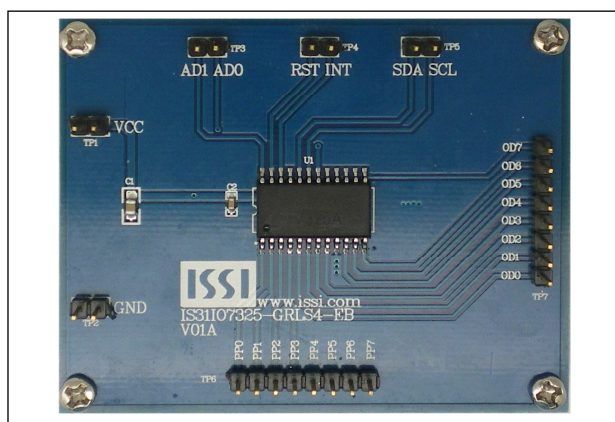


Figure 1: Photo of IS31IO7325 Evaluation Board

Recommended Equipment

- 2.5V~5.5V, 2A power supply

Absolute Maximum Ratings

- $\leq 5.5V$ power supply

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

Procedure

Follow the steps listed below operation.

- 1) Connect power positive terminal to VCC pin and negative terminal to GND pin.
- 2) INT pin is pulled-up to VCC by a 4.7K Ω resistor.
- 3) SCL is an input clock pin. SDA is a bi-direction open drain pin. Both of them are pulled-up to VCC by 4.7K Ω resistors.
- 4) RST pin is Low active reset pin with 4.7K Ω resistor pull-up.
- 5) AD1 and AD0 is used to set the I2C device address. Their value can be 00, 01, 10 and 11 (0 is GND; 1 is VCC). After power-on, I/O output will be dependent on the AD1 and AD0 connection (see Table 2 for details). Both AD1 and AD0 are pull-ed to GND by 100K Ω on this demo board.
- 6) TP6 is PP output port while TP7 is OD output port.

Evaluation Board Ordering Information

Part No.	IC Package
IS31IO7325-GRLS4-TR	SOP-24, Lead-free

Table1: Ordering Information

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

Pin Connection		Port Power Up Default															
AD1	AD0	PP7	PP6	PP5	PP4	PP3	PP2	PP1	PP0	OD7	OD6	OD5	OD4	OD3	OD2	OD1	OD0
GND	GND	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
GND	V _{CC}	0	0	0	0	1	1	1	1	0	0	0	0	Hi-Z	Hi-Z	Hi-Z	Hi-Z
V _{CC}	GND	1	1	1	1	0	0	0	0	Hi-Z	Hi-Z	Hi-Z	Hi-Z	0	0	0	0
V _{CC}	V _{CC}	1	1	1	1	1	1	1	1	Hi-Z	Hi-Z	Hi-Z	Hi-Z	Hi-Z	Hi-Z	Hi-Z	Hi-Z

Table2

Software support

Please refer to the datasheet to get more information about IS31I07325

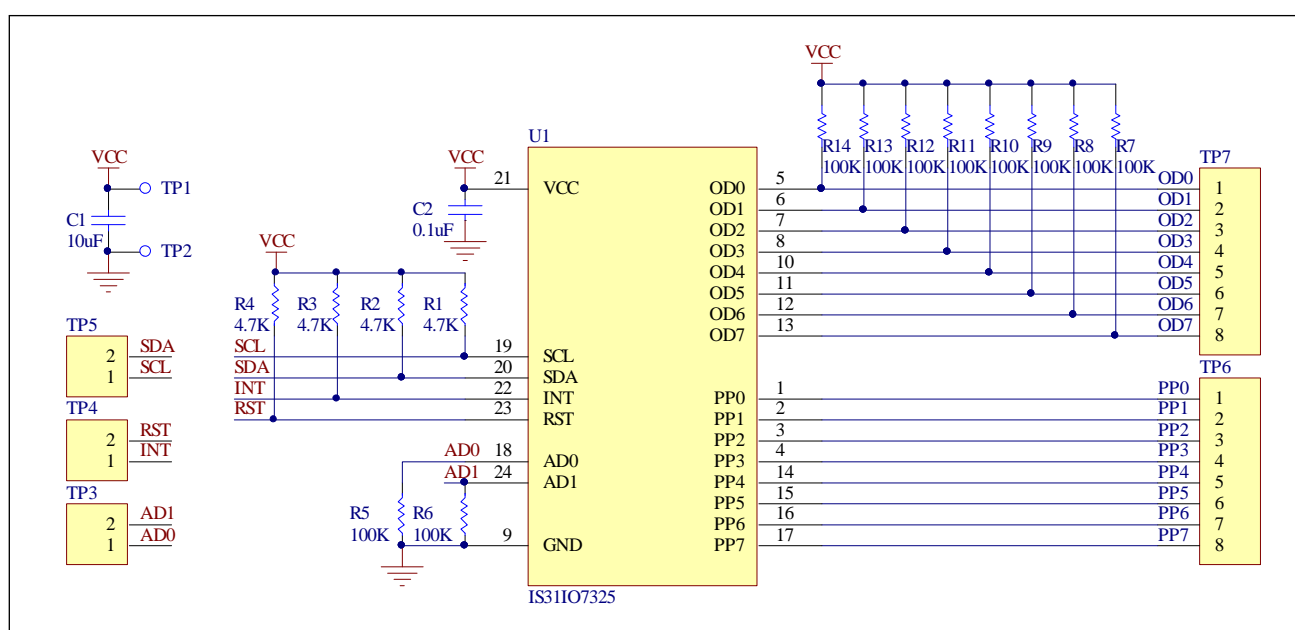


Figure 2: IS31I07325 Application Schematic

Bill of Materials

Name	Symbol	Description	Qty	Supplier	Part No.
I/O IC	U1	16 I/O Ports.Expander	1	ISSI	IS31I07325
Resistors	R1~R4	RES,4.7k,1/16W,±5%,SMD	4		
Resistors	R5,R6	RES,100k,1/16W,±5%,SMD	2		
Resistors	R7~R14	RES,100k,1/16W,±5%,SMD	8		
Capacitor	C1	CAP,10µF,16V,±20%,SMD	1		
Capacitor	C2	CAP,0.1µF,16V,±20%,SMD	1		

Table 3: Bill of Materials, refer to Figure 2 above.

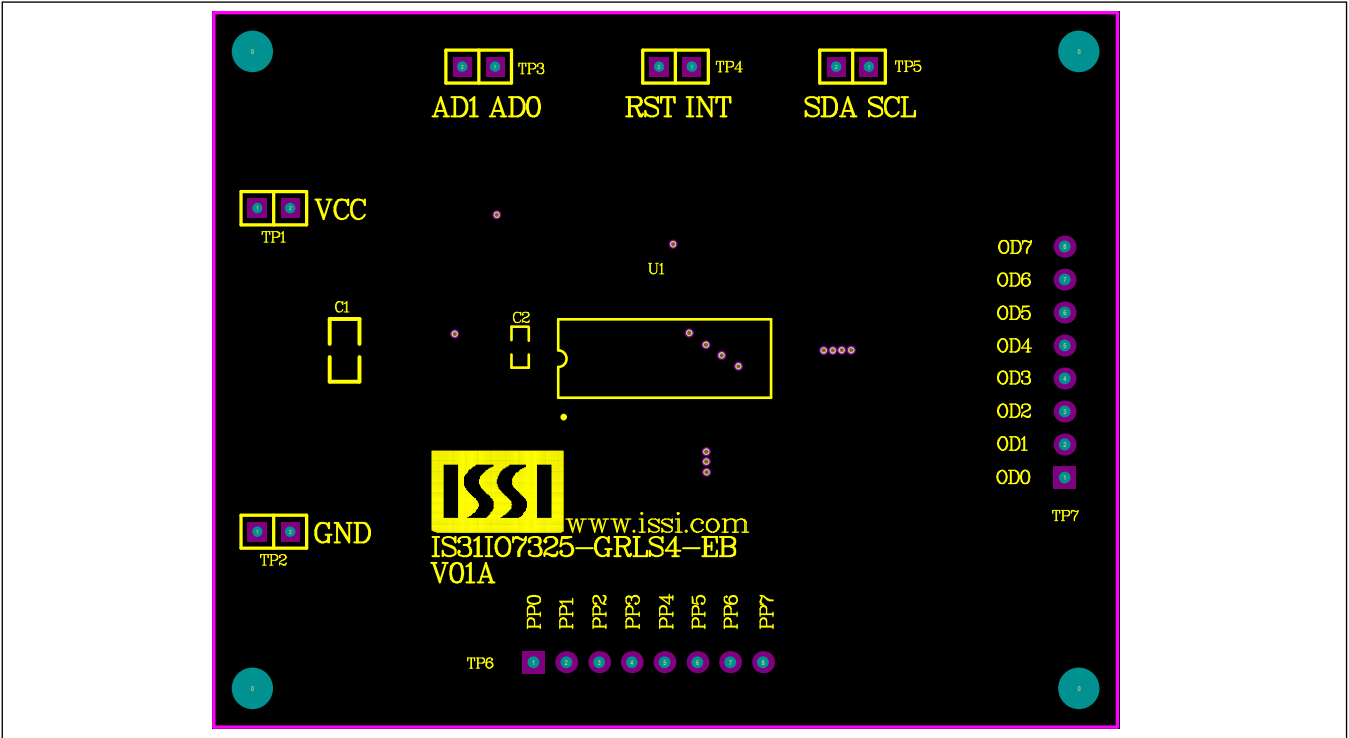


Figure 3: Board Component Placement Guide -Top Layer

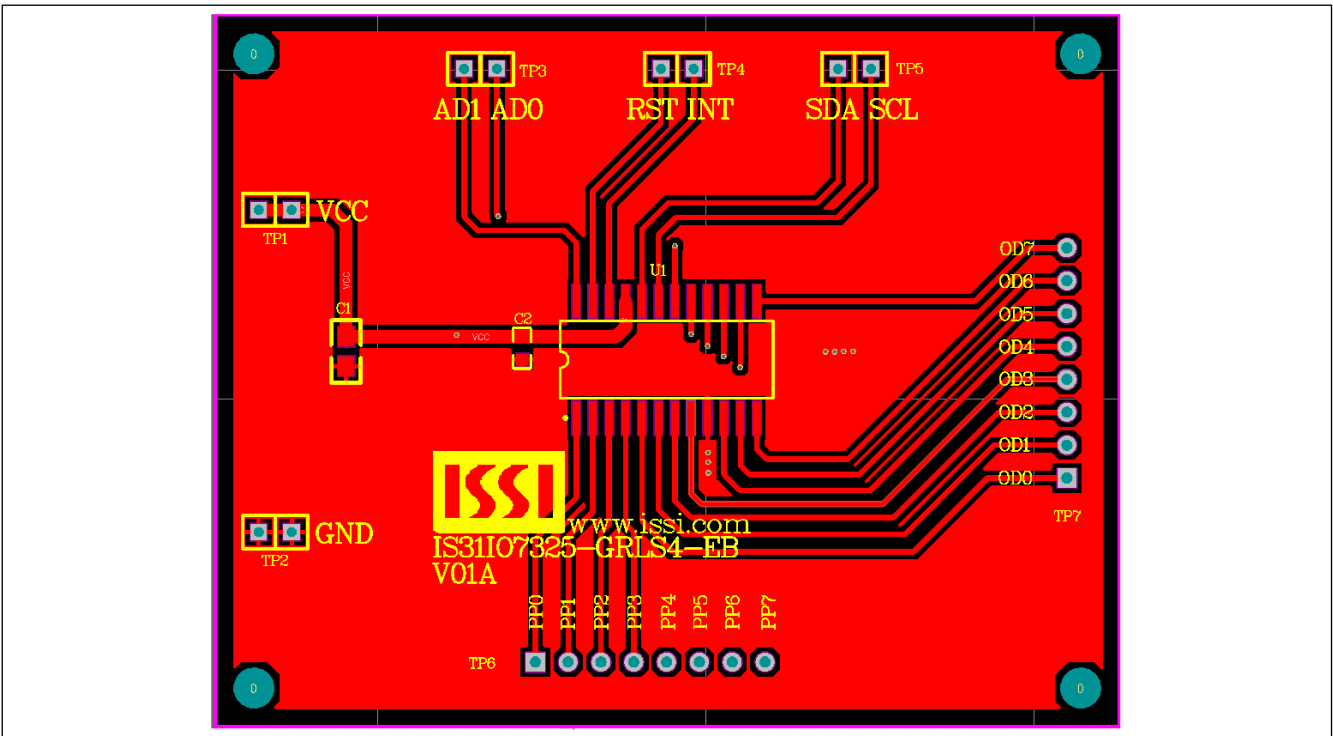


Figure 4: Board PCB Layout- Top Layer

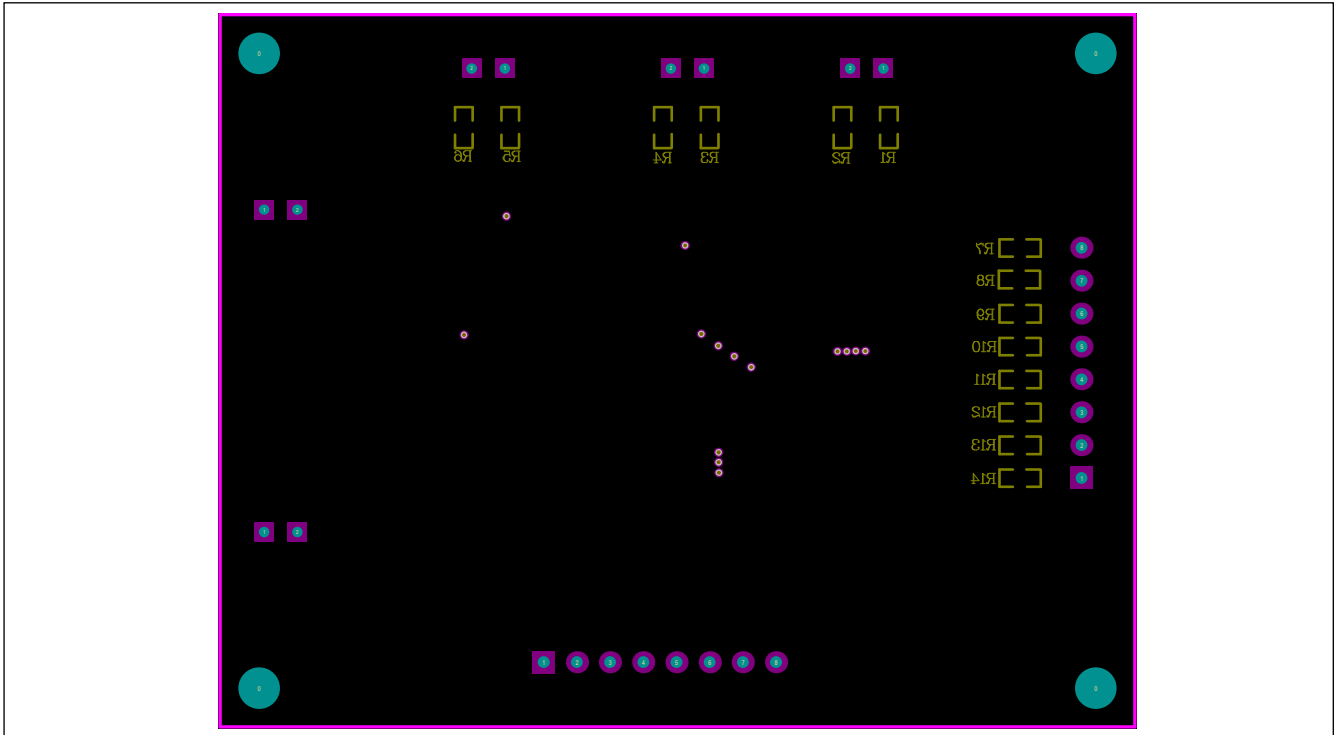


Figure 5: Board Component Placement Guide -Bottom Layer

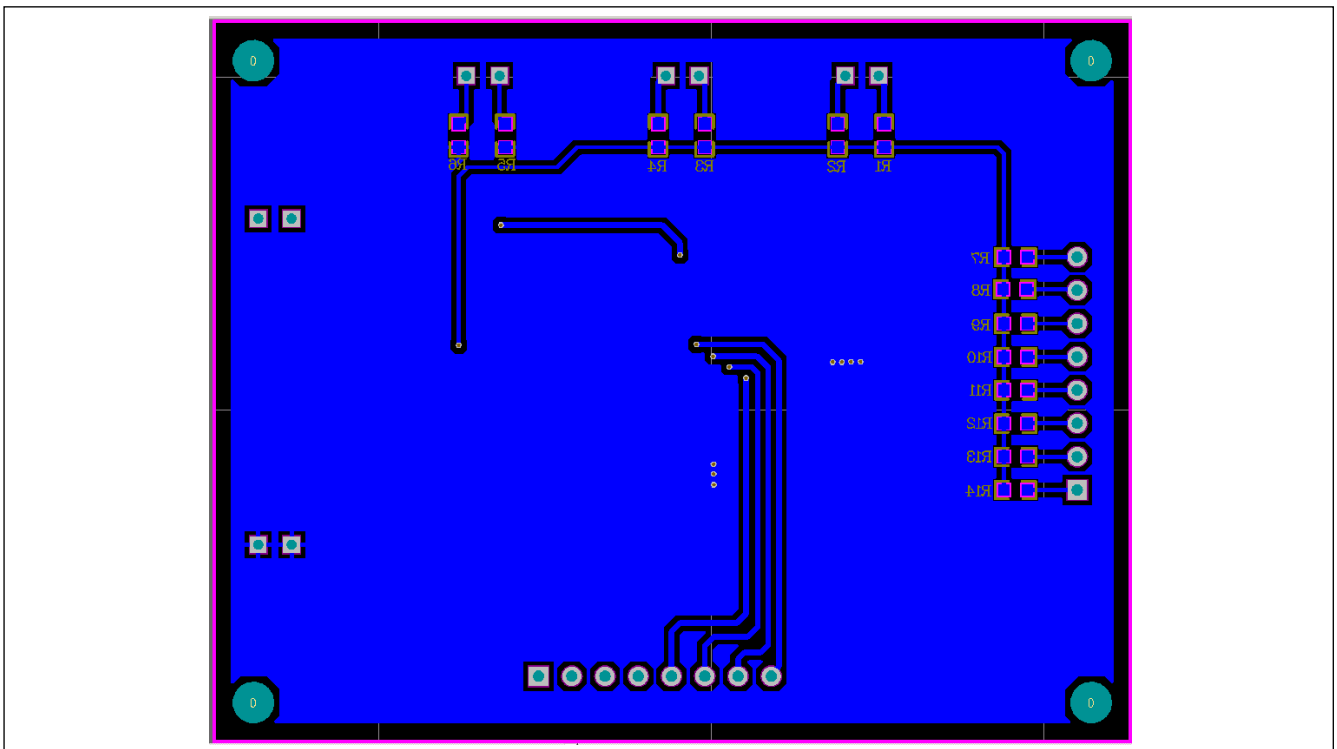


Figure 6: Board PCB Layout-Bottom Layer



IS31IO7325 Multi-Function I/O Driver Evaluation Board Guide

Copyright © 2012 Integrated Silicon Solution, Inc. All rights reserved. ISSI reserves the right to make changes to this specification and its products at any time without notice. ISSI assumes no liability arising out of the application or use of any information, products or services described herein. Customers are advised to obtain the latest version of this device specification before relying on any published information and before placing orders for products.

Integrated Silicon Solution, Inc. does not recommend the use of any of its products in life support applications where the failure or malfunction of the product can reasonably be expected to cause failure of the life support system or to significantly affect its safety or effectiveness. Products are not authorized for use in such applications unless Integrated Silicon Solution, Inc. receives written assurance to its satisfaction, that:

- a.) the risk of injury or damage has been minimized;
- b.) the user assume all such risks; and
- c.) potential liability of Integrated Silicon Solution, Inc is adequately protected under the circumstances