LVDS BOARD SPECIFICATION

Model: ITWSCB402

Table of Content

General Product Information and Specification

1. General description

The functional block diagram for ITWSCB402 is shown in Fig.1. This converter board plays the role of interface between LCD Module (40pin LVDS LCM series) and related A/D board.

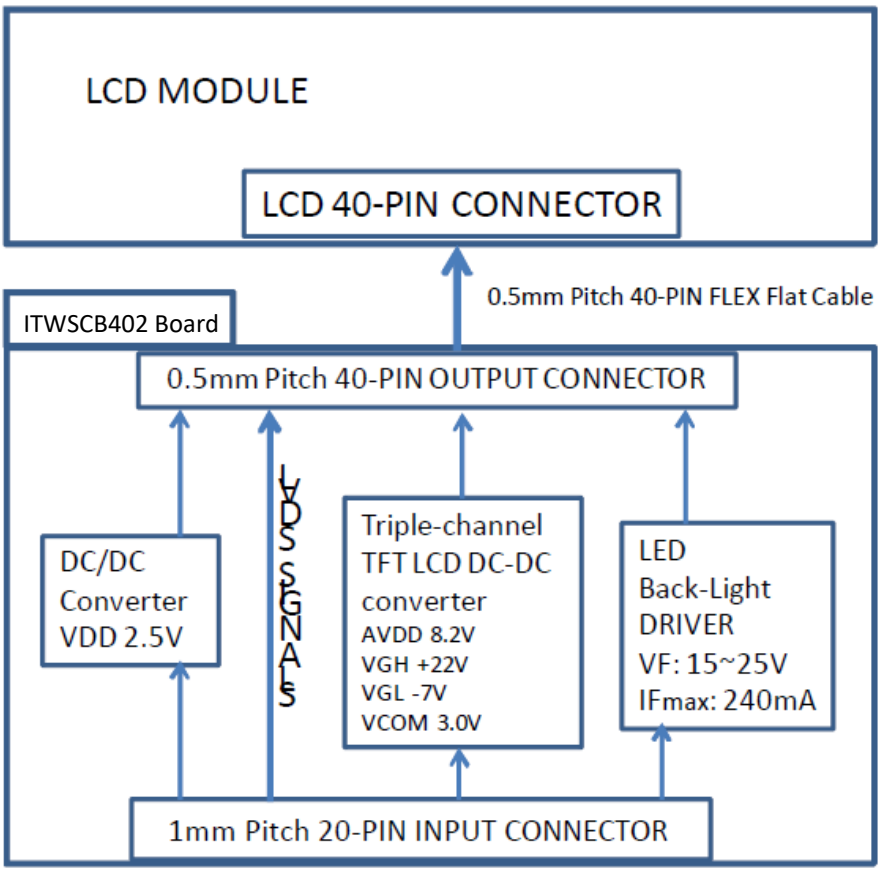

Fig. 1 Function Block Diagram of ITWSCB402

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This product has the following features:

- High-efficiency DC/DC converter topology.
- Built-in Fault and thermal protection for the DC/DC converter.
- Open LED protection.
- Constant LED current.
- 100% Full-Load Tested.
- Designed, Manufactured in Taiwan.

2. Physical Dimension, Pin & Connector Assignment

Physical Dimension:

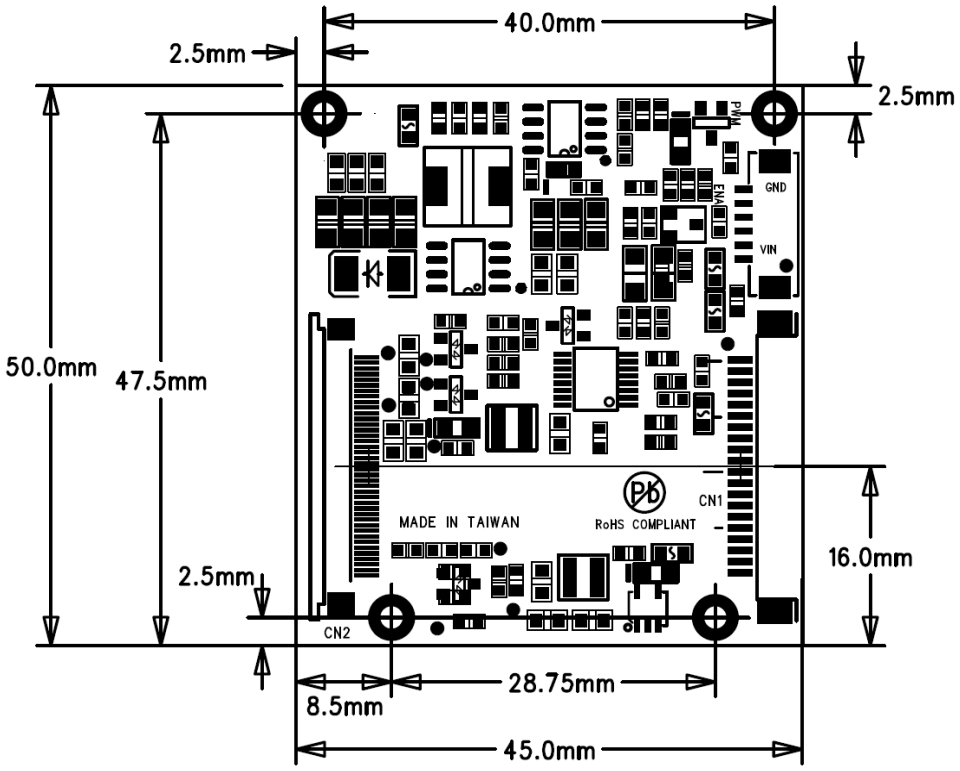

Fig. 2 Mechanical dimension.

Unit:mm

PCB size: 45 mm × 50 mm × 3.5 mm
PCB thickness: 1 mm
The height of top side: 2.5 mm (Max)
The height of bottom side: 0 mm
The screw mounting hole: M3

Pin & Connector Assignment:

CN1: 1mm Pitch 20-PIN INPUT CONNECTOR
(TRONTEK TS107WR-S-20GC or Equivalent)

PIN NO.	SIGNAL	FUNCTION
01	RxIN0-	Differential Data Input, CH0 (Negative)
02	RxIN0+	Differential Data Input, CH0 (Positive)
03	GND	Ground
04	RxIN1-	Differential Data Input, CH1 (Negative)
05	RxIN1+	Differential Data Input, CH1 (Positive)
06	GND	Ground
07	RxIN2-	Differential Data Input, CH2 (Negative)
08	RxIN2+	Differential Data Input, CH2 (Positive)
09	GND	Ground
10	CLKIN-	Differential Clock Input (Negative)
11	CLKIN+	Differential Clock Input (Positive)
12	GND	Ground
13	RxIN3-	Differential Data Input, CH3 (Negative)
14	RxIN3+	Differential Data Input, CH3 (Positive)
15	LED_ENA	Enable Control Signal for LED Converter
16	LED_PWM	PWM Control Signal for LED Converter
17	VIN	Power Supply For Digital Circuit
18	VIN	Power Supply For Digital Circuit
19	VIN	Power Supply For Digital Circuit
20	VIN	Power Supply For Digital Circuit

CN2: 0.5mm Pitch 40-PIN OUTPUT CONNECTOR

(CviLux CF1140F-00-05-NH or Equivalent)

Pin No.	Symbol	I/O	FUNCTION	Remark
01	VCOM	P	Common Voltage (3.0V)	
02	VDD	P	Power Supply	
03	VDD	P	Power Supply	
04	NC	--	No connection	
05	NC	--	No connection	
06	NC	--	No connection	
07	GND	P	Ground	
08	Rxin0-	I	-LVDS Differential Data Input Differential Data Input, CH1 (Negative)	R0-R5, G0
09	Rxin0+	I	+LVDS Differential Data Input Differential Data Input, CH1 (Positive)	
10	GND	P	Ground	
11	Rxin1-	I	-LVDS Differential Data Input Differential Data Input, CH1 (Negative)	G1~G5, B0,B1
12	Rxin1+	I	+LVDS Differential Data Input Differential Data Input, CH1 (Positive)	
13	GND	P	Ground	
14	Rxin2-	I	-LVDS Differential Data Input Differential Data Input, CH2 (Negative)	B2-B5,HS,VS, DE
15	Rxin2+	I	+LVDS Differential Data Input Differential Data Input, CH2 (Positive)	
16	GND	P	Ground	
17	CLKIN-	I	-LVDS Differential Clock Input Differential Clock Input (Negative)	LVDS CLK
18	CLKIN+	I	+LVDS Differential Clock Input Differential Clock Input (Positive)	
19	GND	P	Ground	
20	Rxin3-	I	-LVDS Differential Data Input Differential Data Input, CH3 (Negative)	R6, R7, G6, G7, B6, B7
21	Rxin3+	I	+LVDS Differential Data Input Differential Data Input, CH3 (Positive)	
22	GND	P	Ground	
23	NC	--	No connection	

24	NC	--	No connection	
25	GND	P	Ground	
26	NC	--	No connection	
27	NC	--	No connection	LED_PWM
28	NC	--	No connection	
29	AVDD	P	Power for Analog Circuit (+8.2V)	
30	GND	P	Ground	
31	LED-	P	LED Cathode	
32	LED-	P	LED Cathode	
33	NC	--	No connection	
34	NC	--	No connection	
35	VGL	P	Gate OFF Voltage (-7V)	
36	NC	--	No connection	
37	NC	--	No connection	CABC_EN
38	VGH	P	Gate ON Voltage (+22V)	
39	LED+	P	LED Anode	
40	LED+	P	LED Anode	

3. Absolute Maximum Ratings (Note 1)

Rating	Symbol	Value	Units
Input Voltage	VCC,max	+6.0	VDC
Operating Temperature	Ta,max	-20 -- +70	℃
Storage Temperature	Ts,max	-25 -- +80	℃
Operating Humidity (without dewdrop)	Ha,max	80 %	R.H
(without dewdrop)	Hs,max	95 %	R.H

(Note 1):
Reliable and predictable operation of the device is not guaranteed with applied stresses at or beyond those listed in “Absolute Maximum Ratings”. Operation at these limits may reduce device reliability and is therefore not recommended. Please refer to “Recommended Operating Conditions” for reliable operation of the device.

Recommended Operating Conditions (Note 2)

Rating	Symbol	Value	Units
Input Voltage	Vin	4.5 ~ 5.5	VDC
Operating Temperature	Ta	20 ~ 50	℃
Operating Humidity	Ha,max	40 ~ 60 %	R.H

(Note 2):
Reliable operation above 60℃ is possible if airflow is provided.

4. Electrical Characteristics and Specifications

Unless otherwise noted Vin= 5.0 Volts DC, Ta=25℃ and unit has been running for over 30 minutes.

Parameter	Symbol	Min.	Typ.	Max.	Unit	Remarks (Test Conditions)
Input Specification						
Input Voltage	Vin	4.5	5.0	5.5	VDC	
Input Current	Iin	1.2	1.5	1.8	ADC	100% brightness
On/Off control	ON/OFF	2.0	3.0	5.5	VDC	ON STATE
		-	0	0.7		OFF STATE
DIM Frequency	PWM DIM	200	300	1000	HZ	
Dimming duty cycle	PWM DIM	10%		100%		
Output Specification						
LED Current	ILED		TBD		mA	100% brightness
					mA	10% brightness (TBD)